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CAN CHILDREN DISTINGUISH BETWEEN THOUGHTS AND BEHAVIOURS?

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Abstract. The extent to which cognitive behaviour therapy can be used with children is unclear. In meta analyses older children and teenagers seem to derive greater benefit than young children. This may be because the cognitive immaturity of young children means that they cannot manage the *cognitive* demands of cognitive behaviour therapy. This paper seeks to establish how well children aged 7–8 and aged 10–11 can complete a task requiring them to distinguish between thoughts and behaviours (based on Greenberger & Padesky, 1995). Half of the children were provided with a visual cue and half were not. The effects of age, the visual cue, and verbal IQ on performance were examined. Seventy-two children were randomized to the cue and no-cue condition and individually tested during school time. Both age groups performed well and there was a significant difference between older and younger children, with the older children performing better. Visual cues did not aid performance. Verbal IQ was significantly associated with performance in the younger but not the older children. The implications of these results for the delivery of cognitive behaviour therapy with children and future research are discussed.

Keywords: Children, thoughts, behaviours, cognitive, development.

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Introduction

The development of health services for children frequently relies upon the top-down application of methods and interventions developed in relation to adult problems. Thus, the treatment of mental health problems in children is currently being strongly influenced by the success of cognitive behaviour therapy (CBT) in the treatment of serious and enduring adult mental health problems. CBT is currently being applied to many childhood problems including externalizing problems (e.g. Bennett & Gibbons, 2001) and internalizing problems (e.g. Barrett, Duffy, Dadds, & Rapee, 2001).

There are a number of conceptual and practical issues that deserve wider discussion in the application of CBT with children. Conceptually, it is not clear exactly what cognitive behaviour therapy with children consists of (Stallard, 2002). There is a lack of clarity about distinctions between behavioural interventions, cognitive behavioural interventions, and specific *cognitive* interventions. Thus, for example, CBT for childhood anxiety typically relies heavily on education and behavioural exposure. The Coping Cat Workbook (Kendall, 1990) includes coping self-instruction, relaxation training, self-reinforcement, modelling, role playing and social reinforcement. CBT for obsessive compulsive disorder (OCD) in children as described by March (1995) is predominantly behavioural and combines exposure and response prevention, together with education about OCD and self-instruction training that encourages the child to externalize the symptoms of OCD and to ''fight back'' against them. A recent review of the literature (BPS, 2002) concluded that for children under 11 with specific phobias, *in vivo* exposure is particularly beneficial. The mechanisms of change with children may therefore be behavioural rather than cognitive elements of CBT. Thus it is important to establish the relative contribution of cognitive and behavioural aspects of therapy with children, and to determine if CBT with children can incorporate cognitive elements (i.e. become truly CBT) or if it is largely an extension of behaviour therapy (i.e. cBT) (Stallard, 2002).

Related to this point, a second unresolved issue about using cognitive therapy for children is the extent to which children are able to engage in and benefit from the *cognitive* components of CBT. These include being able to distinguish between thoughts, feelings and behaviours, to make connections between thoughts and feelings and behaviours, and to identify thoughts, evaluate them and then challenge them (Greenberger & Padesky, 1995; Hawton, Salkovskis, Kirk, & Clark, 1999). Traditional Piagetian theories of cognitive development suggest that children in the pre-operational (2–7 years) and concrete operational (7–11 years) stages of cognitive development have not developed abstract reasoning skills and therefore could not engage in cognitive components of CBT e.g. identifying thoughts and making connections between thoughts, feelings and behaviours.

Recent research in developmental psychology suggests that from 8 years children can engage in abstract thinking about thinking. For example, Flavell, Green and Flavell (2000) demonstrated that 5-year-olds, 8-year-olds and adults were able to report specific contents of their thoughts when instructed to think of something they liked to do. However, when asked not to have any thoughts at all for 20–25 seconds, the majority of 8-year-old children and adults reported ongoing thoughts whereas the majority of 5-year-olds did not. Flavell et al. suggested that these results demonstrate that younger children's awareness of their thoughts was less sophisticated than older children and adults. Favell, Green, Flavell and Grossman (1997) demonstrated that by 6–7 years children could recognize their own inner speech and Flavell, Green

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and Flavell, (1999) reported that by 10 years they appreciated that some thoughts were difficult to control. Finally, Flavell, Flavell and Green (2001) reported that 8-year-olds and adults could link thoughts to feelings but that 5-year-old children could not.

