

Nighttime Fears and Fantasy–Reality Differentiation in Preschool Children

Tamar Zisenwine · Michal Kaplan · Jonathan Kushnir ·
Avi Sadeh

Published online: 3 July 2012
© Springer Science+Business Media, LLC 2012

Abstract Nighttime fears are very common in preschool years. During these years, children’s fantasy–reality differentiation undergoes significant development. Our study was aimed at exploring the links between nighttime fears and fantasy–reality differentiation in preschool children. Eighty children (aged: 4–6 years) suffering from severe nighttime fears were compared with 32 non-fearful controls. Fears were assessed using child and parental reports. Children viewed images depicting fantastic or real entities and situations, and were asked to report whether these were imaginary or could occur in real life. The results revealed that children with nighttime fears demonstrated more fantasy–reality confusion compared to their controls. These differences in fantasy–reality differentiation were more pronounced in younger children. Additional significant associations were found between fantasy–reality differentiation and age and specific characteristics of the stimuli. These preliminary findings, suggesting a developmental delay in fantasy–reality differentiation in children with nighttime fears, have significant theoretical and clinical implications.

Keywords Nighttime fears · Anxiety · Preschool · Child · Fantasy · Reality

Introduction

Nighttime fears are very common phenomena in normal and abnormal child development. While children struggle with nighttime fears they gradually develop the ability to distinguish between reality and imagination or fantasy. The aim of the present study was to explore the ability of preschool children with significant nighttime fears to distinguish between fantasy and reality.

T. Zisenwine · M. Kaplan · A. Sadeh (✉)
School of Psychological Science, Tel Aviv University, 69978 Tel Aviv, Israel
e-mail: sadeh@post.tau.ac.il

J. Kushnir
Sleep and Anxiety Center for Kids, Houston University, Houston, USA

Children's Fears and Nighttime Fears

Fears are highly prevalent during child development [1–3]. High levels of fear and anxiety in children and adolescents have been linked to difficulties in daily functioning, social difficulties, academic difficulties, low levels of self-esteem, high levels of depression, and in some cases even drug abuse [4, 5].

Nighttime fears, which are related to fears of nocturnal separation, darkness, sleep and scary dreams, are among the most common fears in childhood. Studies have shown that almost two-thirds of 4–12 year-old children experience nighttime fears [6–8]. Despite the fact that most children seem to outgrow these fears, some children experience severe forms of nighttime fears. For instance, it has been found that children with nighttime fears account for about 15 % of the total referrals for the treatment of childhood phobias [9]. Furthermore, Muris et al. [7] found that in 11.3 % of normal children between the ages of 4 and 12 years old, significant nighttime fears were linked to one or more of the following anxiety disorders according to DSM III: separation anxiety disorder, over anxious disorder, animal phobias and environmental phobias, thus indicating that persistent nighttime fears may reflect general temperamental vulnerability to anxiety or that nighttime fears are otherwise related to broader symptoms of anxiety.

Modern research has highlighted the interaction between key factors including cognitive, biological and environmental factors in the development of fears [3, 10]. Rachman's [11] three pathways to fear model (conditioning, modeling and exposure to negative information) has been examined in the context of common childhood fears [12–15]. Muris et al. [15] concluded that modeling is a crucial etiological factor regarding children's general fear level, but when it comes to specific fears, conditioning becomes the main factor. With regard to nighttime fears, Muris et al. [7] found that negative information by television was considered by children to be the main cause of their fears, and suggested that nighttime fears may be a separate category of childhood fears, with its own etiology related to exposure to negative information.

Nighttime fears are usually referred to as a “heterogenic group of fears” [7]. Studies have shown that the contents of these fears tend to have a developmental progression, related to children's cognitive ability to discern fantasy and reality. For example, Bauer [6] found that fear of imaginary entities decreases in prevalence as children grow older. In his study, 74 % of children 4–6 years old reported that they were afraid of ghosts and monsters, whilst only 53 % of children 6–8 years old and 5 % of children 10–12 years old reported such fears. Accordingly, Muris et al. [7] found that nighttime fears and fears of imaginary creatures decrease with age, whereas fears of bodily harm and scary thoughts increase with age. Thus, these studies suggest a link between fears, and in particular, nighttime fears, and the developing ability to discern fantasy and reality.

Preschool Children's Ability to Discern Fantasy and Reality

Research on children's fantasy–reality differentiation has provided complex results. Several studies have shown that children as young as three years are able to adequately distinguish fantasy from reality in various contexts [16–18]. Other studies have shown that there are circumstances under which children confuse fantasy and reality [19, 20]. For instance, several studies in which young children were asked to imagine different entities in boxes suggest that they believed in the existence of these entities. Children were more inclined to approach boxes containing imagined entities compared to other empty boxes,

and showed a preference toward boxes containing positive imagined entities (e.g., gifts, fairies) as opposed to negative entities [19, 21, 22].

