Child Care in Practice

The good behaviour game

Michael Keenan [a] , Janna L. Moore [a] & Karola Dillenburger [b]

[a] School of Psychology and Communication Sciences, University of Ulster , Coleraine

[b] School of Social Work, The Queens University of Belfast ,

Published online: 17 Jan 2008.

PLEASE SCROLL DOWN FOR ARTICLE

THE GOOD BEHAVIOUR GAME

MICHAEL KEENAN,
JANNA L. MOORE,
School of Psychology and Communication Sciences, University of Ulster at Coleraine and
KAROLA DILLENBURGER,
School of Social Work, The Queens University of Belfast

ABSTRACT

The aim of this study was to reduce disruptive behaviour among a group of boys with 'behaviour problems' using the 'Good Behaviour Game'. The procedure involved dividing the class into two teams, setting a 'winning' criteria for a decrease in the rate of disruptive behaviour and providing consequences for a response rate less than the 'winning' criteria or less than the other team's response rate. Reinforcement was in the form of a variety of confectionery and stationery items. A baseline period measured the frequency of two target behaviours, talking and out-of-seat behaviour, across five sessions. The intervention phase consisted of six sessions with the 'winning' criteria set at ten disruptions per lesson or less and a further three sessions with the 'winning' criteria set at five disruptions per lesson or less. The results showed a marked decrease in the observed rates of the two target behaviours on implementation of the intervention phase. Further reductions were observed when the 'winning' criterion was lowered. These results support the findings of previous research by demonstrating the effectiveness of the Good Behaviour Game with 'behaviourally disturbed' children.

INTRODUCTION

In recent years, there have been a spiralling number of reports in the British media about the problem of increasing levels of disruptive behaviour in the classroom. One report (Cohen, 1995) told how a school in Birmingham, England, had to employ adult 'minders' for two children, an eleven year old and a nine year old. Their job was to sit alongside the pupils in class, supervise their behaviour, help with schoolwork and prevent them from disrupting classmates. Cohen stated that '*such tactics are symptomatic of what teachers say are declining standards of behaviour among pupils even as young as four*' (p.5).

Unpublished figures compiled by the National Association of School Masters/Union of Women Teachers (NAS/UWT) revealed that the number of cases where it was called on to back staff refusing to teach violent or disruptive pupils was 34 in 1994, double the previous year's figure. Some of these cases included children as young as five and six years old who were described as 'uncontrollable' and 'violent' (Cohen, 1995).

Although one can understand the reaction of the teachers' union as it is their job to act in the interests of teachers' welfare, it does nothing to solve the problem of disruptive behaviour. The policy of employing one adult to look after every disruptive child is neither economically viable nor socially desirable. The labelling of children as 'violent' or 'uncontrollable' is also of little value in improving the situation. 'Summary labels' like these refer to a set of different behaviours that

have something in common (Grant and Evans, 1994). Their only real value is that they can quickly provide information about the categories of behaviour that a person is likely to engage in. For example, we might expect a child who was labelled as 'violent' to hit other children and be verbally aggressive towards the teacher. Grant and Evans recognise four major disadvantages of summary labels. Firstly, they provide only broad information about behaviour categories. A second disadvantage is that they do not permit a quantitative treatment of behaviours. Thirdly, summary labels can change or maintain our reactions to the labelled individual that is counter-productive (cf. Bromfield, Bromfield and Weiss, 1987). The fourth disadvantage is that a summary label may lead to the conclusion that the label is a 'thing' inside the individual that causes him or her to act in a way appropriate to the label and that this 'thing' is not amenable to change. That is, summary labels encourage circular reasoning that in turn creates the illusion of having provided an explanation for the observed behaviour. For example, initially some behaviour is observed and described as 'violent'. Next, the person engaged in this behaviour is described as 'violent'. A category mistake happens next when it is suggested that the reason the violent behaviour occurs is because the person is violent (see Baum, 1994, for an excellent discussion on category mistakes and mentalism). Here, the label reserved for the description of behaviour (violent) is unwittingly transformed into an explanatory term (violent) for the same behaviour. The person is said to be violent because they are violent! (Dillenburger, O'Reilly, and Keenan, 1997).

