On Some Recent Claims for the Efficacy of Cognitive Therapy for People with Intellectual Disabilities

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Background
Many authors have expressed concern regarding the efficacy of psychotherapy, including psychotherapy for people with intellectual disabilities.

Materials and Methods
Recently, many authors have made claims for the effectiveness of cognitive therapy for treating people with intellectual disabilities. During this debate, applied behaviour analysis has been misrepresented by incorrectly labelling behavioural as cognitive techniques, repeated misrepresentations of behaviourism and attributing the efficacy of treatment packages to cognitive components of undemonstrated efficacy when it is more parsimonious to attribute efficacy to behavioural elements of known efficacy.

Conclusions
This article documents and corrects these errors.

Keywords: applied behaviour analysis, cognitive therapy, evidence based practice

Introduction
This concern over the efficacy of psychotherapy has been expressed for over 50 years (Eysenck 1952) and continues to this day in the form of questions over what psychotherapy works for whom in general mental health and behavioural problems (NICE 2003; Roth & Fonagy 2005). Similar concerns exist over the efficacy of psychotherapies for people with intellectual disabilities and autism (Jacobson et al. 2005), including the efficacy of psychodynamic psychotherapy (Beail 2003; Prout & Norwick-Drabik 2003; Lynch 2004; Sturmey 2005a), cognitive therapy (Stenfert-Kroese et al. 1997; Sturmey 2004; Hassiotis & Hall 2005) and a wide range of other psychological and non-psychological treatments (Jacobson et al. 2005). These concerns include the failure to adopt effective interventions and a tendency for treatment fads to occur which may be ineffective or even harmful to clients (Jacobson et al. 2005; Sturmey 2005b) and the absence of an adequate evidence base for commonly advocated psychological interventions, such as psychoanalytic and psychodynamic psychotherapy (Sturmey, 2003; Prout & Norwick-Drabik 2003), and cognitive and cognitive behaviour therapy (CBT; Sturmey 2004; Hassiotis & Hall 2005). This absence of evidence for the efficacy of non-behavioural interventions contrasts with the extensive and comprehensive database for interventions based on applied behaviour analysis (ABA). This evidence base includes multiple randomized controlled trials (Prout & Norwick-Drabik 2003), meta-analyses of hundreds of single-subject experiments (Scotti et al. 1991; Didden et al. 1997; Carr et al. 1999; Shogren et al. 2004), consensus panels and expert opinions (New York Department of Health 1999a,b,c; Rush & Frances 2000; Committee on Educational Interventions for Children with Autism 2001; General Accounting Office 2005).

Recently, several authors have advocated the use of cognitive therapy in people with intellectual disabilities (Stenfert-Kroese et al. 1997; Stenfert-Kroese 1997; Taylor & Novaco 2005). They present the argument as one of equity of access (Bender 1993), disdain for people with intellectual disabilities on the part of therapists (Stenfert-Kroese 1997) and dissatisfaction with or apparent limitations of ABA (Willner, 2005; Stenfert-Kroese 1997; Taylor & Novaco 2005). They present the argument as one of equity of access (Bender 1993), disdain for people with intellectual disabilities on the part of therapists (Stenfert-Kroese 1997) and dissatisfaction with or apparent limitations of ABA (Willner, 2005; Stenfert-Kroese 1997; Taylor & Novaco 2005). However, these authors do not argue for the superiority of cognitive therapy and CBT over ABA, as there is currently no evidence to support such a position (Prout & Norwick-Drabik 2003; Hassiotis & Hall 2005; Sturmey 2005a).
Indeed, a recent meta-analysis identified only three studies – which included modified assertiveness training and anger management in adults with intellectual disabilities – which had some impact after treatment on ratings from individuals and carers, but not at 6-month follow-up (Hassiotis & Hall 2005).

During this discourse, there have been numerous assertions and errors made concerning ABA. These include mislabelling ABA as cognitive therapy, misrepresenting ABA, and attributing the alleged efficacy of treatment packages to cognitive therapy, when it is more parsimonious to attribute it to behavioural elements of the package of known efficacy. The purpose of this article was to document and correct these three kinds of errors.

