
Specific Phobias

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Introduction

Dear doctor, all of my children were wary of dogs when they were younger, but the fear of my youngest daughter, Kim (11 years), is far more extreme. Whenever she sees one of these animals, she will start to yell and cry hysterically, clinging to me like a little baby. Over the years, the problem has gotten worse. Her fear of dogs is currently so extreme that she does not dare to go on the street anymore. If she has to go out, for example on school days, we have to survey the area first before she can cross the street (luckily our house is opposite to the school). She is able to go in our garden since we

have put a fence around it, but only after we have checked it carefully. We cannot take her to the town center for shopping or to a park, and our last holiday on a campsite was a complete disaster.

This letter written by a mother provides a nice example of a child with a specific phobia. Kim displays marked and persistent fear and anxiety, and this extreme emotional reaction does not become manifest in relation to all types of stimuli and situations but specifically occurs when being confronted with dogs. In addition, fear and anxiety hinder Kim in her daily functioning, giving fear a pathological flavor and justifying the diagnosis of a clinical disorder. With a mean age of onset of 10 years (Kessler et al., 2007), specific phobias typically appear early in life. Thus, it makes sense that when interested in the pathogenesis and treatment of this anxiety disorder, one should focus on the childhood years (Ollendick & Muris, 2015). In this chapter, the knowledge on specific phobias in children and adolescents that has accumulated over the years will be summarized. First, the phenomenology of specific phobias will be addressed, followed by a brief exposé of the epidemiology of this anxiety disorder in youths. In the next section, factors involved in the etiology of specific phobias in children and adolescents will be discussed. Finally, an overview will be given of the most commonly used treatments of this condition.

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Phenomenology

The term phobia stems from the Greek word “phobos,” meaning fear. Since the beginning of the nineteenth century, the term phobia was increasingly used in its current sense to denote an intense fear that is out of proportion to the stimulus or situation that provokes it. Only in 1952, phobias became a diagnostic category in the Diagnostic and Statistical Manual of Mental Disorders (DSM). In the early editions of this psychiatric classification system, all phobias were grouped together, but from DSM-III onward, simple phobias were regarded as a separate disorder that was distinct from other phobic disorders such as agoraphobia and social phobia. In DSM-IV simple phobias were relabeled as specific phobias, but the criteria for defining this anxiety disorder have remained more or less the same. In the current edition of the DSM (i.e., DSM-5; American Psychiatric Association [APA], 2015), the following criteria need to be met:

- A. Marked fear or anxiety about a specific object or situation.
- B. The phobic object or situation almost always provokes immediate fear or anxiety.
- C. The phobic object or situation is actively avoided or endured with intense fear or anxiety.
- D. The fear or anxiety is out of proportion of the actual danger posed by the specific object or situation and to the sociocultural context.
- E. The fear, anxiety, or avoidance is persistent, typically lasting for 6 months or more.
- F. The fear, anxiety, or avoidance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- G. The disturbance is not better explained by the symptoms of another mental disorder, including fear, anxiety, and avoidance of situations associated with panic-like symptoms or other incapacitating symptoms (as in agoraphobia), objects or situations related to obsessions (as in obsessive-compulsive disorder), reminder of traumatic events (as in posttraumatic stress

disorder), separation from home or attachment figures (as in separation anxiety disorder), or social situations (as in social anxiety disorder).

The DSM discerns five subtypes of specific phobias, namely animal type (e.g., dogs, snakes, spiders), blood-injection-injury type (e.g., sight of blood, needles, invasive medical procedures), natural environment type (e.g., heights, thunderstorms, deep water), situational type (e.g., airplanes, elevators, tunnels), and other type (e.g., choking, costumed characters, loud sounds). There is some empirical support for the subtyping of specific phobias in young people. For example, in a factor analytic study performed on the fear ratings of 996 children and adolescents aged between 7 and 19 years, Muris, Schmidt, and Merckelbach (1999) noted that fears clustered in three primary factors. The first factor consisted of animal phobias, the second factor contained blood-injection-injury phobias, whereas the third factor was a combination of natural environment and situational phobias.