Attempts have been made to identify which factors influence preschool children's fantasy–reality differentiation. Identified factors included: (a) presence of an adult nearby [21]; (b) the potential impact of fantasy–reality differentiation on the situation or another person [23]; (c) children's certainty regarding the fact that an imaginary entity is not present [24]; and (d) the involvement of emotions. More specifically, it seems that discerning emotional fantasy from reality may pose a greater challenge for young children compared to neutral fantasy–reality differentiation [19, 25, 26]. In a study conducted by Samuels and Taylor [27], 3–5 year-old children were presented with neutral versus frightening images depicting fantasy or reality. Subjects were asked to rate their emotional response to the image and to state whether it “could happen in real life.” Interestingly, these preschoolers accurately judged neutral images and frightening fantastic images, but were inclined to err by stating that frightening real events could not occur. Moreover, the reported intensity of fears of these images affected performance, as children who were more frightened were also more likely to make inaccurate judgments concerning frightening events. In accordance with these results, Carrick and Quas [26] found that preschool children judged happy events as more likely to occur compared to frightening events, regardless of their fantastic or real content.

Several explanations for these results have been proposed. First, children's responses may reflect an attempt to regulate their emotional arousal, i.e., reduce negative emotions. By denying the possible occurrence of negative events, children psychologically disengage from these events and reduce the anxiety they may provoke [27]. Second, it is possible that these responses represent children's desires for positive events to occur and negative events not to occur, rather than their actual beliefs concerning these events [26, 28]. Third, children's judgments may reflect their prior experiences, knowledge and expectations [29]. Since they do not regularly experience negative events, they may not hold the underlying knowledge and expectation that these events can occur [30].

Finally, fantasy–reality differentiation may be influenced by environmental factors, such as cultural traditions and adult encouragement. Parents typically shelter their children from negative events and may actively dissuade them from believing in negative entities, as a means of reducing their anxiety [26]. In contrast, parents tend to promote children's beliefs in positive entities, including fantastic ones such as Santa Claus and the Tooth Fairy [26]. It has been found that parental encouragement to believe in a positive fantastic entity increased some children's belief in that entity [31]. Thus, children's biases might reflect parental attitudes, culture and education.

Researchers have also raised the possibility that certain cognitive processes may contribute to children's fantasy–reality differentiation. Woolley [28] claims that children's ability to discount the possibility that imaginary events could occur is weaker than the ability of adults. She also suggests that when children feel fear of an imaginary entity, the intensity of the emotion is very real to them, hence they conclude that the imaginary entity must also be real. In this case, the intense emotion disrupts the cognitive process that allows the child to discount the thought regarding the imaginary entity's existence.

Another cognitive process which may shed light on children's fantasy–reality differentiation skills is the availability hypothesis [19, 32]. This hypothesis is based on Tversky and Kahneman's [33] ‘availability heuristic’, which proposes that objects or events that are easily brought to mind tend to be judged as more common and probable. When applied to children's ability to discern pretense from reality, it has been argued that imagining something enhances its cognitive availability, thus increasing the perceived likelihood of

the imagined entity being real [19, 24, 25, 32]. Therefore, when children visualize frightening stimuli these become accessible and are consequently perceived as more real.

The Present Study

The purpose of this study was to examine the links between nighttime fears and fantasy–reality differentiation in preschool children. Our first hypothesis was that children who suffer from nighttime fears would have lower fantasy–reality differentiation in comparison to control children with no significant nighttime fears. This hypothesis was based on two possible explanations: (a) lower fantasy–reality differentiation makes children more vulnerable to nighttime fears and (b) strong emotions, as well as the high cognitive availability of thoughts and fears relating to imaginary entities may cause greater confusion regarding fantasy–reality distinction. Furthermore, we hypothesized that the emotional valence of the stimuli would affect children’s ability to distinguish between pretense and reality. That is, fantasy–reality differentiation levels will differ for positive and negative entities. In line with previous research, it was also hypothesized that older children from both groups would have better fantasy–reality differentiation.

Method

Participants

One-hundred and twelve preschool children participated in the study. Children’s age ranged between 3.8 and 6.5 years (mean = 4.90, SD = .69). The clinical group included 80 children (50 boys and 30 girls) who participated in an intervention study for nighttime fears. They were recruited by letters to parents in kindergartens inviting them to participate in a study on assessment and interventions for nighttime fears in children. The control group included 32 children (18 boys and 14 girls) with no reported nighttime fears from families with similar socio-economic background (see Table 1) recruited from the kindergartens to participate in a study on sleep and nighttime fears in children. The parents’ incentive was to obtain some feedback on their child’s performance and well-being. The children received a modest gift for their participation.