**Applied Behaviour Analysis Mislabelled**

**Meta-analysis misinterpreted**

Several articles have recently and incorrectly claimed that non-behavioural methods of interventions were effective by citing outcome data on behavioural interventions. For example, Prout & Norwick-Drabik (2003) conducted a meta-analysis of psychotherapy outcome research. They identified nine experimental evaluations of psychotherapy in people with intellectual disabilities, with an average effect size of 1.01 (range 0.06–1.85). Subsequently, Lynch (2004) cited this study as supporting psychotherapy. However, a review of these nine outcome studies indicated that they were evaluations of behavioural treatments, such as assertiveness training, relaxation training and behavioural methods of weight reduction, and did not include any evaluations of psychodynamic or psychoanalytic treatment (Sturmey 2005a).

**Respondent conditioning and extinction**

Several common respondent conditioning procedures have been mislabelled as cognitive therapy. Feldman et al. (2004) conducted a survey of intervention methods for challenging behaviours. They developed a classification system for interventions, including categories such as behavioural and cognitive behavioural. Under ‘cognitive behavioural’ they included relaxation training, which refers to changes in the behaviour of muscles and involves no changes in verbal behaviour or private events. Relaxation training dates back to Wolpe’s (1958) classic text, *Psychotherapy by Reciprocal Disinhibition*, where it was one of the methods used during counter-conditioning response during systematic desensitization for a variety of anxiety and mood disorders.

Willner (2004) reported an interesting case study in which traumatic nightmares in a man with moderate learning disabilities was treated by repeated rehearsal of the nightmares, modifying the end of the nightmare and relaxation training. Willner described the procedure as cognitive therapy, presumably because the intervention involved asking the man to change the way he talked about the end of the nightmare. Yet, Willner noted that the man had poor verbal skills and did not measure any schemata or attributions probably because of this. This type of intervention is almost exactly the same as that noted in many earlier papers which reported treating nightmares by repeated rehearsal and modification/non-modification of the ending of the nightmare (Marks 1978; Burgess et al. 1994). Thus, Willner’s effective treatment of the nightmare is most parsimoniously explained by construing the nightmare as a conditioned stimulus and the process considered respondent extinction.

**Differential reinforcement of verbal behaviour**

A common error is that interventions that use modification of verbal behaviour by procedures, such as differential reinforcement of verbal behaviour or respondent extinction must be cognitive interventions, as they involve verbal behaviour. The operant nature of some of human verbal behaviour has been long known. For example, Greenspoon (1955) demonstrated that undergraduate students’ emission of plural words was influenced by the experimenter saying ‘mm-hmm’. Subsequent studies have revealed that the verbal behaviour of children with autism (Williams et al. 2003), psychotic speech in both people of average intelligence (Wilder et al. 2001) and people with intellectual disabilities (Dixon et al. 2001; Lancaster et al. 2004), and disruptive verbal behaviour in people with intellectual disabilities (Luiselli et al. 1981) and autism (Rehfeldt & Chambers 2003) can all be operant behaviour controlled by its consequences.

Matson et al. (1979) reported a single-subject experiment evaluating a behavioural package to change depressed behaviour in a 31-year-old man with mild intellectual disability. The treatment package included multiple components, including praising the man for positive self-statements. Matson et al. construed this correctly as differential reinforcement and did not report any measurement of attributions or schemata. However, Lindsay et al. (2005) discussed that ‘This study goes beyond a purely behavioral interpretation of depression. The authors employed positive self-statements which is a method to address dysfunctional cognitive strategies,
such as expecting negative outcomes, blaming oneself for negative outcomes or not crediting oneself for positive outcomes’. Differential reinforcement of verbal behaviour and cognitive therapy procedures, such as changing expectancies of negative outcomes can be distinguished from each other. In differential reinforcement of verbal behaviour, interventions take place in the natural environment and after the client emits the target verbal behaviour a consequence is delivered contingently upon the target verbal behaviour and subsequently, the frequency of the target behaviour increases (Greenspoon 1955). In cognitive therapy, some non-observable construct, such as negative expectancy of outcomes, is measured indirectly through client verbalizations. A therapeutic procedure is then used to change this unobservable construct, and subsequently outside therapy behaviour changes. Matson et al.’s study is clearly an example of the former, not the latter. It could be argued that even though this procedure was differential reinforcement of verbal behaviour, the true mechanism of change was cognitive restructuring. However, no measures of expectancy or other constructs used in cognitive therapy were taken. Hence, the more parsimonious explanation that behaviour change was due to differential reinforcement is to be preferred.