Traditional methods used by teachers to handle disruptive behaviour include raising their voice, using verbal reprimands, belittling the child, threatening loss of privilege or punishment at some future time, detention, extra work, frowning, gesturing and side-to-side head shaking. Unfortunately, research findings show that such disapproving behaviours and punishments do not have the desired effect. Thomas, Becker and Armstrong (1968) noted that as teachers' disapproval increases, so does disruptive behaviour. They also found that as praise for appropriate behaviour increases, so does appropriate behaviour. The use of positive reinforcement, then, is preferable to the more usual unsystematic application of aversive sanctions as the latter create negative classroom environments which have many drawbacks (Skinner, 1968).

The techniques of applied behaviour analysis have been used successfully in a wide variety of educational settings. However, their adoption has not been widespread or systematic. Teachers and other professionals still harbour reservations about behaviour analysis, largely due to a knowledge deficit. A survey conducted by Schwieso and Hastings (1981) indicated that most teachers' acquaintance with the approach did not extend beyond a couple of lectures during initial training. These reservations are based on misrepresentations of behaviour analysis (Jensen and Burgess, 1997). The perpetuation of these myths has prevented the dissemination of information about behaviour analysis and the uptake of its procedures.

THE GOOD BEHAVIOUR GAME

Despite the prevalence and degree of misrepresentation of behaviour analysis, behaviour analysts have continued to develop and refine procedures for dealing with disruptive behaviour in educational settings. One such procedure is the Good Behaviour Game, developed by Barrish, Saunders and Wolf (1969). The technique was designed to reduce disruptive behaviour through a game involving competition for privileges available in almost every classroom. The students were divided into two teams and disruptive behaviour by any member of a team resulted in possible loss of privileges for every member of his team. Three subsequent studies have explored the utility of this procedure. Firstly, Saigh and Umar (1983) showed that the Good Behaviour Game has cross-cultural validity. They demonstrated the efficacy and social validity of the procedure with Sudanese elementary school students. Another study carried out by Fishbein and Wasik (1981) extended the scope of setting in which the game was known to be successful by extending its use to a library setting. The rate of disruption was charted across four treatment phases, namely, baseline, introduction of the game, game played but no reinforcement given and reintroduction of the game. They found modification of the Good Behaviour Game did not detract from its effectiveness in reducing disruptive and off-task behaviour.

A third study (Harris and Sherman, 1973) is perhaps the most significant for two reasons. Firstly, it replicated the procedures of the Barrish et al. (1969) study and showed the Good Behaviour Game to be an effective technique for reducing disruptive talking and out-of-seat behaviour. Secondly, the authors experimentally investigated the nature of the effective components of the game. Their findings indicated that the effective components were division of the class into teams, consequences for a team winning the game, and criteria set for winning the game. Dividing the class into teams meant that there were group contingencies rather than individual contingencies operating; the behaviour of an individual had consequences for the entire team. Since consequences are dependent on the total performance of the group as a whole rather than on the behaviour of any one person, peer group pressure can affect the response of individual team members. If one person's behaviour is losing his team marks, the other team members are likely to try and influence him to behave appropriately. The effectiveness of the procedure can be enhanced by displaying a poster of the rules at the front of the classroom. The poster is designed to act as a 'discriminative stimulus'; when a behaviour (e.g., not talking) is followed by a reinforcing stimulus (e.g., chocolate) in one context but not in other contexts, the context (i.e., the poster) associated with reinforcement becomes a discriminative stimulus (Baldwin and Baldwin, 1981). Subsequent observations of behaviour in the presence of a stimulus established as a discriminative stimulus show that there is an increased likelihood that that behaviour will occur again (Cooper, Heron, and Heward, 1987).

The purpose of the current study was to examine the usefulness of the Good Behaviour Game using a different population of children to those

used previously. In all previous studies children were of elementary school age. In the Saigh and Umar (1983) study, for example, the average age of the students was 8.25 years. Previous studies also have all been with children in 'normal' schools. In the current study, the students were mostly secondary school pupils (i.e., over nine years old) and all had been designated as having 'behaviour problems' of such severity that necessitated them being placed in a special school.