Phobias present themselves in three response systems (Lang, 1968). That is, the marked fear and anxiety are typically accompanied by (1) subjective feelings of apprehension (e.g., fear of harm or injury, fear of losing control), (2) physical symptoms (e.g., heart rate acceleration, sweating, increased respiration), and (3) avoidance or escape behavior (e.g., evading the phobic stimulus, running away, staying close to a familiar person). There may be differences in symptom presentation across various subtypes of specific phobias (LeBeau et al., 2010). For instance, although all phobias are accompanied by subjective feelings of fear and anxiety, in some animal and blood-injection-injury phobias, strong feelings of disgust and revulsion are also present (Olatunji & McKay, 2009). In a similar vein, whereas all specific phobias are characterized by cognitions related to fear of harm or injury, there are several phobias, especially situational phobias (e.g., claustrophobia), that involve additional anxiety expectations such as fear of going crazy or fear of losing control (Craske, Mohlman, Yi, Glover, & Valeri, 1995).

Further, confrontation with the phobic stimulus usually elicits sympathetic arousal (tachycardia or increased heart rate) in most phobia subtypes, but in blood-injection-injury phobia, a biphasic physiological response pattern is typically noted (i.e., initial tachycardia followed by a bradycardia or heart rate slowing; Page, 1994).

There may also be differences in the responsiveness of the three systems among phobic youths. In a study by Ollendick, Allen, Benoit, and Cowart (2011), 73 clinically referred children and adolescents with various types of specific phobias provided subjective fear ratings, participated in a behavioral approach test (BAT), and underwent a physiological recording of their heart rate. The results showed that although various indices of fear were significantly correlated with each other, there was also quite some variation with some youths being concordant and others being discordant across the three response systems. Ollendick et al. (2011) found some evidence to suggest that concordant activation of all systems is indicative for the severity of the disorder. Another example of individual differences in fear responses can be found when looking at the behavioral system. Whereas most phobic youths will try to avoid or escape from the stimulus or situation that they fear, there is a subgroup of children expressing their fear or anxiety by crying, tantrums, freezing, or clinging (APA, 2015). Again, it might be the case that these atypical behaviors are mainly found in youths with severe specific phobias, but there may also be a link with age/developmental level, children's temperament, and characteristics of the phobic stimulus or situation (e.g., imminence of threat).

Epidemiology

Anxiety disorders in general are one of the most prevalent types of psychopathology in youths (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003), and among the anxiety disorders specific phobias are most common. Using the data of 14 epidemiological studies that included children and adolescents of various ages, Costello, Egger, and Angold (2004) found a point-prevalence rate

of 3.6% for specific phobias. The National Comorbidity Survey-Replication that was conducted in the United States recently documented a lifetime prevalence rate of 20% among 13- to 17-year-olds (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). Specific phobias of animals such as dogs, spiders, and snakes are quite frequent, and the same is true for phobias of blood, injections, and injuries and environmental phobias of heights and thunderstorms (Benjet, Borges, Stein, Mendez, & Medina-Mora, 2012).

Specific phobias tend to be more prevalent among girls than boys (with a rate of approximately 2:1; APA, 2015) and in older than younger children (e.g., Ollendick, King, & Muris, 2002). Further, in nonclinical samples, specific phobias often occur in isolation without the presence of other comorbid problems. This is different in clinical populations where the majority of the youngsters with specific phobias also meet the diagnostic criteria of other psychiatric disorders. For example, in an older study by Last, Strauss, and Francis (1987), it was found that 64% of the children and adolescents with a primary diagnosis of a specific phobia also presented with one or more additional diagnoses including generalized anxiety disorder, social anxiety disorder, obsessive-compulsive disorder, panic disorder, major depressive disorder, dysthymia, and oppositional defiant disorder.

