SPECIAL EDUCATORS' UNDERSTANDING OF CHALLENGING BEHAVIOURS IN CHILDREN WITH LEARNING DISABILITIES: SENSITIVITY TO INFORMATION ABOUT BEHAVIOURAL FUNCTION

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Abstract. Social psychological models of reasoned action, and behavioural models of verbal behaviour, predict that caregiver beliefs and attributions partially determine their responses to challenging behaviours. The present study examined the relationship between special educators' causal attributions and the underlying function of challenging behaviours in children with learning disabilities. Sixty special school staff were presented with two questionnaire vignettes describing attention seeking and task avoidance behaviour. They were then asked to identify the likely causes of the behaviours. Only a small proportion of participants made accurate causal attributions about the two examples of challenging behaviour. In addition, staff experience had little effect on the accuracy of attributions. Implications for future research, for staff training, and analysis of challenging behaviours are discussed.

Keywords: Learning disabilities, challenging behaviour, functional analysis, special education.

Introduction

There has been growing interest in the beliefs that staff hold about challenging behaviours of people with learning disabilities such as self-injury and aggression towards others (Hastings, 1997). Research has developed from two perspectives. First, the effectiveness of staff training in the management of challenging behaviours has begun to be evaluated by incorporating measurements of staff causal attributions for these behaviours and their beliefs about appropriate interventions (Berryman, Evans, & Kalbag, 1994). Second, researchers concerned with the development of frameworks for

understanding staff performance have identified staff beliefs as a significant factor in determining their interactions with people who engage in challenging behaviours (e.g., Hastings & Remington, 1994; Hastings, Remington, & Hatton, 1995).

This interest in staff beliefs about challenging behaviours originates, either explicitly or implicitly, from an expectation that staff beliefs and behaviour are strongly related. Behavioural and social cognition models can be invoked to support such an expectation (Emerson, Hastings, & McGill, 1994). Social psychologists have long been concerned with the relationship between beliefs or attitudes and behaviour. After early research, several reviews concluded that the link between beliefs and behaviour was very weak (e.g., Ajzen & Fishbein, 1977). More recently developed theories have suggested that beliefs are reasonably good predictors of behaviour in combination with other factors. For example, the Theory of Reasoned Action suggests that the best predictor of behaviour is a person's intention to behave in a certain way (Fishbein, 1979). This behavioural intention is derived from the relative influence of a person's own beliefs and the beliefs of salient others (the Subjective Norm). A recent extension to this theory, the Theory of Planned Behaviour, has incorporated perceptions of behavioural control as an additional component that leads to enhanced predictions of behavioural intentions and behaviour (e.g., Madden, Ellen, & Ajzen, 1992).

From a behavioural perspective, beliefs can be interpreted as rules that staff may or may not follow in their daily interventions with challenging behaviours (Hastings & Remington, 1994). As with much human behaviour, staff behaviour is likely to be rule-governed on the majority of occasions. The rules being followed may be self-rules of the person concerned, rules from other staff, or rules from consultants advising on the treatment of people with challenging behaviours. Research has not yet addressed under which circumstances staff self-rules exert their greatest effect, but it is likely that they are most influential when other potential rule-givers are not present (cf. Hastings & Remington, 1994).

Therefore, individual staff beliefs about challenging behaviours are likely to be significant factors in understanding the manner in which staff respond to challenging behaviours. Furthermore, both of the theoretical perspectives outlined above also highlight the potential influence of the beliefs of other staff in the care environment. Thus, research designed to elicit staff beliefs about challenging behaviours has an important role to play in intervention with challenging behaviours. Ultimately, researchers will need to relate staff beliefs about challenging behaviours to their behaviour in care environments in order to clarify the significance of staff beliefs. However, before such an exercise can begin in an appropriately focused manner, relevant hypotheses need to be generated. Self-report methods are an ideal, flexible tool with which to address this process of hypothesis development.

The present study focuses on staff attributions about challenging behaviours. This is for three main reasons. First, of all dimensions of staff beliefs about challenging behaviours causal attributions have been the most studied to date (Hastings, 1997). Second, causal models are a central part of training for staff working with challenging behaviour. Third, in terms of the main questions posed by this study, it is more straightforward to assess the appropriateness or accuracy of staff attributions about a challenging behaviour than it is to assess the appropriateness of their beliefs about interventions. Staff reports of their intervention beliefs could be assessed in terms of

the likely short and/or long term effects of suggested interventions, and it is difficult to distinguish between inappropriate suggestions for intervention that would have no effect on challenging behaviours and those that may actually have some positive effect.