METHOD

Participants and Setting

The research was conducted in a special school situated in a medium-sized country town in Northern Ireland. The school caters for boys from all over Northern Ireland who have been unable to be educated within the framework of mainstream education. Boys at the school are all subjects of statements of special educational needs in the category of 'Emotional and Behavioural Difficulty'. The boys are referred for a variety of problems including truancy, aggressive behaviour, non-compliance, abusive language and attention-seeking behaviour. Often, it is considered appropriate that they be placed in the school, not only so that their educational needs can be met, but also because it is felt they hinder the education of their peers in a mainstream school. These pupils tend to have poor social backgrounds, be academically behind for their age and lack social skills. The main aim of the school is to reintegrate pupils to mainstream education as quickly as possible.

The participants in this research were seven boys who constituted one class from the school. The class was divided into two teams. Team 'A' consisted of four boys whom we shall refer to as Jim, David, Simon and Sam. There were three boys in Team 'B', whom we shall call Greg, Colin and Alan in order to maintain confidentiality. The seven pupils ranged in age from nine years old to fifteen years old. All data was collected during English lessons, with the children always under the supervision of the same teacher.

Observations

Observations were obtrusive, as the pupils were aware of the researcher's presence. The researcher previously had been present in the capacity of classroom assistant and for a period of initial observation before data collecting began. Frequency recordings of talking and out-of-seat behaviour, were recorded on a tally chart during each 45-minute session. Data was collected in fourteen sessions over a six week period. The definitions of the two target behaviours were as follows:

Talking: an instance of a non-permitted audible sound emanating from the mouth.

Out-of-seat-behaviour: Movement of the child from his chair when not permitted or requested by the teacher. An instance of this was recorded when the child's buttocks were not touching the chair.

Inter-Observer Reliability

The teacher and the researcher simultaneously but independently observed the frequency of the two disruptive behaviours for ten minutes during each 45-minute session. Inter-observer reliability was calculated by dividing the smaller of the two frequencies by the larger and multiplying by 100 to find the percentage of agreement. The average percentage of agreement between the teacher and the researcher in the baseline was 93 per cent. The percentage of agreement between the two observers during the intervention phase was 100 per cent during all nine sessions.

Experimental Procedure and Materials

The suitability of various consequences for appropriate behaviour were discussed with staff. It was decided that initially confectionery and small stationery items would be used; it was agreed that other consequences would be delivered if these did not function as reinforcers. Baseline (Condition A) measurements were then recorded over five sessions. The researcher occupied a position in the classroom where all seven pupils could be observed clearly. The frequencies of the two target behaviours were then recorded for each of the two teams on a tally chart. During this phase, the pupils were not informed about the nature of the researcher's activities.

Usually with a changing-criterion design, an unwanted behaviour is gradually reduced in frequency by progressively increasing the stringency of criteria in small steps. However, because of the marked reductions demonstrated in previous studies of the game, it was decided to use the stringent criteria of ten occurrences or less to begin with. Decisions about subsequent criteria were then to be made based on the success of the first trial. As it turned out, the game was successful immediately and an even lower criterion of five occurrences per lesson was introduced subsequently (see below).

Before the first intervention session the rules of the Good Behaviour Game were explained to the boys.

> Today, we are going to play a game during class called the Good Behaviour Game and to play it the class will be divided into two teams. Team 'A' will consist of Jim, David, Simon and Sam and Team 'B' will consist of Greg, Colin and Alan.
>
> There are only two rules to this game. They are:
>
> (1) No talking without permission from the teacher.
>
> (2) No leaving your seat without permission from the teacher.
>
> I would just like to make it clear what exactly these two rules mean.
>
> (1) No talking includes not making silly noises, giggling or yawning like a wild animal! If you want to say something or if you need help with your work raise your hand (do not shout Miss, Miss!) and the teacher will help you as soon as possible.

(2) No leaving your seat means you do not take your bottom off the seat. If you wish to leave your seat for any reason you may raise your hand and ask for the teacher's permission to do so.

If you talk or leave your seat without permission your team will be given a mark on the blackboard. The team with the fewer number of marks at the end of the period will be the 'winning' team and each member will get a chocolate bar. If both teams get ten marks or less each then both teams will be 'winning' teams. In the event of a tie, both teams will be 'winning' teams.

This game will be played a few times over the next few weeks. There will also be a prize for the team with the least number of marks, over all the times the game is played. This prize will be a chance for each member of the 'winning' team to select a magazine of their choice from a list I will show you.