The results regarding the continuity of childhood specific phobias indicate that this anxiety problem is not always stable over time. For example, in a study by Last, Perrin, Hersen, and Kazdin (1996), it was found that 31% of the children and adolescents with an initial diagnosis of a specific phobia on time 1 no longer fulfilled the diagnostic criteria at a 3- to 4-year follow-up. However, in comparison with other anxiety disorders (such as separation anxiety disorder and social anxiety disorder), this recovery percentage was quite modest, leading the authors to conclude that specific phobias represent one of the most persistent anxiety problems. Recent evidence also showed that specific phobias in young people are a "precursor" disorder predicting the subsequent onset of other types of psychopathology (Lieb et al., 2016).

Etiology

Some scholars assume that specific phobias are inborn, evolutionary prepared responses that protect children against environmental threats. Briefly, this preparedness account assumes that evolution has selected for fear and avoidance of certain stimuli (e.g., snakes, spiders, water, heights) to protect the defenseless young offspring of human beings (Seligman, 1971). Although this theory has attracted a lot of research attention (McNally, 1996), questions remain about its empirical validity. An alternative account for the etiology of specific phobias adopts a developmental psychopathology perspective. In this view, children's phobias are in essence normal developmental fears that due to an interaction of genetic vulnerability and detrimental learning experiences have radicalized into a persistent anxiety problem (Muris, 2007; Muris & Field, 2011; Muris & Merckelbach, 2001; Muris, Merckelbach, De Jong, & Ollendick, 2002). It is important to keep in mind that the origins of specific phobias cannot be explained by a single process. This is illustrated in the next paragraphs of this section in which I will discuss a number of pathogenic factors, including genetic influences, aberrant brain processes, temperament, negative learning experiences, avoidance, and cognitive biases.

Genetic Influences Few behavioral-genetic studies have been conducted to explore the role of heritability in specific phobias of children and adolescents. A notable exception is the investigation by Lichtenstein and Annas (2000) who employed parent report data of specific fears and phobias in 1106 pairs of 8–9-year-old Swedish twins. The results indicated that the total concordance of specific phobia was significantly higher in monozygotic than in dizygotic twins (52% versus 25%), which produced an overall heritability estimate of 65%. Further analysis conducted on the separate phobia types revealed that the genetic contribution was larger in animal (58%) and situational/environmental phobias (50%) than in blood-injection-injury phobias (28%). These results are reasonably in line with what is gener-

ally found in comparable studies conducted in adult populations (Van Houtem et al., 2013) and indicate that specific phobias are at least in part heritable.

Aberrant Brain Processes In recent decades, considerable advancements have been made with the study of brain processes in individuals suffering from specific phobias. This research has mainly been conducted with adults using a symptom provocation procedure. During such a procedure, the phobic individual is exposed to, for example, a picture of fear-relevant stimulus, while a scanner assesses the activation in various areas of the brain. By comparing these data to those obtained for healthy control participants, it is possible to detect aberrations in the brain processing of fear. Typically, this type of studies demonstrate that individuals with a specific phobia show more activation in the brain areas that are involved in the perception and early amplification of fear – including the formation of an autonomic arousal response – such as the amygdala, anterior cingulate cortex, thalamus, and insula. At the same time, brain areas in the prefrontal cortex, which are normally activated in healthy controls to regulate fear, are less activated in individuals with a specific phobia (see for a review Del Casale et al., 2012). Altogether, this suggests that at a structural brain level, individuals with a specific phobia are more easily and more strongly aroused when being confronted with fear-relevant stimuli, while they have less capability to regulate this hyperactivation.