Research concerned with staff attributions has drawn upon a range of different methods. First, Bromley and Emerson (1995) asked 70 staff working with adults and children with learning disabilities to fill out a questionnaire asking why they thought an individual known to them engaged in challenging behaviour. Staff written responses were grouped into 11 categories of which the 5 most frequently used were: internal psychological state or mood (41% of staff), past environment (such as institutionalization – 26%), current environment (such as reaction to change – 26%), self-stimulation (24%), and a form of communication or control of others (23%).

Second, Hastings (1995) interviewed 19 staff caring for adults with severe learning disabilities and challenging behaviours and asked them why their charges engaged in such behaviour. Content analysis of the interview transcripts revealed that the most frequently cited causal attributions were: social reinforcement (79% of staff), communication/expression (68%), physical environment (such as crowded living conditions – 58%), and emotional states (58%).

Third, Berryman et al. (1994) asked 83 staff about the causes of challenging behaviour of fictitious people described in questionnaire vignettes. The most frequently described attributions in this study were: social reinforcement (average 90% of staff), emotions (74%), task/environment (53%), communication (35%), medical/pain (44%), and intrinsic reinforcement (37%). After attending a "traditional" behaviour management training course, staff were significantly more likely to identify intrinsic reinforcement as a cause and less likely to identify low self-esteem as a cause. In contrast, staff who attended a workshop on "nonaversive" techniques were significantly less likely to mention emotions and low self-esteem and more likely to attribute cause to tangible reinforcement and escape/avoidance.

Fourth, Hastings, Remington and Hopper (1995) used vignettes describing fictitious people with learning disabilities who engaged in either self-injurious, aggressive, or stereotypic behaviour. One hundred and forty-eight health care workers who worked with people with learning disabilities and challenging behaviours in a large institution were asked to rate the likely causes of the behaviour described in one of the vignettes on 25 seven-point items. These items were derived from attributions made by staff in an earlier interview study (Hastings, 1995), and other causal hypotheses found in the research literature. The derivation of final attribution categories in this study was achieved using factor analytic procedures. This produced similar results to the other three studies. Staff attributions were best described by a seven factor structure: client needs (e.g., "he wants something", "he is trying to communicate something"), stimulation, personal and environmental factors (a mixed factor), social factors, biological factors, environmental elicitation (e.g., noise, overcrowding), and natural factors (i.e., "a natural thing to do").

Finally, Oliver, Hall, Hales and Head (1996) have developed a questionnaire to measure staff attributions about self-injurious behaviour: the Self-Injury Behavioural Understanding Questionnaire (SIBUQ). The SIBUQ consists of self-injury scenarios designed to contain information about the behaviour's likely function. Respondents

are asked to choose between four causal hypotheses for each scenario. These hypotheses are: a "correct" behavioural hypothesis (reflecting the function described in the scenario), a behavioural hypothesis that is "incorrect", a hypothesis relating to internal organic causes, and a hypothesis relating to emotional processes. Ninety-nine staff participated in an initial study. This group selected the correct behavioural hypothesis for approximately 55% of the scenarios, the incorrect behavioural hypothesis for 20% of scenarios, internal emotional processes for a further 20%, and internal organic causes for the remainder.

At the general level of measurement used in studies to date, staff causal attributions about challenging behaviours appear to reflect, to a reasonable extent, models of these behaviours found in the research literature. Of course, what constitutes a correct (or "reasonable") causal attribution depends on the behaviour's function (cf. Repp, Felce, & Barton, 1988) and not on its topography or other characteristics. Apart from the analysis in Oliver et al. (1996) described above, existing research has not investigated whether staff are sensitive to information about a behaviour's function when making attributions. However, the Oliver et al. (1996) analysis does not distinguish between positive and negative reinforcement processes. The first purpose of the present study is to test the sensitivity of staff to this kind of information. The second main aim is to extend the scope of research in this area by obtaining the beliefs of staff working in educational contexts with children with learning disabilities. Finally, previous research has suggested that staff experience and training may have an impact on their causal attributions (e.g., Berryman et al., 1994). Specifically, those with more "experience" are more likely to make attributions similar to those that may be derived from models in the theoretical and intervention literature.