A poster stating the two rules of the game was displayed at the front of the classroom when sessions of the game were in progress and not at any other times. At the beginning of each subsequent session in which the Good Behaviour Game was played, a shorter version of instructions was read.

We're going to play the game again today.

The teams will be the same. I'll just remind you of the two rules:

(1) No talking without permission. This includes not making silly noises, giggling or loud yawning. Don't shout 'Miss' when you wish to attract the teacher's attention - simply raise your hand.

(2) No leaving your seat for any reason unless you receive permission to do so.

If you talk or leave your seat without permission your team will be given a mark on the blackboard. The team with the fewer number of marks at the end of the period will be the 'winning' team and each member will get (name of reinforcer available that session stated).

If both teams get 10/5 marks or less then both teams will be 'winning' teams.

The game commences now and will continue right to the end of class.

The rules were reiterated, the consequences available were stated and the 'winning' criteria was announced. A further five sessions were played with the 'winning' criteria at ten marks or less (Condition B) then three games were played with the 'winning' criteria set at five marks or less (Condition C).

RESULTS

Figure 1 shows the frequency of talking across fourteen sessions. During baseline conditions, frequencies varied between 67 and 91 for Team A and between 78 and 107 for Team B. When the intervention phase began the level of talking decreased drastically. In Condition B

frequency of talking varied between one and ten for Team A and four and ten for Team B. In Condition C, when the 'winning' criteria was tightened to five marks or less, the level of talking again fell. The frequency of talking varied between nought and three for both teams.

Figure 1. The frequency of talking in each session.
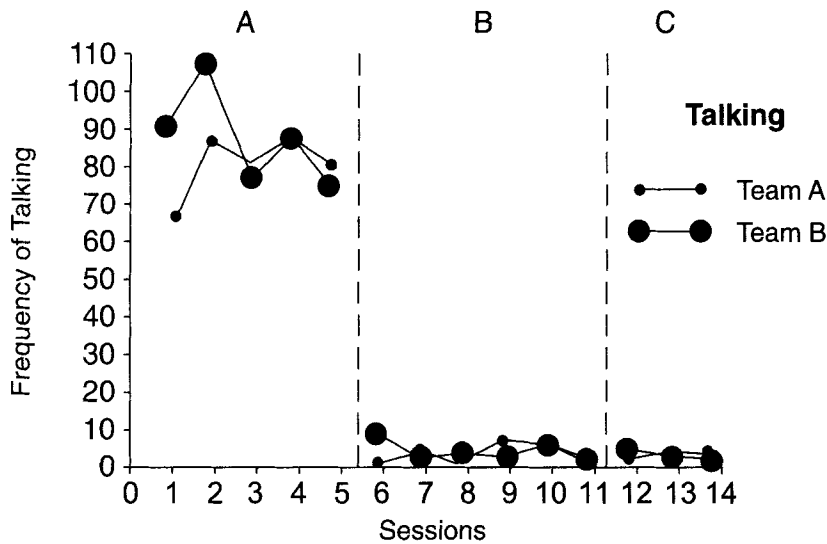
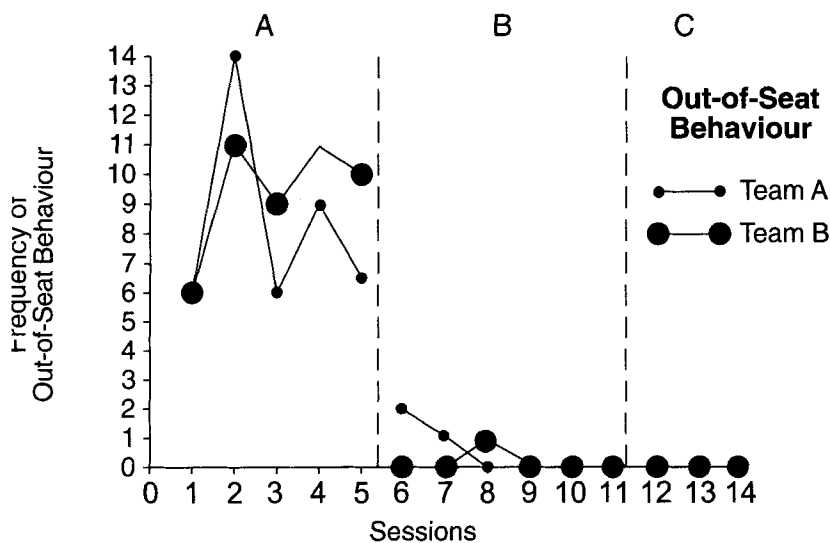**Figure 2. The frequency of out-of-seat behaviour in each session.**