Temperament Behavioral inhibition refers to the habitual tendency of some youths to interrupt ongoing behavior and to react with distress and withdrawal when confronted with unfamiliar stimuli and situations (Kagan, 1994). For children many stimuli and situations are novel, and so it is well-conceivable that those who score high on behavioral inhibition are particularly prone to show more intense fear reactions and to engage in avoidance. An investigation by Biederman, Rosenbaum, Bolduc, Faraone, and Hirshfeld (1991) has indicated that young children with this temperamental disposition indeed

are at higher risk for developing anxiety problems and that this is also true for specific phobias. In this study, a structured clinical interview was used to assess anxiety disorders in two samples of children: an at-risk sample of children of adult patients with panic disorder and agoraphobia and a longitudinal cohort of children who had been followed from a very young age. In both samples, it was found that inhibited children showed significantly more anxiety disorders than the uninhibited children, and the difference was particularly clear-cut for generalized anxiety disorder (in the at-risk sample) and specific phobias (in the longitudinal cohort). Interestingly, when the combined samples were reassessed at a follow-up of 3 years, it was noted that inhibited children displayed a marked increase in specific phobias and other anxiety disorders (Biederman et al., 1993). In another study by Muris, Merckelbach, Wessel, and Van der Ven (1999), adolescents aged 12–14 years were provided with a definition of behavioral inhibition and then asked to identify themselves as low, middle, or high on this temperament characteristic. In addition, the young adolescents completed a standardized questionnaire of anxiety disorder symptoms that included separate scales for the main types of specific phobias (i.e., animal, situational/environmental, blood-injection-injury). The results indicated that children in the high behavioral inhibition group more often reported specific phobia symptoms than did children in the low and middle behavioral inhibition groups. It is good to keep in mind that behavioral inhibition might be the observable manifestation of the genetic/biological liability to specific phobias that has been described in previous paragraphs.

Conditioning and Other Learning Experiences Environmental influences are also thought to play a crucial role in the etiology of specific phobias. In this context, conditioning experiences are particularly relevant. The well-known case study of Little Albert (Watson & Rayner, 1920) nicely demonstrated that it is possible to instill a phobia in a healthy child via classical conditioning. An 11-month-old boy was exposed to a white rat and initially the toddler showed no

fear for this animal. This changed after the experimenters paired the presentation of the rat with an aversive loud noise (the unconditioned stimulus or UCS) that was produced by striking a steel bar hideously behind the boy's back, and which caused him great fright (the unconditioned response or UCR). After five such experiences, Albert became very upset (the conditioned response or CR) by the sight of the white rat, even without the presentation of the loud noise. Obviously, the fear originally associated with the loud noise was now elicited by the previously neutral stimulus, the white rat (now the conditioned stimulus or CS).

There are certainly some children for which their specific phobia can be explained by a distinct aversive conditioning event (Dadds, Davey, & Field, 2001), but in many cases the learning history of a phobia is much more complicated. This is nicely illustrated in a study by Ten Berge, Veerkamp, and Hoogstraten (2002) who explored the treatment history of children with varying levels of dental fear. The results indicated that high and low fearful children did not differ with regard to the number of aversive, curative treatments (potential conditioning events). The most important difference was that low fearful children had experienced more innocuous dental visits before their first curative treatment took place as compared to high fearful children. Apparently, previous neutral experiences with a CS immunize against the impact of an aversive event, a phenomenon that has been labeled as latent inhibition. Further, Ten Berge et al. noted that children's personal emotional reactions to the curative treatment enhanced the aversiveness of the UCS (UCS inflation), which suggests that subjective perceptions of threat play a decisive role during fear conditioning. Both latent inhibition and UCS inflation fit well with the current theoretical perspective that fear conditioning should not be viewed as simple, reflex-like stimulus-response learning but rather as a process during which individuals learn that one stimulus (the CS) is likely to predict the occurrence of another stimulus (the UCS), which in turn will elicit a CR under certain conditions (Field, 2006).

Classical conditioning requires that the person has had direct experience with the CS and the UCS, but fears and phobias can also be learned by observing other people's responses to a stimulus or situation (modeling) or by hearing that a stimulus or situation might be dangerous or has some other negative connotation (negative information transmission; Rachman, 1991). Evidence for these indirect learning pathways mainly comes from experimental laboratory studies. For example, Gerull and Rapee (2002) examined the role of modeling in children's fear acquisition in 15- to 20-month-old toddlers who were confronted with novel rubber toy spiders and snakes. During the experiment, mothers were also present and instructed to display either a positive or a negative facial expression, while their offspring was exposed to the toy animals. The results showed that toddlers whose mothers displayed a negative facial expression were more fearful and more hesitant to approach the toy animals than toddlers whose mothers had exhibited a positive facial expression.