Self-regulation

Several authors have claimed that self-regulation is not a behavioural technique (Taylor et al. 2004; Taylor & Novaco 2005; Willner 2005) and that behavioural approaches must be supplemented or replaced by cognitive or cognitive–behavioural methods. For example, Taylor et al. (2004) wrote that ‘...behavioral approaches to the treatment of aggression ... tend not to be presented as “self-actualizing” in nature. That is, often they do not actively target self-regulation ...’ (p. 204) and again Taylor & Novaco (2005) state that ‘...behavioural approaches, unlike direct treatments, do not explicitly encourage self-regulation of behaviour ...’ (p. 50).

Skinner (1953) devoted an entire chapter in Science and Human Behaviour to behavioural analysis of self-control and its implication for treatment. Vernacular language often implies a controlling self who is the agent that causes our over behaviour. Yet, unobservable causes cannot be a part of science. Only independent variables that an experimenter can manipulate and their effects that can be observed on behaviour are all that science has to work with. Thus, self-control might at first appear to be an insurmountable challenge to ABA. However, a behavioural account of self-control is possible. Skinner’s analysis of self-control posits that control of one’s own behaviour is no different than control of another person’s behaviour. The independent variables that a person manipulated to influence another person’s behaviour are the same as those that can be manipulated to control one’s own behaviour. Thus, self-control consists of two classes of behaviour: controlling and controlled responses (p. 231). For example, a person might take a healthy snack to work and place it where it is readily available (the controlling response) in order to change the future probability of eating junk food (the controlled response). The variables that control the controlling responses, like those controlling other behaviour, are environmental variables. If we can identify and manipulate them, then we can teach self-control to people including people with intellectual disability.

People learn a variety of self-control strategies, such as self-restraint by sitting on their hands, folding their arms or putting their hand over their mouth to reduce the future probability of fidgeting or saying something they should not. We learn to remove stimuli by leaving temptations such as cash or cigarettes to reduce wasteful spending and snacking at home. We learn to present the stimuli to make other behaviours more probably, such as putting on glasses and turning on the light to make reading and writing more likely. People may learn to punish our own behaviour, for example, by setting the alarm clock at night to reduce the probability of sleeping the next morning. Ultimately, the source of self-control is not the person’s self-will, self-determination or cognitions that initiate behaviour, but rather the environmental variables such as the contingencies that control the controlling behaviour.

This analysis has been extensively used in ABA to teach self-control to people in many situations (Stokes et al. 1987; Guevremont et al. 1986, 1988; Whitman 1990). For example, in correspondence training, correspondence between verbal behaviour, such as self-instruction and subsequent behaviour, such as play, is taught. Self-control has been used to teach children to accurately self-observe and to subsequently accurately self-reinforce the absence of their own disruptive behaviour in order to control their own challenging behaviours (Bolstad & Johnson 1972), to teach children to self-instruct to increase subsequent play (Baer et al. 1988). This mechanism underlies other research enhancing the independence of people with developmental disabilities, such as teaching self-regulation of behaviour through time-management using a palm pilot (Davies et al. 2002) and activity schedules (Krantz
et al. 1993). Hence, a Skinnerian analysis of self-management accounts for the behaviour of self-managing and has been highly productive in producing a technology to enhance the self-management skills of people with intellectual disabilities.

Summary

The classic methods of ABA, such as skills training, respondent extinction, differential reinforcement of verbal behaviour, relaxation training and self-regulation have been incorrectly labelled as cognitive therapy.

ABA Misrepresented

Private events and ABA

Behaviourism is often incorrectly stereotyped as ignoring or denying private events. For example, Stenfert-Kroese (1997) stated that ‘... although a pure Skinnerian “black box” approach to cognitive processes has been rejected by most, and people with learning disabilities are now credited with thought (be it verbal or non-verbal) …’ (pp. 5–6).