Figure 2 shows the frequency of out-of-seat behaviour across fourteen sessions. During Condition A frequencies varied between six and fourteen for Team A. There was less variability in Team B's scores; they ranged from six to eleven. During the first three games (Sessions 6 to 8) the frequency of out-of-seat behaviour was consistently zero for both teams. Figure 3 shows combined scores for talking and out-of-seat behaviour for each team. Levels of disruptive behaviour during the baseline were high (above 73). In Condition B, the level of disruptive behaviour was low and on each occasion both teams met the 'winning' criteria and earned their reinforcers. In Condition C, the level of disruptive behaviour was even lower and in each of the three sessions both teams received reinforcement as their scores were all below the 'winning' criteria.

Figure 3. The total frequency of disruptive behaviours for each team in each session.
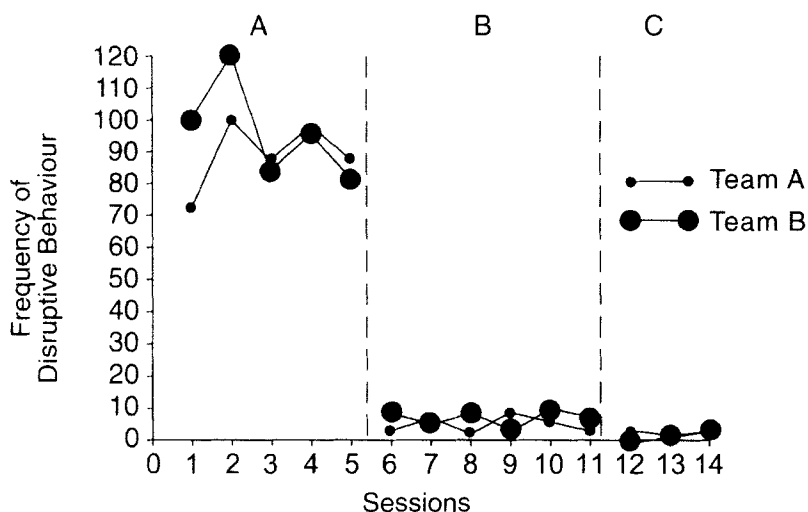
Figure 4. The total frequency of disruptive behaviours for all boys in each session.
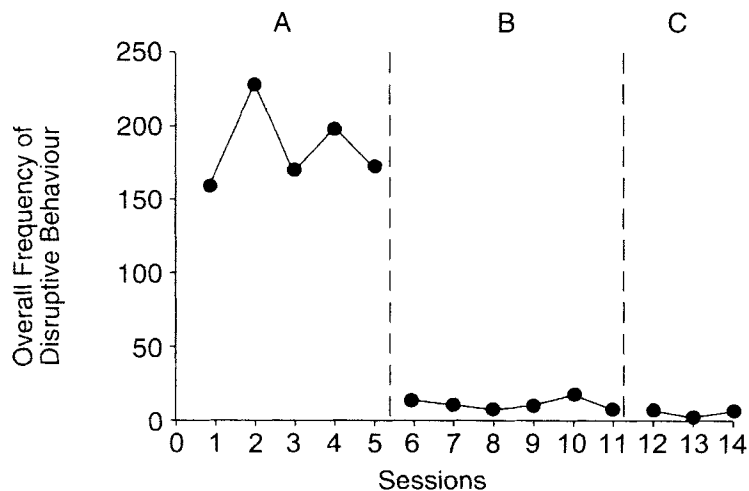
Figure 4 shows the class scores for disruptive behaviour. Scores were high in Condition A, consistently low in Condition B, and consistently low and close to zero in Condition C.

DISCUSSION

The main objectives of this study were to reduce the level of disruptive behaviour and to test the efficacy of the Good Behaviour Game with children labelled as behaviourally disordered. Overall, the procedure proved to be extremely effective. Of particular interest was the finding that the initial criterion was not too demanding. In previous studies the criterion was less stringent initially and reduction of subsequent criteria was in small steps. In the current study the goal of minimal disruptive behaviour was achieved more quickly with no adverse effects. The power of this procedure suggests that teachers could work initially with stringent criteria instead of the more usual gradual decrease.