Field, Argyris, and Knowles (2001) were the first to investigate the negative information pathway using a paradigm in which children aged 7–9 years received either negative or positive information about two unknown monster dolls. Results indicated that fear-related beliefs changed as a function of the verbal information: Negative information increased children's self-reported fear, whereas positive information decreased their fear level. Subsequent research has shown that negative information transmission has fear-enhancing effects in all fear modalities (i.e., subjective, physical, behavioral; Muris & Field, 2010) and is also involved in the transfer of fear from parents to offspring (Muris, Van Zwol, Huijding, & Mayer, 2010). However, for both modeling and negative information transmission, it remains to be demonstrated that they are sufficiently powerful to produce clinical levels of phobic symptoms.

Avoidance and Cognitive Biases Behavior therapists assume that avoidance is the key mechanism in the conservation of phobic fear. That is, avoidance serves to minimize direct and prolonged

contact with the phobic stimulus or situation and hence does not allow the phobic person to learn that the CS is in fact harmless. Meanwhile, by evading the phobic stimulus or situation, subjective feelings of fear and physiological arousal decrease, thereby negatively reinforcing the avoidance behavior (Ollendick, Vasey, & King, 2001). Especially in children, parents seem to play an important role in either the continuation or elimination of avoidance behavior of their offspring. For example, Ollendick, Lewis, Cowart, and Davis (2012) found that clinically referred youths with a specific phobia, who had to approach the phobic object in a stepwise manner (i.e., behavioral approach task), were in general less avoidant when one of their parents was present as compared to when they had to conduct the approach task on their own. However, parent characteristics had an impact on children's performance: when their parent was less warm and less involved during the task, children displayed higher levels of avoidance.

Cognitive biases are also thought to be involved in the maintenance of specific phobias. These biases reflect enhanced processing of fear-related information, which fuel the phobic fear over and over again. A nice example is attention bias, which refers to phobic individuals' hypervigilance in the perception of threat cues. Martin, Horder, and Jones (1992) were one of the first to demonstrate that this type of bias is present in phobic youths. Using a modified version of Stroop task, these researchers found that spider fearful children, as compared to non-fearful controls, displayed slower response times when they were asked to color-name spider-related words (e.g., "web") but not when they had to color-name neutral words (e.g., "fly"). Another type of bias that operates in specific phobias is covariation bias, which is concerned with a tendency to overestimate the association between fear- and phobia-related stimuli (CS) and negative outcomes (UCS). In an experiment conducted by Muris, Huijding, Mayer, Den Breejen, and Makkie (2007), first evidence was obtained for the existence of this type of bias in youths. Children and adolescents aged 8–16 years played a computer game during which they were exposed

to pictures of spiders (i.e., negative fear-relevant stimulus), guns (i.e., negative fear-irrelevant stimulus), and flowers (i.e., neutral control stimulus). Following each picture, a smiley was generated by the computer signaling an outcome: a happy smile indicated that the child had won three pieces of candy, and a sad smiley indicated that the child had lost three pieces of candy, whereas a neutral smiley signaled no positive or negative consequences. The pictures were shown in a random order, and the computer game was programmed in such a way that each picture type was equally often followed by a happy, sad, or neutral smiley. After the computer game, children were asked to provide estimates on the observed contingencies between the three picture types and various outcomes. Results indicated that children in general displayed an inclination to link the negative outcome to negatively valenced pictures (i.e., they believed that they had more often lost candy following pictures of spiders and guns). Most importantly, the findings also demonstrated that this covariation bias was modulated by fear. That is, spider fearful youths showed a stronger tendency to specifically associate the spider pictures with a negative outcome (i.e., losing candy).