This representation of ABA as denying or ignoring private events is a common error that has been repeated down the years (Chiesa 1994). Skinner (1953; chap. 16, 17 and 18) and Skinner (1985) repeatedly addressed the issue of private events. Skinner did not deny private events. Rather, he explicitly discussed the contents of the alleged ‘black box’ and provided an analysis of private events, including making a decision, having ideas and recall. From a radical behavioural perspective such private events are behaviour to be explained, but are not the causes of behaviour. Skinner (1953; p. 257) wrote ‘We need not suppose that events which take place within an organism’s kin have special properties ... A private event may be distinguished by its limited accessibility but not, so far as we know, by any special structure or nature ...’.

Stenfert-Kroese’s (1997) characterization of Skinner’s work as a ‘black box approach’ is inaccurate. The real challenge of Skinnerian analysis of private events it to construe them as behaviour to be explained, but not the causes of behaviour. Herein lies one of the fundamental differences between cognitive psychology, which posits private events, such as attributions and schemata, as the cause of observed behaviour, whereas radical behaviourism attempts to identify the environmental variables controlling all behaviour, including behaviour observable to only one person.

Client emotional needs

Willner (2005) claims that behaviourism cannot address emotion. Likewise, in Taylor & Novaco’s (2005) review of theories of anger, they omit any behavioural account of anger, while devoting extensive space to psychoanalysis. They dismiss ABA approaches to anger and but Skinner (1953) devoted a chapter to the conceptualization of emotions, including anger, rage, loneliness, phobias, depression and so on. For example, in the case of anger, emotional behaviours include turning red, sweating palms, facial expression of anger, and observations of slamming doors, fighting, speaking curtly to others and approach behaviour to violent scenes. Some of these behaviours, especially those related to autonomic arousal, seem to be reflex behaviours, and others, such as slamming doors and violence on other people or objects seem to be operant behaviours. From a behaviour analytic perspective, emotions are not the causes of behaviour, but rather a complex of behaviours and statement about their relationship to the environment. For example, when we say someone is angry we say that certain stimuli, such as criticism from others or loss of reinforcers evoke conditioned responses, and establish violence and perhaps other consequences to others as powerful reinforcers. If we know the environmental variables that control anger, then we can manipulate them to change anger. We can remove the stimuli that evoke anger, conduct respondent extinction or present other stimuli that evoke incompatible behaviour. Likewise, we can conduct operant extinction (if we are foolhardy or brave enough) or at least reinforce other responses.

ABA has been especially effective in dealing with certain kinds of emotional problems through respondent extinction, such as flooding, implosion, graded exposure and systematic desensitization for phobias, abnormal grieving, stereotypical nightmares, depression, sexual dysfunction, lack of assertiveness and post-traumatic stress disorders (Wolpe 1958). There have been a wide range of treatments of emotional disorders for people with intellectual disabilities using respondent extinction and counter-conditioning such as phobias (Silvestri 1977; Matson 1981a,b; Runyan et al. 1985; Spencer & Conrad 1989; Love et al. 1990; Luscre & Center 1996; Conyers et al. 2004). Relaxation training alone may be an effective treatment for a variety of disruptive behaviours that could be characterized as angry (McPhail & Chamove 1989; Mullins & Christian 2001) and can be effective in prompting adaptive behaviours, such as time on task (Lindsay et al. 1994) that might be compatible/incompatible with aggressive behaviour. ABA has also
addressed mood disorders, through the analysis and manipulation of activities correlated with mood regulation to increase happiness in people with severe and profound intellectual disabilities (Green & Reid 1999; Smith et al. 2005) including at least one report of improving mood in a person with intellectual disabilities and a mood disorder (Lindauer et al. 1999).

The behaviour analytic literature is smaller than that on treatment of other problems such as skills training and challenging behaviours, especially outside anxiety disorders. However, there are a number of experimentally well-designed studies demonstrating that ABA addresses a variety of emotional problems in people with intellectual disabilities. Hence, Willner’s assertion that ABA does not address emotional needs in people is incorrect.