Within the clinical literature there has been discussion about how cognitive techniques may be adapted for use with children (e.g. Friedburg & McClure, 2002; Piacentini & Bergman, 2001; Verduyn, 2000). Ronen (1997) argued that using concrete rather than abstract language, common metaphors and practical examples from the child's daily life help younger children engage with and understand cognitive concepts. Kendall (1990) and Young and Brown (1996) have suggested that the use of cartoons and thought bubbles can help children understand differences between thoughts and feelings and between thoughts and behaviours. In a practical guide to using cognitive therapy with children Friedberg and McClure (2002) describe a range of techniques to adapt cognitive therapy for children, including ways in which children can be helped to distinguish between, and understand the links between, thoughts, feelings and behaviours. They demonstrate the use of cartoons and thought bubbles, and argue that with age appropriate cues, children can successfully engage in *cognitive* therapy. A contrasting view is expressed by Reinecke, Dattilio and Freeman (1996) who suggest that

> School age children, for example, typically are unable to readily identify their current thoughts or to discriminate and label specific emotional states. (p. 5).

Despite the definitional and conceptual problems surrounding the use of CBT with children there have been randomized controlled trials of CBT with children and adolescents. These suggest that children and adolescents can benefit from CBT for depression (e.g. Harrington, Whittaker, & Shoebridge, 1998) and anxiety (e.g. Kendall et al., 1997; Spence, Donovan, & Brechman-Tousiainnt, 2000). However, the evidence that CBT (as distinct from behaviour therapy) is effective with young children (i.e. those under 11) is less strong. The results of several meta-analyses indicate that older children benefit more than younger children from CBT. For example, Durlak, Fuhrman and Lampman (1991) reported that the effect size for children aged 11–13 was almost twice that for younger children. Similarly, in a meta-analysis of 48 studies, Dush, Hirt and Schroeder (1989) found that effect sizes were strongly associated with age. For 5–7-year-olds the effect size was 0.25, whereas for 8–10-year-olds it was 0.39 and for 11–13-year-olds it was 0.61, suggesting that older children were benefiting more from this approach than younger children. More recently, Bennett and Gibbons (2001) reported that CBT for anti-social behaviour in children had small to moderate effect sizes and that effect sizes were smaller in methodologically strong studies and with younger children.

The development of CBT for use with children is still in its early stages and much is unknown about what children can and cannot do in CBT. The aim of the current research study is to establish if children aged 7–8 and 10–11 can complete a specific task that is used in CBT with adults. The task chosen was taken from *Mind over mood* (Greenberger & Padesky, 1995), which requires adults to distinguish a list of phrases and sentences as either thoughts, moods or situations. The task was simplified for children by including only two variables, thoughts and behaviours. Children of two ages were compared in order to assess developmental changes. In addition, in order to examine the impact of using a visual cue, as suggested by Kendall (1990) and Young and Brown (1996), children were examined under one of two randomly selected conditions: with and without visual cues. Finally,

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because some authors have suggested that cognitive abilities may be significantly associated with intelligence we examined the association between verbal IQ and performance.

The study examined a number of hypotheses: (i) that older children would perform better than younger children; (ii) that visual cues would enhance performance and that this effect would be stronger for younger children; and (iii) that IQ would be associated with performance.

Method

Design

This was a cross-sectional design comparing two groups of children (aged 7–8 and 10–11 years) under two experimental conditions (with and without visual cues). Children within each age group were randomly allocated to the visual cue or no cue conditions.