Procedures

The study was approved by the university Ethics Committee. Parents signed informed consent. The children and their parents were interviewed separately. They completed the

Table 1 Demographic characteristics of the children from the clinical and control groups

	Clinical group <i>N</i> = 80	Control group <i>N</i> = 32
Child’s age	4.84 ± 0.66	5.05 ± 0.77
Gender (% of boys)	62.50 %	56.25 %
Mother’s age	35.95 ± 4.08	34.98 ± 3.90
Mother’s education	15.79 ± 2.28	16.19 ± 2.04
Father’s age	37.78 ± 4.65	36.00 ± 5.14
Father’s education	15.31 ± 2.50	15.48 ± 2.58

None of the group differences was statistically significant

nighttime fears interview for parents or children and the general fear level assessment questionnaires for parents and children. In addition, the children were interviewed using two instruments examining their fantasy–reality differentiation.

Instruments

Nighttime Fears Interview for Children

To assess directly the type and level of their nighttime fears children were interviewed using an established structured interview [7]. This structured interview starts with a brief story read to the child from a picture book that sets the stage for talking about fears. The interview lasts approximately 10 min and provides scores on the frequency and severity of different nighttime fears. A total nighttime fears score was calculated based on the child interview. In previous studies, the interview has been validated with children as young as 4 years of age [34].

Nighttime Fears Interview for Parents

Parents were asked identical questions regarding the content, frequency, and severity of their child's nighttime fears [7, 35]. A total nighttime fears score was calculated according to parental reports.

Koala Fear Questionnaire

The Koala Fear Questionnaire (KFQ) was used to directly assess the children's general fears [34]. The questionnaire consists of 31 pictorial stimuli and situations, which can potentially elicit fear. KFQ stimuli and situations were derived from self-reported top intense fears among 4- to 12-year-old children [36, 37], and from items constructing the fear survey schedule for children [38]. Children rate their level of fear of each stimulus or situation on a visual scale depicting Koala bears that express 3 levels of fear. Previous research has demonstrated that the KFQ is reliable in terms of internal consistency (in the 0.80–0.90 range), test–retest stability (0.84), and possesses adequate validity as evidenced by its positive correlations with alternative measures of childhood fears and anxiety. The Cronbach's Alpha internal consistency estimate for this questionnaire in our study was 0.93. A general fear score was calculated based on the KFQ.

Preschool Children's General Fear Questionnaire for Parents

Parents were asked to estimate their children's fear level regarding 52 stimuli and situations on a 4-point scale. This questionnaire was based on the fear survey schedule for children [38], with a few minor adaptations (e.g., adding locally relevant items such as fear from terror attacks or wars, and dropping a few irrelevant items such as earthquakes). A general fear score was calculated based on parental reports. The internal reliability of the questionnaire was calculated for the clinical group, control group, and the total sample. The internal reliability scores, based on Cronbach's alpha, were 0.77, 0.86, and 0.79, respectively.

Child Behavior Checklist (CBCL)

The CBCL was used to assess behavior problems as perceived by parents [39]. The CBCL is a widely used tool for assessing behavior problems in children, with well-established psychometric properties. The CBCL has been translated to Hebrew and validated in Israel [40]. The CBCL version for children ages 1.5–5 years was used. Raw scores were used because of the narrow age range with similar normative ranges. We used the CBCL Total, Externalizing and Internalizing scores to assess behavior problems and control for their effects.

Fantasy–Reality Situations Interview

This structured interview was partly based on an instrument developed by Carrick and Quas [26]. In their study, children were presented with pictures of real and imaginary situations that evoked different emotions. Children were asked if the event depicted in the picture could occur in real life. Their study's purpose was to examine the effect of the type of emotion evoked by the picture on the children's ability to make the distinction between fantasy and reality. The selected pictures were chosen to elicit a range of emotions (happiness, sadness, anger and fear). Their findings showed that certain emotions (happiness, anger and fear) do affect the fantasy–reality differentiation.

In the present study, we chose to focus on a narrower range of emotions (scary vs. neutral-positive emotions), due to the fact that the purpose of the study was to examine the effect of fear on fantasy–reality differentiation. Thus, children were presented with 18 black and white illustrations of real and imaginary situations. Each situation was aimed to evoke either fear or neutral-positive emotion. For instance, a fear inducing situation would be: “A monster frightening a child in the dark” or “Burglars breaking into the house” and a neutral-positive situation would be: “A child going to school” or “A woman waiting at the bus stop.” The presentation of each pictorial illustration was accompanied by a verbal description of the situation, and children were asked if the described situation could happen in reality or only in imagination. Children were also asked to explain their answer to obtain clearer understanding of their logic. Errors could be in the form of denying the reality of a reality-based situation or by approving a fictional situation.

The answers were coded as correct or incorrect and the explanations of wrong answers were coded on three level scales according to the quality of the explanation and its link with reality. For example, when the presented situation was “a dog biting a child” an answer such as “dogs don't bite” received the lowest score (0); An answer such as: “our dog is always on leash so it never bites” received an intermediate score (1); and an answer in which the child corrected him/herself: “actually, dogs do bite” received the highest score (2). The Cronbach's Alpha internal consistency estimate for this questionnaire in our study was 0.81. Two graduate students in clinical psychology rated the interviews. The inter-rater reliability (IntraClass Correlations) computed on a sample of 20 randomly selected questionnaires was 0.87. Four summary scores were calculated based on the different items: (1) Reality-based scary situations score; (2) Reality-based neutral/positive situations score; (3) Fantasy-based scary situations score; and (4) Fantasy-based neutral/positive situations score. These scores were chosen to reflect the valence and the reality-fantasy dimensions of the situations.