The success of the procedure had marked effects on the teaching staff. They were most interested in the changes observed in Greg's behaviour. The staff previously thought that Greg was 'unable to control himself'. After the intervention however, they commented, 'now we know he can control himself'. The findings generally have important implications for teacher training in behaviour analysis. The comment mentioned earlier regarding Greg's newly found self-control indicates the extent to which mentalism was rampant in the teachers' appraisal of their pupil's behaviour. In other words, the teachers learned that Greg's behaviour was amenable to change and that their original way of thinking about him was seriously flawed (Skinner, 1976). The game was found to have high social validity and was enthusiastically accepted by pupils and the teacher. The boys told their friends in other classes about the game and we soon received requests from other kids, 'Can we play the game, too?'.

An area that requires further investigation is whether the reduction in disruptive behaviour is accompanied by children working harder. The Harris and Sherman (1973) study found that reductions in disruptive behaviour were correlated with only slightly improved accuracy of academic performance. A study by Ayllon and Roberts (1974) found that reinforcing academic skills such as reading accuracy could decrease the frequency of disruptive behaviour. This technique used in isolation may not have been sufficient to deal with the problem in this study. Allyon and Roberts warn that reinforcement of academic performance may not be a sufficient means of extinguishing disruptive behaviour in underachieving schools as many of the components of academic behaviour must first be shaped. Perhaps the Good Behaviour Game could be combined with a programme to increase academic performance, thereby providing participants with optimal benefits.

Teachers commented that it was 'very adventurous' to introduce the 'winning' criteria at ten marks or less. They were equally sceptical of a successful outcome when the criteria were further reduced. The implication is that teachers require more training and better training in

the methods of behaviour analysis. Cooke (1984) found that behaviour analysis is commonly misrepresented in teacher education material. This is of grave concern as one would expect a high premium to be placed on accuracy in this area (Morris, 1985). Better teacher education would not only lead to reduced disruptive behaviour but it would also improve efficiency in education, making more time available for a greater emphasis on personal exchange between teacher and student. Skinner (1978) said that more efficient practices would mean a vast improvement in the status of the teaching profession so teachers stand to benefit as well as students.

The education of children does not begin in the classroom (cf. Dillenburger and Keenan, 1994; Keenan, Kerr, and Dillenburger, 2000). Parents and peers continuously arrange contingencies for the developing child. Undesirable contingencies to which the pupils in the present study were previously exposed produced an array of problem behaviours. Some even had minor skirmishes with the law for vandalism and petty theft. Bank, Patterson and Reid (1987) viewed such anti-social behaviour as a result of a process through which many boys are trained by their families to behave coercively (Patterson, Dishion and Bank, 1984). Many problems of society such as delinquency and anti-social behaviour, could be tackled effectively if behavioural technology became endemic. Parenting classes can make a significant step towards this objective. Becker (1971) wrote a child management programme designed to teach parents how to teach their children to behave well using behavioural principles. Other researchers have also engaged in parental education programmes based on the behavioural approach. Clinical research at the Oregon Social Learning Center has concentrated on delinquency prevention through training parents in Family Management (Bank, Patterson and Reid, 1987).

In conclusion, the scope in which the Good Behaviour Game procedure is known to be successful was widened by the current study. More generally, behaviour analysis provides a powerful set of techniques that can be used to effectively deal with long standing behavioural problems. In this case, it was clear that traditional methods were obviously ineffective, otherwise the problem would have been dealt with earlier. The study also highlights the need for teacher training colleges and those responsible for parenting classes to embrace the extensive findings and practices of behaviour analysis.

Recommendations:

• Effective techniques for reducing disruptive behaviour should be applied in classrooms as well as other child care settings, such as residential homes or therapy focus groups.

• Parent training should be widely available and focus on teaching parents the principles of behaviour analysis.

• Training in behaviour analysis should be part of qualifying and post-qualifying training for all teachers and child care workers.

- Mentalistic thinking should be exposed and avoided, especially when dealing with children who experience emotional and behavioural difficulties.