Method

Participants

Sixty teachers and teaching assistants working in 13 different schools for children with learning disabilities in two southern English counties participated in the study. Two of the participants were male, 22 were teachers who had been specially trained to work with children with learning disabilities, and the remaining 38 were classroom assistants who did not have formal qualifications in education or special education. The mean number of pupils in the schools was 62 (range 32–113), and the mean class size in which the participants were working was nine children (range 5–17). Twenty-three staff were working in classrooms where the children were age 11 years or below, 28 in classrooms where the children were over 11 years of age, and 6 in classrooms catering for children with ages spanning these two categories. The sample mean for cumulative experience of working with children with learning disabilities was 10.5 years ($SD = 6.30$), and for cumulative experience of working with children who engaged in challenging behaviours was 9.9 years ($SD = 6.64$).

Questionnaire

The questionnaire that staff were asked to complete consisted of three main sections. Each of the first two sections began with a vignette describing a fictitious child's challenging behaviour. These were designed to contain information about the function of

the child's challenging behaviour. The vignettes were read by three educational psychologists and one research psychologist experienced in the field of learning disabilities. All agreed that the vignettes depicted a child whose behaviour was likely to be serving the function of task avoidance (for the first vignette), and attention seeking (for the second vignette). The vignettes are reproduced below:

Task avoidance vignette (TA). Billy, a 10 year old boy with no verbal communication skills, is just starting to trace over his name with a pencil with the assistance of his teacher. As usual, he stops, throws away the pencil and signs "finished" in Makaton (sign language). The teacher picks up the pencil, hands it back to Billy and asks him to try again. Billy starts to push at the teacher and closes his fist to prevent the pencil being put in his hand. Billy then starts to bite his hand and bang his forehead very hard on the table. Finally, the teacher tells Billy that he can leave the writing for today and gives him a jigsaw puzzle which he starts to do.

Attention seeking vignette (AS). Twelve year old Simon calls the teacher to look at his work every few minutes. When the teacher does not respond Simon goes over to her and pulls at her clothes trying to move her towards him. If the teacher helps another pupil, Simon becomes more agitated, starting to wail. Finally, the teacher goes to talk to Simon and he calms down.

In each of the first two sections of the questionnaire, the vignette was followed by a question requiring a written response from participants. Staff were asked to write down what they thought were the causes of the described challenging behaviour ("What might be some of the reasons for this behaviour?"). The final part of the questionnaire requested information about demographic and work-related variables (see Participants).

Staff attributions were elicited by open-ended questions. An alternative approach would have been to provide a range of possibilities for staff to rate or select from (cf. Oliver et al., 1996). This approach was not adopted for two main reasons. First, there were no published data available on special education staff beliefs and it was unclear how education workers' beliefs would compare with staff in other contexts. Second, with a range of responses to choose from staff could simply select the options that they felt would be most acceptable to the research team. Asking staff to respond using their own words will hopefully have reduced the effects of such a bias. Finally, staff were not asked to simply identify *one* causal hypothesis. This served to increase the chance that they were able to display the highest level of their understanding.

Procedure

Questionnaires were mailed to each of the schools participating in the study and distributed randomly to staff in the school by the headteacher. Completed questionnaires were collected by the headteacher and either mailed or hand delivered to the first author. Participants remained anonymous to the research team. Sixty-four questionnaires were delivered, of which 60 were returned fully completed.

Table 1. Accuracy of staff attributions about challenging behaviours

Code	Task avoidance vignette		Attention seeking vignette	
	Number of staff	%	Number of staff	%
Incorrect	13	21.7	15	25.0
Partially correct	26	43.3	40	66.7
Correct	21	35.0	5	8.3

Coding of data

Staff causal attributions were analysed by coding their relationship to the functions of the behaviour described in the vignettes. This was achieved by using codes ranging from "correct" (representing a clear statement of the relevant behavioural hypothesis), through "partially correct" (including some aspects of the behavioural hypothesis), to "incorrect" (a causal hypothesis unrelated to the behavioural function described, or a second-order hypothesis). The coding frames used can be found in the Appendix.