Imaginary Entities Interview

In this structured interview, children were presented with black and white illustrations of three imaginary entities: a fairy, a monster and Bob the Builder. In regard to each entity, the

children were asked six questions that examined their understanding regarding the entity's existence. The questions were: "Do you think this fairy can come to your home?"; "Do you think you could meet this fairy outside, in the street or in a playground?"; "Do you think you could see this fairy in a movie or on TV?"; "Do you think you could call this fairy on the phone and talk to her?"; "Do you think you could write this fairy a letter, send it to her and have her receive it?"; "Do you think you could meet the fairy and play with her?"

The children were asked to explain each of their answers. These explanations were later coded according to the extent to which they reflected proper fantasy–reality differentiation, on a three level scale. For example, an answer such as: "I can't call the monster on the phone because it will eat it" received the lowest score (0); An answer such as: "I can't send the fairy a letter because she lives in the sky" received an intermediate score (1), because this type of answer reflects a certain understanding that the fairy belongs to a different world from the day-to-day world; An answer such as: "I can't meet the fairy because fairies don't exist" received the highest score (2).

The choice to use these three entities was based on a study by Sharon and Wolley [41], which examined children's reactions to generic versus familiar imaginary entities. For the purpose of the present study, entities that evoke opposing emotions (fear and happiness) were chosen in order to further examine the effect of different emotions on fantasy–reality differentiation. The Cronbach's Alpha internal consistency estimate for this questionnaire in our study was 0.94. The inter-rater reliability (IntraClass Correlations) computed on a sample of 20 randomly selected questionnaires was 0.98. Three summary entities scores served for data analysis: fairy, monster and Bob the Builder.

Data Analysis

Before addressing the main aims of the study, we first examined group differences in fear levels and behavior problems. This examination was conducted using ANOVAs with group (clinical vs. control and), gender and age (after age was divided to younger and older than 5-years groups), as independent variables and fear and behavior problems scores as the dependent variables. The age of 5 years was chosen as a cutoff for dividing the groups because it created two groups with similar size and because it usually divides the children into different kindergarten classes.

The aims of the main data analysis were: (a) to identify developmental and gender differences in fantasy–reality differentiation; (b) to assess the group differences (clinical vs. control children) in fantasy–reality differentiation; (c) to identify the effect of Situation or Entity characteristics (e.g., scary vs. neutral situation, real vs. imagined situation); and (d) assess potential interactions between group the other independent variables. Multivariate Analysis of Variance (MANOVA) was used with gender, age (younger and older than 5-years groups) and group (children with nighttime fears vs. controls) as the independent variables. For the Entities task the specific entity type (Fairy, Bob the Builder, or Monster) was also included as a repeated variable in the analysis. For the Situations task the Situation Type (real vs. imagined) and the valence (scary vs. positive-neutral) was included as a repeated variable.

Results

The results are reported in three sections: (a) data analyses conducted to assess group-related differences in fear levels and behavior problems; (b) data analyses conducted to

assess the factors associated with fantasy–reality differentiation; and (c) the direct associations between fantasy–reality differentiation and fear measures.

Fear and Behavior Problems: Validation of Group Differences

The ANOVAs conducted with the different fear measures derived from the children and their parents revealed that children in the clinical group received significantly higher fear scores compared to their controls on all four fear measures as well as on the CBCL internalization score (see Table 2). Furthermore, the clinical group had significantly elevated CBCL Total and CBCL Internalizing scores.

In addition to the significant main group effects, there was a significant gender difference with regard to general fears as reported by the child ($F = 5.1$; $p < .05$); girls reported more fears than boys (1.93 ± 0.39 vs. 1.70 ± 0.51 , respectively). There were no significant age-related effects.

Table 2 Fear measures of the children from the clinical and control groups (mean \pm STD)

	Clinical group <i>N</i> = 80	Control group <i>N</i> = 32	<i>F</i>
Nighttime fears—child report	4.49 \pm 1.64	1.41 \pm 1.58	80.8 [#]
Nighttime fears—parent report	5.53 \pm 1.11	0.87 \pm 1.24	377.8 [#]
Global fears—child report	1.86 \pm 0.51	1.62 \pm 0.35	8.1*
Global fears—parent report	2.09 \pm 0.36	1.69 \pm 0.29	28.7 [#]
CBCL—total score	36.96 \pm 27.74	22.62 \pm 14.75	8.6**
CBCL—internalizing	12.63 \pm 8.82	5.97 \pm 4.17	14.0***
CBCL—externalizing	11.71 \pm 7.73	8.21 \pm 6.18	3.5