Limitations of ABA

Taylor’s (2002) review of anger management in people with intellectual disabilities stated that ‘they are intrusive and have not been tested in naturalistic settings with higher-functioning clients and low-frequency aggression’ (p. 57). Indeed, there has been more research using ABA for aggression in people with severe and profound intellectual disabilities (Didden et al. 1997). This may reflect earlier behavioural work done in institutions, the greater severity of such problems and the lack of treatment alternatives. When reviewing behavioural studies of aggression in people with intellectual disabilities, it is important to distinguish basic from applied research. The differences may be subtle because although both kinds of research measure a behaviour of social importance, the aims of these two kinds of studies are different. For example, a basic study demonstrating whether or not aggression is sensitive to its consequences can adequately demonstrate that in an experimental setting. Such studies need only demonstrate procedural integrity and experimental control, but are unconcerned with issues such as generalization, maintenance or social validity. In contrast, applied studies take place in natural environments, must involve natural change agents, such as family members and staff, must address multiple settings and must result in socially significant reductions of the target behaviour, as well as meaningful improvements in the participant’s quality of life. This is a much more difficult task than basic research as the resources required for such studies are very extensive and the possibility of losing experimental control, treatment integrity and loss of participants is much greater. Hence, there are probably many fewer applied than basic behaviour analytic studies of aggression in people with intellectual disabilities.

Yet, there are examples of the application of ABA to treatment of aggression in community settings with clients with intellectual disabilities. Carr et al. (2003) reported the outcome of behavourial treatment of demand-related aggression data in a 37-year-old man with autism and mild intellectual disabilities. During baseline, tasks that provoked aggression could not be completed because of aggression. A ‘mood induction’ procedure was used in which tasks associated with positive mood were identified and delivered intermittently for at least 15 min prior to presentation of the provocative task. In approximately two-and-a-half years of treatment and follow-up data, aggression no longer occurred during presentation of the provocative task Whitaker (2002) reviewed 247 studies and identified 19 studies that showed ≥70% reduction in aggression, which took place in a typical client setting and included follow-up of at least 1 month after the end of treatment. Some of these 19 studies took place in workshops, family homes, community placements, group homes, as well as institutional settings. Thus, there is literature demonstrating that behavioural interventions can be effectively conducted in community settings in people with mild intellectual disabilities and with long-term maintenance and follow-up data.

The issues of maintenance, follow-up, generalization and implementation in community settings are important issues for all forms of therapies, including cognitive therapy. Many studies of cognitive therapy in people with intellectual disabilities have taken place in institutional settings, such as locked forensic units (e.g. Taylor et al. 2002; Burns et al. 2003) or with people under court-ordered treatment, where non-compliance or failure to report progress could result in incarceration (Lindsay et al. 2003, 2004). Proponents of cognitive therapy have claimed that results of the therapy can be generalized to another setting whereas those of ABA treatment cannot. However, generally they have not yet reported data on this issue. Indeed, in one of the few studies to do so, Burns et al. (2003) found that although anger management was effective in three forensic inpatients with intellectual disabilities during therapy, their anger levels returned to pretreatment levels after treatment ended. Thus, generalization and maintenance of change may also be problematic for cognitive therapy.

Summary

ABA has been misrepresented as an approach that denies the existence of private events, self-regulation, human emotion and that is limited to high-frequency
problems in people with severe intellectual disabilities in institutional settings. A simple review of the writings of Skinner and published research shows that these claims are untrue.

**Efficacy of Cognitive Therapy and Treatment Packages**

**Multi-component treatment packages**

Many interventions are packages of several or sometimes some intervention methods. They may include both classic behavioural methods as well as cognitive methods. For example, Lindsay’s work with sexual offenders included instructions, self-recording, differential reinforcement of adaptive behaviour, skills training, relaxation training, as well as cognitive restructuring (Lindsay & Smith 1998; Lindsay et al. 2003, 2004). Likewise, the Taylor & Novaco (2005) anger management package includes behavioural techniques, such as self-monitoring, relaxation training, graded exposure to antecedents that elicit aggression, self-instruction, problem solving, role play and skill rehearsal. Hence, in many CBT packages, cognitive therapy procedures are confounded with behavioural procedures and no conclusion can be drawn from such outcome studies as to which component is responsible for change. Some studies (e.g. McPhail & Chamove 1989) have found that relaxation training alone may reduce aggressive behaviour in people with intellectual disabilities. Thus, in the absence of component analyses of these CBT treatment packages, it may be more parsimonious to attribute change to behavioural components that have already been evaluated.