Treatment

Exposure is generally regarded as the key element in the treatment of specific phobias, and there is sufficient evidence from controlled treatment outcome research indicating that exposure-based treatments are indeed effective in reducing fear and anxiety in phobic children and adolescents. Exposure-based treatment of childhood phobias can be delivered in many ways, and below I will summarize a number of commonly employed variants.

Systematic Desensitization Based on the idea that two emotional states cannot occur simultaneously, Wolpe (1958) developed the treatment approach of “systematic desensitization,” during which fear and anxiety elicited by a phobic stimulus are terminated by a previously learned relax-

ation response. Briefly, Wolpe assumed that a response antagonistic to anxiety (e.g., physiological relaxation) inhibits the emotional fear response. Various studies have demonstrated that systematic desensitization yields positive effects when treating phobic youths, and this is especially true when real-life exposure to the phobic stimulus is used to provoke fear and anxiety during the therapeutic procedure. For example, Ultee, Griffioen, and Schellekens (1982) divided 24 water-phobic children aged between 5 and 10 years in 3 groups: (1) an *in vitro* desensitization group in which children received gradual imaginal exposure to fear-evoking stimuli plus relaxation, (2) an *in vivo* desensitization group in which children were treated with gradual real-life exposure in combination with relaxation, and (3) a no-treatment control group. The results indicated that both desensitization procedures were effective in reducing children’s fear of water, whereas no such effect could be observed in the no-treatment condition. Further, evidence was found showing that *in vivo* exposure yielded better treatment effects than *in vitro* exposure. In spite of the fact that various other studies have documented positive effects of systematic desensitization in the treatment of childhood phobias, this type of intervention seems somewhat outdated. This is because research has demonstrated that Wolpe’s (1958) basic ideas about the underlying mechanism of systematic desensitization are not correct. In fact, there is clear evidence showing that the relaxation component of this treatment is not necessary to achieve the positive effects of the intervention.

Systematic desensitization pairs exposure with relaxation, but it is good to note that for some specific phobias, this type of treatment is less applicable. As noted earlier, blood-injection-injury phobias are typically accompanied by a biphasic physiological response pattern (i.e., initial tachycardia followed by a bradycardia or heart rate slowing), which may result in a fall of blood pressure and ultimately fainting. For these phobias, it appears preferable to combine exposure with muscle tension exercises. This treatment, also known as applied tension, prevents the blood pressure drops and the individual is

capable of maintaining the exposure to blood and other prototypical stimuli (e.g., needles; Öst & Sterner, 1987). In children and adolescents, there is still little evidence for the efficacy of the applied tension technique. A protocol for treating blood-injection-injury phobias in youths (Oar, Farrell, & Ollendick, 2015) prescribes psychoeducation about fainting and the use of simple coping strategies such as lying down, drinking cool water, and wiggling one's toes as ways of dealing with the physiological symptoms of these phobias. Obviously, this intervention might further profit from the inclusion of applied tension exercises.

Emotive Imagery Although the therapeutic procedure of systematic desensitization is less frequently employed nowadays, it is of interest to note that there is an age-downward variant that may still be feasible to apply, in particular when working with younger children. This technique has been described as “emotive imagery” (Lazarus & Abramovitz, 1962). An important feature of the emotive imagery procedure is that the child identifies himself with a “personal hero” (usually a person or cartoon character seen on television) and then makes up a narrative, in which the phobic stimulus is gradually introduced. After the imaginal exposure, during which the child – supported by the personal hero – effectively deals with the phobic stimulus, he/she is encouraged to apply these newly learned skills in real-life situations (King, Molloy, Heyne, Murphy, & Ollendick, 1998). In an attempt to examine the effectiveness of emotive imagery, Cornwall, Spence, and Schotte (1996) assigned 24 clinically referred 7- to 10-year-old children with a severe darkness phobia to either emotive imagery treatment or a waiting-list control condition. The results demonstrated that children in the emotive imagery group showed significant reductions in self-reports of darkness fear and clear improvement on a darkness tolerance test, whereas no such effects were observed in the waiting-list control group.