* $p < .01$; ** $p < .005$; *** $p < .0005$; [#] $p < .0001$

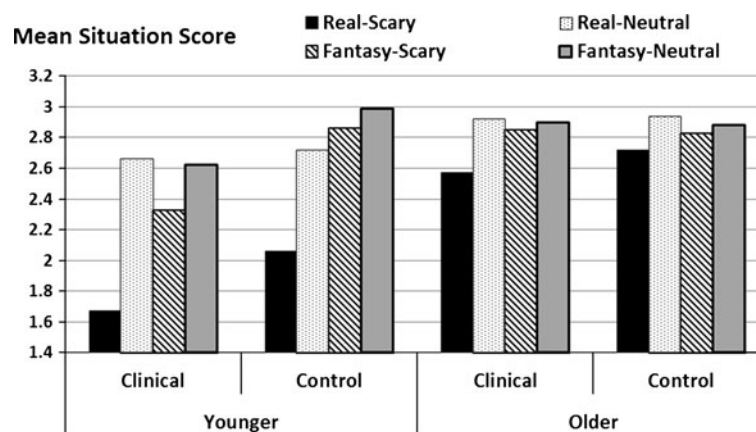


Fig. 1 Fantasy–reality differentiation on the situations interview. Means for each Group (clinical and control) and Age (older age >5 years) on each of the specific Situations category

Table 3 Main and interactions effects in the MANOVA related to the situation interview of the fantasy–reality differentiation assessment

Only significant effects are included. None of the gender related effects have reached statistical significance

Effect	<i>F</i> (1, 104)	<i>p</i> <
Between-subjects effects		
Age group (<5 years or >5 years)	20.27	.0001
Group (clinical vs. control)	6.89	.01
Age * group	5.10	.05
Within-subjects effects		
Type (fantasy vs. real)	16.02	.0001
Type * age	6.92	.01
Valence (scary vs. neutral/positive)	60.26	.0001
Valence * age	16.37	.0001
Valence * type	18.79	.0001

Fantasy–Reality Differentiation

With regard to the fantasy–reality differentiation Situations scores, the results are summarized in Fig. 1 and Table 3. A significant Age by Group interaction was found. Post-hoc analysis revealed that the group differences were only significant in the younger age group ($F = 7.33$; $p < .01$). A significant Type by Age interaction was found indicating that the differences between reality- and fantasy-based situations were only significant in the younger age group ($F = 14.91$; $p < .005$). A significant valence by age interaction was found indicating that the differences between scary and neutral-positive situations were larger in the younger children (but still significant in both age groups ($p < .005$). Finally, a significant valence by type interaction was found indicating the combination of reality-based scary situations received the lower scores in comparison to the other combinations.

Main effects were found for: (a) Age: older children (>5 years) achieved higher scores; (b) Group: lower scores in the clinical sample; (c) Type: higher scores were achieved on fantasy-based situation in comparison to reality-based situation; (d) Emotional valence: scary situations led to lower scores in comparison to neutral/positive situations.

With regard to the fantasy–reality differentiation Entities scores the results are summarized in Fig. 2 and Table 4. Significant main effects were found for: (a) Age: older

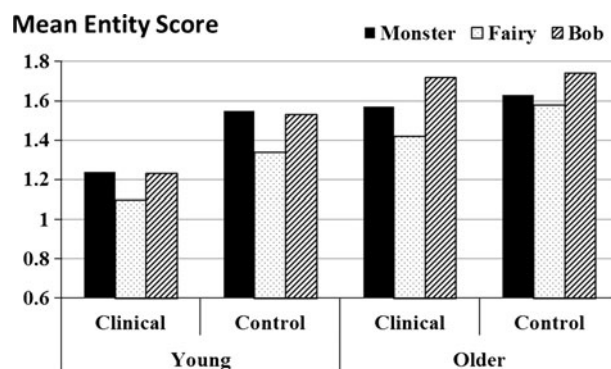


Fig. 2 Fantasy–reality differentiation on the entities interview. Means for each entity (monster, fairy and Bob the Builder) by Group (clinical vs. control) and age (older age >5 years)

Table 4 Main and interactions effects in the MANOVA related to the entities interview of the fantasy–reality differentiation assessment

	<i>df</i>	<i>F</i>	<i>p</i> <
Between-subjects effects			
Age group (<5 years or >5 years)	1, 104	9.69	.005
Group (clinical vs. control)	1, 104	3.96	.05
Within-subjects effects			
Type (monster/fairy/bob the builder)	2, 208	7.34	.001

Only significant effects are included

None of the gender related effects have reached statistical significance

children receiving higher scores than younger children; and (b) Group: control children receiving higher scores than children from the clinical group. A significant type effect was found indicating that children's scores related to the Fairy were lower than those related to the monster and Bob the Builder.