However, there are no studies showing that cognitive therapy alone produces such changes. Hence, it is more likely that behavioural interventions are responsible for change. In order to conclude that cognitive therapy is responsible for change, it would be necessary to conduct a component analysis of such treatment packages, compare cognitive therapy alone with some credible placebo condition, or compare behavioural intervention plus cognitive placebo with behavioural plus cognitive therapy. Even as cognitive therapy is superior to placebo, the question of whether it is a preferred treatment would still remain unanswered. Only direct comparisons of cognitive therapy with therapies with established records of treatment efficacy, such as relaxation training, could answer such questions by providing data on superior behaviour change, better costs, better safety, or greater social acceptability.

**Treatment integrity**

In addition to the documented procedures in treatment packages, there may also be undocumented learning processes that might account for the apparent effects of treatment. For example, Truax (1966) conducted observations of Carl Rodgers allegedly conducting Rogerian therapy. An important component of the Rogerian therapy is unconditional positive regard. However, the observation of Carl Rogers’ behaviour indicated that his regard was highly conditional; specifically, Rogers interacted positively with his client contingent upon their report of improvement. Hence, it is possible that if any behavioural change occurred during Rogerian therapy it may be entirely due to differential reinforcement of change by the Rogerian therapist.

Skinner (1953) noted that psychoanalytic psychotherapy may include other learning processes. He speculated that the psychoanalyst who says little other than periodic reflections provides an environment with little or no punishment for client verbal behaviour, no matter how unusual. For those clients whose verbal behaviour has been punished by the impatient, bored or irritated reactions of other people, the frequency of talking about their problems will increase (especially if the therapist inadvertently reinforces client verbal behaviour). Client verbal behaviour may be conditioned stimuli that elicit conditioned negative emotional responses. If the clients repeatedly expose themselves to these conditioned stimuli, then psychoanalytic psychotherapy may include a respondent extinction process.

Such data have not yet been collected during cognitive therapy in people with intellectual disabilities or other populations. Hence it is not known if this mechanism may account for any change in behaviour following cognitive therapy. Future research into cognitive therapy should exclude this possibility by observing the contingency between client reports of progress and therapist behaviour or including a control group with contingent therapist verbal reinforcement for reports of change in the control condition.

Another simple behavioural mechanism that might account for change during cognitive therapy may result from the inclusion of third parties, such as family members or staff either during therapy or during consultation and staff/parent training associated with cognitive therapy. When third parties are present during therapy, such as anger management, they may learn behavioural procedures, such as identifying behaviour chains and redirection the client early in the behavioural chain to other behaviours. They may also perhaps learn how to
discriminate client adaptive and maladaptive behaviour and differentially reinforce other behaviour. They may learn to prompt relaxation training, appropriate social or problem-solving skills or implement time-out procedures. In effect, cognitive therapy with the presence of third parties may merely function as a form of staff or parent training. In order to exclude this possibility, future research should either exclude third parties from trials of cognitive therapy or conduct observations of third-party behaviour in the natural environment to ensure that it did not change and thus changes in staff or parent behaviour are not confounded with cognitive therapy.

Conclusions
Recent critiques of behavioural approaches to behavioural and psychiatric issues in people with intellectual disabilities have commonly involved incorrectly labelling classic behavioural techniques as cognitive therapy, misrepresentation of behavioural therapy and attributing the efficacy of treatment packages to cognitive therapy. The argument for the use of cognitive therapy with people with intellectual disabilities on grounds of equity access is a false argument. Dubious, many therapists do not wish to work with people with intellectual disabilities. ABA can be difficult to implement in a variety of settings. However, neither of these points are evidence for the efficacy of cognitive therapy or the lack of effectiveness of ABA. The real ethical problems is that there are a wide range of interventions based on ABA that are effective for a wide range of behavioural and psychiatric disorders that most people do not receive (Feldman et al. 2004). This results in widespread use of restrictive procedures in community settings, such as restraints (Emerson 2002; Feldman et al. 2004) and other unregulated restrictive behavioural procedures (Feldman et al. 2004) and psychotropic medication (Singh et al. 1997) in the absence of regulated and effective delivery of ABA. The ethical imperative of beneficence requires that people, including people with intellectual disabilities, receive known effective treatments. Those effective treatments are based on ABA.

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