Reliability

All of the questionnaires were coded by a person unconnected with the research in order to estimate the reliability of the coding. A standard equation for calculating a percentage agreement index was used:

$$\left(\frac{agreements}{agreements + disagreements} \right) \times 100\%$$

Overall, percentage agreement using this formula led to the following reliability estimates for responses to each of the vignettes: Task avoidance coding, 87%; Attention seeking coding, 95%. An agreement was noted only when the two coders assigned the same code to a response. Coding disagreements were resolved by discussion. These agreed codes were subsequently used in the analysis.

Agreement can also be represented at the level of the individual codes (i.e., across vignettes). On the occasions when the code "Incorrect" was used by either by the coders, they agreed on this code 78% of the time. These figures for the "Partially Correct" and "Correct" codes were 90% and 75% respectively.

Results

In order to test whether or not special education staff were sensitive to behavioural function, the proportion of participants who identified a correct causal hypothesis was calculated for each of the two vignettes (see Table 1). Only one third of staff made causal attributions that identified the function of the behaviour in the task avoidance vignette, and less than 10% correctly identified the function of the behaviour in the attention seeking vignette.

Those staff who made correct or partially correct attributions for one vignette were no more or less likely to make correct or partially correct attributions for the other

(Kendall's $r(60) = .08$, $p > .05$). Although there was no association between being correct about the causes of the behaviour in the two vignettes, there may have been an interaction between behavioural function and other relevant variables. In particular, different patterns of attribution may be related to aspects of staff experience. Those with more experience of challenging behaviour would be expected to make more accurate attributions, and this may be more or less true in relation to certain behavioural functions. This possibility was explored in further analyses.

A number of measures of staff experience were available in the present study: cumulative experience working with children with learning disabilities, cumulative experience working with children with challenging behaviours, and whether or not staff held a teaching qualification. Associations between the first two measures and staff attributions were investigated using non-parametric correlations. The accuracy of staff attributions was assumed to be coded on a 3-point ordinal scale (0 = incorrect, 1 = partially correct, 2 = correct). Non-parametric correlation was chosen despite the fact that the cumulative experience variables were interval in nature. This was in keeping with standard practice: using the correlation statistic appropriate for the lowest level of data analysed. Kendall correlation coefficients were used rather than Spearman's rho due to the likelihood of a relatively high number of tied scores.

There were no associations between these experience variables and the accuracy of respondents' attributions that reached statistical significance at an alpha level of .05. Differences between staff who held (teachers) or did not hold (classroom assistants) a teaching qualification were investigated using Mann-Whitney U tests. As qualified teachers were expected to make more accurate attributions, these tests were one-tailed. Although there was no difference for the task avoidance vignette ($U(22, 38) = 396$, $p = $ ns), teachers made more accurate attributions than classroom assistants for the attention seeking vignette ($U(22, 38) = 328$, $p < .05$).

Discussion

The results from this study of staff working with children with learning disabilities in education settings suggest that few staff are able to identify accurately the causes of challenging behaviours. More staff appeared to be able to make accurate attributions when behaviour was maintained by negative reinforcement processes than when behaviour was maintained by positive reinforcement processes (see Table 1). Finally, staff experience (measured in a variety of ways) had little impact on the accuracy of causal attributions for challenging behaviour. Cumulative experience of working in the field of learning disabilities and/or challenging behaviour was not related to attribution accuracy. However, the attributions of qualified teaching staff were more accurate than classroom assistants. Each of these points is discussed below.

The self-report methodology used in the present study reveals that staff lack understanding of the causes of challenging behaviour. Although staff reported causal hypotheses that were generally appropriate and reflected the results of previous research (see Introduction), their attributions did not relate closely to the functions of challenging behaviours described to them. Hypotheses coded as "Incorrect" in the present study included emotional factors (jealousy, insecurity), biomedical factors (physical illness,

hunger/thirst, need for the lavatory, epilepsy), and various antecedent and setting conditions (overcrowding, uncomfortable chair, noise, problems at home) (see Appendix for information relating to "Partially Correct" and "Correct" hypotheses). It is not clear whether staff attributions would be more accurate for real-life incidents of challenging behaviours and/or behaviour of individuals known to them. These questions warrant future research attention.