Direct Associations Between Fantasy–Reality Differentiation and Fears

To further elucidate the links between fantasy–reality differentiation and fear and anxiety scores we calculated a total score for the fantasy–reality differentiation tasks by averaging all subscale scores. We then calculated Spearman correlations between this total score and the fear scores in each age group. In the younger age group (age <5 years), strong and significant correlations were found between the fantasy–reality differentiation total score and the fear scores: $r = -.45$, $p < .001$ with nighttime fears, and $r = -.34$, $p < .05$ with general fears. In the older age group (age >5 years) these correlations were close to zero and non-significant.

Discussion

Before addressing the main findings of our study it is important to address the group differences in fear-related measures and in behavior problems. The results indicated that children in our clinical sample were indeed more fearful compared to controls as reported by both children and parents, thus validating the expected group differences in nighttime fears. Furthermore, our findings indicate that children with nighttime fears also suffer from higher levels of general fears and more behavior problems (particularly of internalizing nature) thus suggesting that nighttime fears may reflect a broader vulnerability to general fears, anxiety and internalizing disorders [5].

In line with previous findings regarding the developmental progression of fantasy–reality differentiation, our results, on both the Situations and Entities interviews, suggest that children's ability to distinguish between fantasy and reality improves as they grow older. As expected, children under 5 years of age were more likely to confuse fantasy and reality than children over 5 years. As Piaget [42] described, it seems that young children are especially susceptible to magical thinking because of their cognitive immaturity.

When addressing the significant group differences in fantasy–reality differentiation, it is important to note the significant group by age interaction found on the scores of the Situations Interview. This interaction indicated that the group differences were only significant in the

younger age group. These findings suggest a developmental delay in fantasy–reality differentiation among children with nighttime fears. Despite this delay, older children in both groups demonstrated increased ability to discern fantasy and reality. However, it could be argued that the older children in this study reached the maximum level of fantasy–reality differentiation on these specific measures and that a “ceiling effect” may have led to the lack of group differences in the older children on the Situations Interview.

Beyond the developmental aspects of fantasy–reality differentiation, the main purpose of this study was to investigate the links between nighttime fears and the ability to discern fantasy from reality among preschool children. As hypothesized, children suffering from nighttime fears demonstrated more fantasy–reality confusion compared to controls. Hence, in addition to other factors that have been associated with fantasy–reality differentiation in previous studies, our results indicate that the presence of nighttime fears or general fears predicts individual differences in preschool children’s fantasy–reality differentiation abilities.

The association between fears and fantasy–reality differentiation may have several origins and paths. It is possible, for instance, that a less developed ability to distinguish fantasy from reality may contribute to the emergence and persistence of children’s fears. Observations on children’s pretend play have generated various illustrations of fear elicited by the fantasized situation. For example, DiLalla and Watson [20] described a preschooler’s fearful reaction to the monster he himself was pretending to be. Thus, children’s uncertainty regarding the existence of magical entities such as witches, ghosts and monsters may generate and maintain fears of these creatures.

Alternatively, it could be assumed that intense fears hinder the development and practice of fantasy–reality differentiation skills. Based on Woolley’s assumption, it may be that the intense emotions experienced by children who suffer from fears disrupt their ability to discount the idea that imaginary events or entities are real, particularly when these stimuli are charged with negative or frightening valence [28]. Harris et al. [19] proposed that decreased discounting abilities may increase children’s susceptibility to availability effects, which have also been claimed to contribute to fantasy–reality confusions [24, 25]. These assumptions received partial support in the current study. On the Situations Interview, children in both groups received lower scores when the situations were considered scary as opposed to neutral-positive situations, thus supporting the hypothesis about increased vulnerability in processing information with negative valence. However, on the Entities Interview, children in both groups were more inclined to err when making judgments concerning the fairy, compared to Bob the Builder and the monster. In other words, children were able to assert that the monster and Bob the Builder weren’t real, but tended to report that events involving fairies could actually occur.

With regard to Bob the Builder, fantasy–reality differentiation addressing familiar television characters seems to be less complicated for 4–6 year old children. It has been found that by 4 years of age most children understand the distinction between television and the real world, and make accurate judgments regarding the fictional status of programs containing animation [43, 44]. Our findings regarding the monster and the fairy are consistent with previous findings concerning young children’s tendency to claim that positive events can occur, whereas negative events cannot, regardless of their fantastic or real content [26, 27]. These biases may be due to children’s motivational factors, such as their desire to approach positive events. It is possible that children judge imagined entities and situations based on their wishes, on top of their beliefs [26, 28]. Alternatively, the biases may reflect avoidance and denial of negative stimuli, which are aimed at reducing fear [27]. It may also be postulated that parental education plays a critical role in children’s fantasy–reality differentiation [26]. For instance, parents may habitually attempt to calm

their children by stating that “monsters do not exist”, and at the same time promote children’s beliefs in positive imaginary entities such as fairies (e.g., the Tooth Fairy). In addition, children’s coping strategies with fearful stimuli evolve with age and may influence both fear reactions and fantasy–reality differentiation [45].