Participants

Seventy-two children from four schools took part. Two schools were First Schools (i.e. with children aged 4 to 8 years) and two schools were Middle Schools (i.e. with children aged 8 to 12 years). Schools were matched for socio-economic status and geographic location using a local atlas of health needs (Haynes & Gale, 1997). Thirty-one of the children were 7 or 8 years old (from Year 3), of whom 15 were girls and 16 were boys. Forty-one children were 10 and 11 years old (from Year 7), of whom 22 were girls and 19 were boys. The mean age of the two groups of children was 7.8 and 10.9 years.

Materials

Behaviour and thought discrimination task. Twenty behaviour and twenty thought statements were typed onto cards. The statements were based on stimuli and activity tasks presented in Greenberger and Padesky (1995) in order to maximize ecological validity of the cognitive task. Statements were selected after discussions with teachers and parents, after consulting children's literature, and after a process of piloting. Half of the statements (thoughts and behaviours) related to the self and half were general. The thought statement cards included negative thoughts, positive thoughts or neutral thoughts. Examples of the statements are shown in Appendix 1. The maximum score that any child could achieve on the task was 40, i.e. all statements sorted correctly. A score of 20 could be obtained by chance. The binomial test for $N < 40$ (Siegal, 1956) indicates that a score of 30 or more (i.e. 10 errors) is highly significant, $z = 3.01$, $p > .001$. The cut-off of 30 correct answers was therefore taken as evidence that a child could reliably discriminate between thoughts and behaviours.

Visual and non-visual cues. In the non-visual cue condition the child was asked to read each card and place it below one of two labels: Thinking sentences, or Doing sentences. No other cues were provided. In the visual cue condition, the Thinking sentences label had a picture of a stick man with an empty thought bubble (see Appendix) and the Doing sentences label had a picture of a female action doll.

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Table 1. Thought-behaviour discrimination task scores

Age	Condition	Mean	*SD*	*N*
7–8 years	Cue	33.8	6.2	16
	No cue	35.5	3.8	15
	Total	34.6	5.2	31
10–11 years	Cue	39.0	2.2	21
	No cue	38.5	2.0	20
	Total	38.7	2.1	41
All groups	Cue	36.7	5.1	37
	No cue	37.2	3.2	35

Similarities sub-test of the Wechsler Intelligence Scale for Children III UK (Wechsler, 1992). The similarities sub-test of the WISC III UK contains 19 items and was used to assess verbal intelligence. Validity data from the WISC IIIR show that similarities is highly correlated with full scale IQ and with verbal IQ for children aged 6/7 and aged 8 to 10 years (Wechsler, 1992). One sub-test was used in order to minimize the demands on each child and to provide an estimate of each child's verbal IQ.

Procedure

Written consent was obtained from the children's parents and from their head teachers before they were asked to take part in the study. The names of all children for whom parental consent had been given were then randomly selected by their class teachers by drawing their names from a bag. The children were then randomized into the visual cue and non-visual cue groups. In addition, the order of presenting the similarities sub-test and the thought and behaviour statements was randomized.

Testing took place in school, individually in a side room. Children were told that it was not a test. A demonstration of a thinking sentence and a doing sentence were given to the child and they completed an example item. Discontinuation criteria were if the child showed any distress or if they took more than 45 seconds to respond on 5 consecutive items. It was not necessary to discontinue at any point. The task took approximately 20 minutes for each child and at the end the child was thanked, a brief explanation of the task was given, and they were taken back to their classroom.

Results

Mean scores on the behaviour and thought discrimination task are shown in Table 1. The mean score for both age groups was over 30, which was the cut-off score indicating that the child could reliably discriminate between thoughts and behaviours. In the 10–11 year group all the children scored 30 or over on the task and 15 (37%) scored 40, the maximum. In the 7–8-year-old group, 25 of the 31 (81%) children scored 30 or over on the task, and 5 (16%) scored the maximum. Thus, the majority of children, at both ages, were able to perform the task successfully i.e. scored over 30 correct answers. In addition, a minority of children, at both ages, performed at ceiling. Table 1 also suggests that the use of visual cues had a minimal effect.