REFERENCES

Ayllon, T. and Roberts, M. D. (1974). Eliminating discipline problems by strengthening academic performance. *Journal of Applied Behavior Analysis, 7,* 71-76.

Baldwin, J. D. and Baldwin, J. I. (1981). *Behavior Principles In Everyday Life* (2nd ed). Englewood Cliffs, N.J: Prentice-Hall.

Bank, L., Patterson, G. R., and Reid, J. B. (1987). Delinquency prevention through training parents in Family Management. *The Behavior Analyst,* 10, 75-82.

Barrish, H. H., Saunders, M., and Wolf, M. M. (1969). Good Behavior Game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis,* 2, 119-124.

Baum, W. M. (1994). *Understanding Behaviorism: Science, Behavior, And Culture.* New York: Harper Collins.

Becker, W. C. (1971). *Parents Are Teachers: A Child Management Program.* Champaign, Illinois: Research Press.

Bromfield, R., Bromfield, D., and Weiss, B. (1988). Influence of the sexually abused label on perceptions of a child's failure. *Journal of Education Research,* 82, 96-98.

Cohen, J. (1995). Violent nine-year-olds get minders in the classroom. *The Sunday Times,* January 15.

Cooke, N. L. (1984). Misrepresentation of the behavioral model in preservice teacher education textbooks. In W. L. Heward, T. E. Heron, D. S. Hill, and J. Trap-Porter (Eds). *Focus On Behavior Analysis In Education.* Columbus, O.H.: Merrill.

Cooper, J. O, Heron, T. E., and Heward, W. L. (1987). *Applied Behavior Analysis.* New York: Macmillan.

Dillenburger, K., O'Reilly, M. and Keenan,M. (Eds.) (1997). *Advances in Behaviour Analysis.* Dublin: University College Dublin Press.

Dillenburger, K. and Keenan, M. (1994). Smacking children: The dangers of misguided and outdated applications of psychological principles. *Irish Psychologist,* Jan. 56-58.

Fishbein, J. E. and Wasik, B. H. (1981). Effect of the Good Behavior Game on disruptive library behavior. *Journal of Applied Behavior Analysis,* 14, 89-93.

Grant, L. and Evans, A. (1994). *Principles Of Behavior Analysis.* New York: Harper Collins.

Harris, V. W. and Sherman, J. A. (1973). Use and analysis of the Good Behaviour Game to reduce disruptive classroom behavior. *Journal of Applied Behavior Analysis,* 6, 405.417.

Jensen, R. and Burgess (1997). Mythmaking: How introductory psychology texts present B. F. Skinner's analysis of cognition. *The Psychological Record,* 47, 221-232.

Keenan, M., Kerr, K.J. and Dillenburger, K. (Eds.) (2000). Parent's Education as Autism Therapists. *Applied Behaviour Analysis in Context.* London: Jessica Kingsley.

Morris, E. K. (1985). Public information, dissemination, and behavior analysis. *The Behavior Analyst,* 8, 95-110.

Patterson, G. R., Dishion, T. J. and Bank, L. (1984). Family interaction: A process model of deviancy training. *Aggressive Behavior,* 10, 253-267.

Pryor, K. (1984). *Don't Shoot The Dog! The New Art Of Teaching And Training,* London: Bantam Books.

Saigh, P. A. and Umar, A. M. (1983). The effects of a Good Behavior Game on the disruptive behavior of Sudanese elementary school students. *Journal of Applied Behavior Analysis,* 16, 339-344.

Schwieso, J. and Hastings, N. (1981). The role of theory in the teaching of behaviour modification to teachers. In K. Wheldall (Ed), *The Behaviourist In The Classroom.* Educational Review Offset Publications No. I. Birmingham.

Skinner, B. F. (1968). *The Technology of Teaching.* New York: Appleton Century Crofts.

Skinner, B. F. (1976). *About Behaviorism.* New York: Vintage Books.

Skinner, B. F. (1978). *Reflections On Behaviorism And Society.* Englewood Cliffs, N.J.: Prentice-Hall.

Thomas, D. R., Becker, W. C., and Armstrong, M. (1968). Production and elimination of disruptive classroom behavior by systematically varying teacher's behavior. *Journal of Applied Behavior Analysis,* I, 35-45.