The findings on low fantasy–reality differentiation in young children with nighttime fears may have significant clinical implications. One potential implication could be that increasing the ability to differentiate between fantasy and reality should be on the agenda in clinical work with children suffering from nighttime fears. Another implication could be that one can work with the disadvantage of low fantasy–reality differentiation and use it in interventions based on imagination or imaginary solutions. It has been shown that children tend to use their imagination to overcome fears [45]. Recent studies have demonstrated that providing a puppy doll with certain cover stories related to this figure can help children cope with stressful life events [46] and lead to significant reduction in nighttime fears in preschool children [47].

The limitations of this preliminary study should be emphasized. The overlap between nighttime fears and general fears and internalizing behavior problems preclude conclusions regarding the specific role of nighttime fears versus general fears and anxiety. The fact that a ceiling effect occurred on the fantasy–reality differentiation tasks in the older children may have limited the sensitivity of the study in this age group. Future research should address these important issues.

Notwithstanding these limitations, to the best of our knowledge, this study is the first to demonstrate a link between fears and the ability to differentiate between fantasy and reality during an important developmental period of these phenomena. Results indicate that preschool children suffering from nighttime fears have more difficulties discerning fantasy from reality compared to non-fearful children. In addition, emotional valence was found to play a critical role in fantasy–reality differentiation. Additional empirical work is needed to further explore these links using explicit and implicit measures in a longitudinal manner that would enable better understanding of the underlying developmental mechanisms and their causal relationships. Clinical research should further highlight the role of fantasy–reality differentiation in developmental psychopathology and in clinical interventions.

Summary

This study assessed fantasy–reality differentiation in preschool children (aged 4–6 years) with nighttime fears and age-matched controls. Fantasy–reality differentiation was improved in older children in both groups demonstrating a significant developmental trend within this age range. In the younger age group (age <5 years) nighttime fears and fears in general were significantly associated with fantasy–reality differentiation. Higher fear level was associated with lower fantasy–reality differentiation. Factors such as the valence of the stimuli (scary vs. natural) also play a significant role in children’s ability to discriminate between fantasy and reality. Fantasy–reality differentiation may play a major role in early childhood fears and their resolution. This role and its clinical applications should be further explored.

Acknowledgments The study was supported by the Israel Science Foundation (grant no. 1047/08 to Avi Sadeh). The authors are thankful to Ornit Arbel for coordinating and managing the study and to the participating families.

Conflict of interest The authors have no conflict of interest to report.

References

1. Gullone E (2000) The development of normal fear: a century of research. *Clin Psychol Rev* 20:429–451
2. Muris P, Merckelbach H, Gadet B, Moulart V (2000) Fears, worries, and scary dreams in 4-to 12-year-old children: their content, developmental pattern, and origins. *J Clin Child Psychol* 29:43–52
3. Muris P (2007) Normal and abnormal fear and anxiety in children and adolescents. Elsevier Science & Technology, Boston
4. Ollendick TH, King NJ (1994) Fears and their level of interference in adolescents. *Behav Res Ther* 32:635–638
5. Muris P, Merckelbach H, Mayer B, Prins E (2000) How serious are common childhood fears? *Behav Res Ther* 38:217–228
6. Bauer DH (1976) Exploratory study of developmental changes in children's fears. *J Child Psychol Psychiatry* 17:69–74
7. Muris P, Merckelbach H, Ollendick TH, King NJ, Bogie N (2001) Children's nighttime fears: parent-child ratings of frequency, content, origins, coping behaviors and severity. *Behav Res Ther* 39:13–28
8. Gordon J, King N, Gullone E, Muris P, Ollendick TH (2007) Nighttime fears of children and adolescents: frequency, content, severity, harm expectations, disclosure, and coping behaviours. *Behav Res Ther* 45:2464–2472
9. Graziano AM, Mooney KC, Huber C, Ignasiak D (1979) Self-control instruction for children's fear-reduction. *J Behav Ther Exp Psychiatry* 10:221–227
10. King NJ, Hamilton DI, Ollendick TH (1988) Children's phobias: a behavioral perspective. Wiley, Chichester
11. Rachman S (1977) The conditioning theory of fear-acquisition: a critical examination. *Behav Res Ther* 15:375–387
12. Ollendick TH, King NJ (1991) Origins of childhood fears: an evaluation of Rachman's theory of fear acquisition. *Behav Res Ther* 29:117–123
13. Merckelbach H, Muris P, Schouten E (1996) Pathways to fear in spider phobic children. *Behav Res Ther* 34:935–938
14. Muris P, Steerneman P, Merckelbach H, Meesters C (1996) The role of parental fearfulness and modeling in children's fear. *Behav Res Ther* 34:265–268
15. Muris P, Merckelbach H, Collaris R (1997) Common childhood fears and their origins. *Behav Res Ther* 35:929–937
16. Estes D, Wellman HM, Woolley JD (1989) Children's understanding of mental phenomena. *Adv Child Dev Behav* 22:41–87
17. Flavell JH, Flavell ER, Greene FL (1987) Young children's knowledge about the apparent-real and pretend-real distinctions. *Dev Psychol* 23:816–822
18. Wellman HM, Estes D (1986) Early understanding of mental entities: a reexamination of childhood realism. *Child Dev* 57:910–923
19. Harris PL, Brown E, Marriott C, Whittall S, Harmer S (1991) Monsters, ghosts and witches: testing the limits of the fantasy–reality distinction in young children. *Br J Dev Psychol* 9:105–123
20. DiLalla LF, Watson MW (1988) Differentiation of fantasy and reality: preschoolers' reactions to interruptions in their play. *Dev Psychol* 28:286–291
21. Bourchier A, Davis A (2000) Individual and developmental differences in children's understanding of the fantasy–reality distinction. *Br J Dev Psychol* 18:353–368
22. Bourchier A, Davis A (2000) The influence of availability and affect on children's pretence. *Br J Dev Psychol* 18:137–156
23. Woolley JD, Phelps KE (1994) Young children's practical reasoning about imagination. *Br J Dev Psychol* 12:53–67
24. Bourchier A, Davis A (2002) Children's understanding of the pretence–reality distinction: a review of current theory and evidence. *Dev Sci* 5:397–413
25. Bourchier A, Davis A (2002) The pretence–reality distinction—confusion, emotion and source monitoring. *Dev Sci* 5:422–426
26. Carrick N, Quas JA (2006) Effects of discrete emotions on young children's ability to discern fantasy and reality. *Dev Psychol* 42:1278–1288
27. Samuels A, Taylor M (1994) Children's ability to distinguish fantasy events from real-life events. *Br J Dev Psychol* 12:417–427
28. Woolley JD (1997) Thinking about fantasy: are children fundamentally different thinkers and believers from adults? *Child Dev* 68:991–1011