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Because the distribution of scores in both groups was highly skewed, non-parametric tests were used. Differences between ages and between the cued and non-cued conditions were examined using Mann-Whitney U tests and associations between IQ and test performance were examined using Spearman Rank correlations. There was a highly significant difference in the mean ranks of 7–8-year-old and 10–11-year-old children, $z = 4.73$, $p < .001$. The hypothesis that older children would perform better than younger children was therefore supported. There was no effect of cue on performance, $z = .85$, $p > .40$. Within each age group the effects of visual cues was also non-significant; for 7–8-year-olds $z = .119$, $p > .90$, for 10/11-year-olds $z = -1.26$, $p > .20$. The hypothesis that visual cues would aid performance on the task was therefore not supported.

The third hypothesis, i.e. that performance on the task would be associated with verbal IQ, was tested by correlating scores on the similarities sub-test of the WISC with scores on the thought-behaviour discrimination task. The mean scaled score on the similarities sub-test was 9.1 ($SD = 3.2$), similar to the expected population mean. Overall, there was a significant correlation between age and verbal IQ, rho = .36, $p < .01$, indicating that children with higher verbal ability were more able to discriminate between statements about thoughts and statements about behaviours. Within the age bands, there was a non-significant correlation between task performance and verbal IQ for the 10–11-year-olds, rho = .28, $p < .08$, and a significant correlation between task performance and verbal IQ for the 7–8-year-olds, rho = .36, $p < .04$.

Finally, a post-hoc analysis of gender was performed. A Mann-Whitney U test indicated that there was no difference in the mean ranks of boys and girls, $z = -1.27$, $p > .20$.

Discussion

Most children aged 7 years and older were able to distinguish between thoughts and behaviours. The results of this study indicate that, as hypothesized, 10–11-year-old children were more able to correctly discriminate between thoughts and behaviour than 7–8-year-old children. What was of interest, however, was that both groups of children performed the task to a high standard. Unexpectedly, visual cues did not aid performance for older or younger children. Verbal IQ (as indicated by the Similarities sub-test of the WISC III R) was significantly associated with performance for the younger children only.

The clinical implications of these results are of interest in that they demonstrate that the majority of children who, according to Piaget, are in the concrete operational stage of cognitive development, can distinguish accurately between statements about thoughts and statements about behaviours. At age 7 the majority of children performed the task successfully, and by age 10 all of the children succeeded at the task and there was evidence of a ceiling effect. Visual cues were not helpful to either of the age groups. This may have been due to the relatively strong performance of both age groups, suggesting that the task was too easy for the cues to be helpful. However, despite the good performance overall, at both ages only a minority of children scored at the maximum and thus there was room for improvement at both ages. An alternative explanation is that the cues were not sufficiently helpful to the children and that these need further development.

The results of this study are consistent with research from child development suggesting that children's knowledge about thinking begins to develop by age 8 (e.g. Flavell et al., 1997, 1999, 2001). This study, however, is the first we have been able to identify that

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assesses children's normal cognitive development in relation to specific cognitive tasks of CBT. We selected a very specific task rather than a sample of different cognitive abilities that might be required in cognitive therapy. Thus, this study does not demonstrate that young children can engage successfully in CBT but demonstrates general proficiency at one specific task. The task had good ecological validity in relation to cognitive behaviour therapy and was adapted for children from an adult cognitive therapy skills manual.

There is an urgent need for research on the cognitive development of children to be better meshed with the clinical literature relating to the use of cognitive behaviour therapy with children. To date the two literatures have been kept separate. The developmental psychology literature has been seeking to determine children's cognitive abilities and to develop methods of enabling children to perform tasks that have usually been thought to be beyond their level of maturity. Similarly, clinicians report that young children can use cognitive therapy techniques when these are adapted for them, although the results of meta-analyses suggest that this approach may be optimistic.