Participant Modeling As noted in the Etiology section, modeling represents one way through

which children can acquire a fear or phobia. However, modeling can also be exploited therapeutically by asking children to observe a non-fearful person who approaches the phobic stimulus without displaying any fear. This procedure can be conducted in various ways. The first way is filmed modeling, during which the child watches a film in which a model interacts with the phobic stimulus. The second way is live modeling: the phobic child observes a real model interacting and dealing with the phobic stimulus. Finally, during participant modeling, the child and the model work together: the model demonstrates how to approach and deal with the phobic stimulus and then instructs the child to imitate this behavior. There is some research comparing the relative efficacy of these modeling variants. For example, Menzies and Clarke (1993) assigned 3- to 8-year-old children with water phobia to various interventions involving exposure, live modeling, or a combination of these two procedures (which can best be viewed as a variant of participant modeling). Most importantly, this study demonstrated that modeling merely yielded significant treatment effects when combined with exposure exercises. Clearly, this finding can be taken as support for the notion that participant modeling is more effective than live modeling (Ollendick, Davis, & Muris, 2004).

Reinforced Practice During “reinforced practice” (also known as “contingency management”), an attempt is made to weaken the negative associations with the phobic stimulus that result in avoidance behavior by strengthening positive associations through reinforcement of approach behavior. This is achieved via exposure exercises during which successful approaches of the phobic stimulus are reinforced by means of rewards. There is ample evidence supporting the efficacy of reinforced practice in treating phobic children and adolescents. For example, Silverman et al. (1999) treated 33 6- to 16-year-old youths with phobic disorders by means of a reinforced practice program during which children had to perform increasingly difficult exposure tasks that were reinforced by their parents every time they completed a task successfully. Results revealed

that this treatment program was equally effective in reducing fear and anxiety levels as a cognitive-behavioral intervention. Further, it was found that the positive treatment effects of reinforcement practice were largely maintained at a 1-year follow-up. In terms of clinical significant improvement, it was found that more than half of the youths (55%) no longer met the diagnostic criteria of a phobic disorder after the completion of the treatment.

Cognitive Behavioral Therapy (CBT) CBT is an intervention that has been originally developed for children and adolescents with anxiety disorders in general, but that can also be employed in youths with specific phobias (Kendall, 1994). A key element of this treatment is exposure to the feared stimuli and situations, but CBT also incorporates a range of other behavioral and cognitive techniques (including relaxation, positive self-talk, cognitive restructuring, reinforcement, etc.) that may be helpful to reduce fear and anxiety. Although CBT is thought to be particularly appropriate for major anxiety disorders (e.g., social anxiety disorder, separation anxiety disorder, and generalized anxiety disorder; Rapee, Schniering, & Hudson, 2009), this intervention has certainly proven useful in the treatment of children and adolescents with specific phobias (Ollendick & King, 1998).

One-Session Therapy (OST) OST consists of a single, 3-h session of graduated hierarchical exposure in combination with elements of psychoeducation, participant modeling, reinforced practice, skills training, and cognitive restructuring (Öst, 2012). The therapist first provides a rationale for the treatment and identifies the child and therapist as a “team” who are working together to overcome the child’s fear. Treatment is comprised of a series of behavioral “experiments” during which the child is encouraged to approach the feared stimulus while thinking of him- or herself as a “scientist” or “detective” who is testing out phobic cognitions. The therapist acts as a model demonstrating how to handle the fearful situation, kindly encouraging the child to participate in the exercises, and providing rein-