29. Hudson J, Nelson K (1983) Effects of script structure on children's story recall. *Dev Psychol* 19:625–635
30. Carrick N, Quas JA, Lyon T (2010) Maltreated and nonmaltreated children's evaluations of emotional fantasy. *Child Abuse Negl* 34:129–134
31. Woolley JD, Boerger EA, Markman AB (2004) A visit from the Candy Witch: factors influencing young children's belief in a novel fantastical being. *Dev Sci* 7:456–468
32. Johnson CN, Harris PL (1994) Magic—special but not excluded. *Br J Dev Psychol* 12:35–51
33. Tversky A, Kahneman D (1973) Availability—heuristic for judging frequency and probability. *Cognit Psychol* 5:207–232
34. Muris P, Meesters C, Mayer B, Bogie N, Luijten M, Geebelen E et al (2003) The Koala Fear Questionnaire: a standardized self-report scale for assessing fears and fearfulness in pre-school and primary school children. *Behav Res Ther* 41:597–617
35. Muris P, Verweij C, Meesters C (2003) The “anti-monster letter” as a simple therapeutic tool for reducing nighttime fears in young children. *Behav Change* 20:200–207
36. Muris P, Merckelbach H, Meesters C, Van Lier P (1997) What do children fear most often? *J Behav Ther Exp Psychiatry* 28:263–267
37. Muris P, Schmidt H, Merckelbach H (2000) Correlations among two self-report questionnaires for measuring DSM-defined anxiety disorder symptoms in children: the screen for child anxiety related emotional disorders and the Spence Children's Anxiety Scale. *Pers Individ Differ* 28:333–346
38. Ollendick TH (1983) Reliability and validity of the revised fear survey schedule for children (Fssc-R). *Behav Res Ther* 21:685–692
39. Achenbach TM, Edelbrock CS (1983) Manual for the child behavior checklist and revised child behavior profile. University of Vermont, Department of Psychiatry, Burlington
40. Zilber N, Auerbach J, Lerner Y (1994) Israeli norms for the Achenbach child-behavior checklist—comparison of clinically-referred and non-referred children. *Israel J Psychiatry Relat Sci* 31:5–12
41. Sharon T, Woolley JD (2004) Do monsters dream? Young children's understanding of the fantasy/reality distinction. *Br J Dev Psychol* 22:293–310
42. Piaget J (1930) *The construction of reality in the child*. Basic Books, New York
43. Flavell JH, Flavell ER, Green FL, Korfmacher JE (1990) Do young-children think of television images as pictures or real objects. *J Broadcast Electron Media* 34:399–419
44. Wright JC, Huston AC, Reitz AL, Piemyat S (1994) Young children's perceptions of television reality—determinants and developmental differences. *Dev Psychol* 30:229–239
45. Sayfan L, Lagattuta KH (2009) Scaring the monster away: what children know about managing fears of real and imaginary creatures. *Child Dev* 80:1756–1774
46. Sadeh A, Hen-Gal S, Tikotzky L (2008) Young children's reactions to war-related stress: a survey and assessment of an innovative intervention. *Pediatrics* 121:46–53
47. Kushnir J, Sadeh A (2012) Assessment of brief interventions for nighttime fears in preschool children. *Eur J Pediatr* 171:67–75