This field of research is wide open for collaboration between child cognitive therapists and child development researchers and there are some important tasks to be undertaken. For example, although the kind of skills required to participate successfully in cognitive behaviour therapy are outlined in treatment manuals, there has been no formal evaluation of which skills are essential and which are desirable. Thus we do not know what skills children or other potential clients must possess in order to benefit from cognitive behaviour therapy, and we do not know how best to assess these skills in potential clients. Second, we do not know what normally developing children can do cognitively, or how well they can actively manage their cognitive processes. Thus, whilst they may understand that thoughts and behaviours are different, and may be able to categorize thoughts and behaviours accurately, it is not clear that they would be able to monitor or manipulate their own thoughts and behaviours, as would be required in *cognitive* behaviour therapy. These meta-cognitive skills so far are poorly understood. In addition, it will be important to determine if clinically referred children develop cognitive skills and abilities at the same rate as their non-referred peers. It is conceivable that differences in cognitive and meta-cognitive abilities may be associated with emotional difficulties, or even that problems in meta-cognition may be an aetiological factor in mental health problems (e.g. Cartwright-Hatton & Wells, 1997). A third area for research concerns the adaptation of cognitive behaviour therapy for different populations who may have restricted verbal skills, limited intellectual capacity, or reduced cognitive flexibility (e.g. Dagnan, Chadwick, & Proudlove, 2000). Creative adaptations by clinicians include using concrete and simpler cognitive techniques, or may include training individual clients in the basic cognitive skills required to engage with therapy. The extent to which these adaptations or additional training are helpful in overcoming initial deficits has also not yet been established. In addition, CBT with pre-adolescent children typically includes significant parental involvement and the involvement of parents may be an important predictor of outcome (Silverman et al., 1999) especially for younger children (Barrett, Dadds, & Rapee, 1996). Thus, CBT with children may require development beyond the simple adaptation of adult CBT so that developmental and family issues are integrated into models and theories.

The clinical demands to work with younger children within a cognitive therapy framework seem likely to increase as child mental health problems become more widely identified. Some cognitive behavioural interventions have been developed for use with parents and in the areas of conduct and anxiety disorders these have been very well evaluated. There is

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likely to remain a need, however, to include children themselves in many interventions and this will be most successfully managed if therapists have a realistic and accurate appraisal of the likely cognitive development of their young clients. Child development research seems likely to provide some insights into the possible cognitive skills of young children at different ages but this research needs to be better linked with clinical research, and there is an urgent need for this research to be better disseminated to the clinical audience.

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Appendix 1. Sample items from task

Thought and behaviour statement cards

Sample thought statements

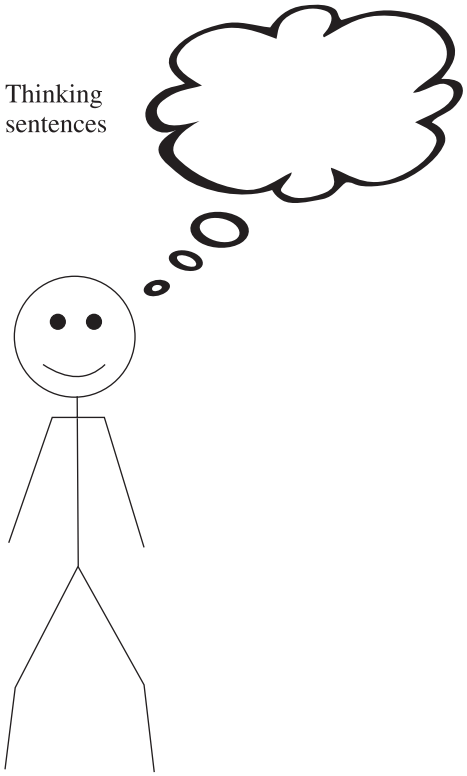
I might get told off
People will laugh at me
My teacher is nice to me
I wonder what is for tea
Most children are friendly
Fireworks are scary
Cars can be different colours
The pet shop might have some kittens
It could be sunny tomorrow

Sample behaviour statements

Riding my bike
Walking to school
Riding a horse
Feeding the cat
Running in the playground
Eating fish and chips
Going to the library
Swimming in the sea

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Appendix 2. Thought bubble picture for the visual cue group



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