Previous research suggested that staff may find it easier to recognize positive as opposed to negative reinforcement processes (Hastings et al., 1995). The present data appear to contradict this suggestion. However, one reason for this finding is that staff tended to use the term "attention seeking" to describe the causes of the behaviour in that vignette without any further explanation. It is likely that "attention-seeking behaviour" is a well-used and accepted term both in the classroom and in lay models of children's difficult behaviour. A certain amount of shared knowledge is assumed when the term is used. It is not possible to ascertain the depth of understanding of staff who used this term in their written responses.

There is likely to be a more general problem with the "Partially Correct" category. It is unclear whether, if prompted further, staff could have given accurate reports about the functions of the behaviours described. They may have been unsure about the level of detail expected in their responses. A more intensive research methodology will be required in order to answer this question. Staff reports of their intervention responses to behaviour may, in the end, reflect more accurately the way in which staff understand the notion of behavioural function and put this into practice.

Analysis of the effect of experience on the accuracy of staff causal attributions suggests that quality rather than quantity is the crucial factor. Those who were qualified as teachers would have had some formal training on the understanding and management of children's difficult behaviour. This may have been the salient factor differentiating the experience of teachers and classroom assistants.

The present study also has a number of implications for future research and for those working with challenging behaviour. The crucial question for future research is how staff understanding of challenging behaviours relates to their intervention behaviour. A behaviour analytic model (Hastings & Remington, 1994) suggests that the beliefs of others and the contingencies associated with challenging behaviours themselves (cf. Hall & Oliver, 1992; Taylor & Carr, 1992) combine with staff own beliefs to drive intervention behaviour. Social psychological models also emphasize the role of others' beliefs (subjective norm) and staff feelings of control over the event concerned. Future research should combine all of these variables in an effort to explore the relationship between staff self-reported beliefs and their observed intervention behaviour in natural settings. Preliminary research of this nature will probably have to make use of individual cases, and a combination of self-report and observational material.

In terms of practical issues, the present study has implications for the analysis of challenging behaviour and for staff training. Clinicians should exercise caution when eliciting staff attributions about the causes of an individual's challenging behaviour. If such beliefs are elicited in an unstructured fashion, staff may be unlikely to provide accurate information about the causes of challenging behaviour. Even when staff beliefs are elicited in carefully structured interviews, clinicians need to remain aware of the

limitations of staff understanding in relation to identification of the functions of behaviour.

In terms of staff training, it appears that there may be substantial work to do to enable staff to more accurately identify the functions of challenging behaviour. Detailed training on behaviour analytic principles and their application to challenging behaviour may be needed in order to achieve this aim. Improvements in staff knowledge as an outcome of such training could be assessed by asking staff to consider case examples of challenging behaviour in a similar fashion to the methods of the present study.

Acknowledgements

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Appendix. The coding frames for staff attributions about challenging behaviour

Code label	Description of code
Task avoidance vignette:	
Correct causal hypothesis	Clear statement that the child is engaging in challenging behaviour in order to escape or avoid the task described. Alternatively, a description of the behaviour as learned (child has learnt the consequences of the behaviour, teacher has rewarded it), or as leading to preferred activities
Partially correct hypothesis	Statement that the child found the task difficult, or disliked the task. Some statement of task difficulty (e.g., child did not understand the task, or task is inappropriate)
Incorrect causal hypothesis	Hypotheses either related or unrelated to task avoidance that do not describe the antecedents or consequences of the behaviour. Furthermore, a second order explanatory concept may be described (e.g., lack of interest, lack of motivation, the child is trying to communicate something)
Attention seeking vignette:	
Correct causal hypothesis	Clear statement that the behaviour results in attention from the teacher when attention is at a low level. Alternatively, the behaviour has been learned (e.g., child has learned the consequences of the behaviour, the teacher has rewarded the behaviour in the past)
Partially correct hypothesis	Description of the behaviour as "attention seeking" but without a clear statement of the antecedents/consequences of the behaviour or any other indication that the behaviour is learned
Incorrect causal hypothesis	Hypotheses either related or unrelated to attention seeking that do not describe the antecedents or consequences of the behaviour. A second order explanatory concept may have been used (e.g., inattention, insecurity, jealously, difficulty in sharing teacher's attention with others)