forcement following successful approach behavior. Öst, Svensson, Hellstrom, and Lindwall (2001) tested the effectiveness of one-session therapy in a large sample of children and adolescents ($N = 60$) with various types of specific phobias. For this purpose, youths were randomly assigned to (1) regular one-session therapy, (2) one-session therapy with one of the child’s parents present, or (3) a waiting-list control group. Various outcome measures were used including self-report inventories, independent assessor ratings, a behavioral approach test, and physiological indexes (e.g., blood pressure, heart rate), most of which were obtained at pretreatment, post-treatment, and 1-year follow-up. The results consistently showed that one-session therapy produced significantly better results than the waiting-list control condition. Further, both variants of the one-session therapy did equally well on most outcome measures, indicating that the presence of a parent did neither promote nor hinder the treatment effects. Finally, the treatment effects of OST were maintained at a follow-up of 1 year. Other studies have shown that this type of treatment is also more effective than other psychological interventions (Muris, Merckelbach, Holdrinet, & Sijenaar, 1998; Ollendick et al., 2009), and so the conclusion seems justified that this type of intervention is highly effective for treating phobias in children and adolescents (Davis, Jenkins, & Rudy, 2012).

A final note on treatment concerns the involvement of parents in the intervention of children with specific phobias. The evidence described in the section on the etiology clearly suggests that parents can be involved in the onset and maintenance of specific phobias, and so it seems logical to assume that this family factor also needs to be addressed in the treatment of this anxiety problem. However, up till now, there is little support for this proposition. For instance, a study by Ollendick et al. (2015) compared the efficacy of regular OST (that only focused on the child) with that of a parent-augmented OST in 97 youths aged 6–15 years diagnosed with at least one specific phobia. Both treatment conditions produced similar outcomes, with approximately 50% of the children and adolescents being diagnosis-free

and judged to be much to very much improved. At a 6-month follow-up, the child-only OST was found to be slightly better than the intervention that also involved parents, but the main conclusion was that “parent augmentation of OST produced no appreciable gains in treatment outcomes” (p. 141).

Back to the case of Kim, the 11-year-old girl described in the introduction, after making the classification of a specific phobia – animal type – it was decided to treat the girl with OST. The therapist first explained the basic idea behind the intervention and then together with Kim created a fear hierarchy consisting of dreaded situations with dogs. Treatment started with a small mild-tempered dog (a Bichon Frisé): a series of steps was carried out, beginning with entering the room and standing 3 m from the animal that was caged in a bench and ending with standing next to the dog and petting it. Each step was first modeled by the therapist, who while performing the step carefully described the animal’s benign behavior in an attempt to correct Kim’s dysfunctional thoughts about dogs. Next, the therapist encouraged the girl to conduct the step herself, and if she succeeded in doing so, she received a small reward (i.e., a sticker; at the end of the intervention, these stickers were awarded with a prize, a stuffed toy dog). After a hesitating start, Kim successfully completed the full hierarchy with the small dog within 1 h. Following this, a larger dog (a golden retriever) was introduced and again the full fear hierarchy was conducted. It took Kim 45 min to carry out all the steps. During the final part of the OST, Kim did some additional exercises with the purpose of generalize the newly acquired skills with dogs to other more “natural” situations, for example, entering a room with an unleashed dog, walking the dog, staying calm when the dog starts barking, and demonstrating her father and mother how she played with the dog. Within one 3-h session, Kim was capable of “handling” both animals. Three months later, a telephone call revealed that the girl’s phobic complaints were still largely in remission: she dared to go alone outside on the street and did not panic when she was unexpectedly confronted with dogs. Following the

therapist’s instructions, her parents encouraged her to approach the animals, which she occasionally (but not always) did.

Conclusion

Specific phobias comprise a class of anxiety disorders that frequently occur in children and adolescents. This psychiatric condition is characterized by marked fear of a specific stimulus or situation, which are typically linked to a number of select categories (i.e., animal, blood-injection-injury, situational, environmental, and other). The fear manifests itself in three response systems (i.e., subjective/cognitive, physiological, and behavioral) and is excessive and unreasonable, thereby hindering the young person’s daily functioning. Specific phobias tend to have a multi-facet origin, involving various genetic/biological, temperamental, and environmental risk and vulnerability factors, and are maintained by avoidance and various types of cognitive biases. The effective treatment is straightforward and usually involves some kind of exposure to the feared stimulus or situation, preferably in vivo. In this way, young people like Kim can be successfully rescued from their phobic fear, ultimately raising their chances to have a normal life and a more healthy development toward adulthood.

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