

*The International Journal of Special Education*  
2005, Vol 20, No.2.

## CONSIDERING THE INTRUSIVENESS OF INTERVENTIONS

**Stacy L. Carter**

Mississippi State University

and

**John J. Wheeler**

Tennessee Technological University

*Determining the most appropriate intervention to address student problem behavior may be a difficult dilemma encountered by school psychologists during consultation activities with special education teachers. IDEA (1997) promotes the least restrictive environment and the least intrusive interventions that can be effective. The intrusiveness of assessment and interventions applied to a problem behavior should involve a positive correlation with the severity of problem behavior with more severe problems warranting more intrusive interventions. This matching of more intrusive interventions to more severe problem behaviors may not be representative of actual practice in education. This type of relationship also infers that more intrusive interventions warrant more extensive assessment procedures although conceptually, more extensive assessments should lead to less intrusive interventions. The ethical issues associated with the intrusiveness of assessment and intervention procedures are discussed within the context of ensuring the least intrusive intervention. Some issues of intrusive interventions to be discussed are the nature and occurrence of the problem behavior, previous interventions attempted, justification of proposed treatments, implementation of proposed treatments, and methods of monitoring and assessing intrusive interventions.*

Jacob-Timm and Hartshore (1998) report that there is some consensus in the literature regarding procedures that are more or less acceptable and similarly more or less intrusive. Intrusiveness of an intervention as described in this document will refer to the level of social acceptability of an intervention as well as the degree to which counter-control is maintained. Alberto and Troutman (1990) describe a hierarchy of procedures for behavior reduction. This hierarchy begins with Level I procedures which are considered to be the most socially acceptable while maintaining the highest amount of counter control for the participant (i.e., least intrusive). The hierarchy progresses to Level IV procedures, which are attributed with the least social acceptance and the lowest degree of counter control (i.e., most intrusive). Interventions included in Level I are differential reinforcement of alternative behaviours (DRA), differential reinforcement of other behaviours (DRO), differential reinforcement of low rates of behavior (DRL), and differential reinforcement of incompatible behaviours (DRI). Level II interventions include extinction procedures which involve terminating reinforcement that was previously available to the student. Level III interventions include response-cost procedures (removing specific amounts of reinforcement contingent on problem behavior) and time-out procedures (denying a student the opportunity to receive reinforcement for a fixed period of time). Level IV interventions (i.e. most intrusive) include unconditioned aversive stimuli presentation of stimuli which causes pain such as paddling or electric shock upon the occurrence of a problem behavior), conditioned aversive stimuli (presentation of a stimuli such as verbal warnings or yelling that have been previously associated with pain following the occurrence of a problem behavior), and overcorrection procedures (exaggerated or extended practice of an appropriate behavior following occurrence of a problem behavior). This hierarchy of interventions developed within the field of applied

behavior analysis may be important to the field of school psychology when conducting behavioural consultations. School psychologists may benefit from an understanding of the levels of intrusiveness of interventions recognized within the field of applied behavior analysis and promote the least intrusive but effective interventions for students displaying problem behaviours.

Bijou (1970) recommended four functions that a oriented-oriented school psychologist could serve within a school setting. The first function involves assisting with smooth transitions from home for kindergarten and first grade children. The second function involves working other school personnel and parents in eliminating problem behaviours using sound teaching principles. The third function involves directly assessing and arranging contingencies for individual or groups of students. The fourth function involves providing in-service training for teacher's assistants. Bijou did not specifically mention the need for supporting the least intrusive intervention for students, but this is a key aspect of the systematic application of behavioural principles. The implementation of the least intrusive intervention that is likely to be effective is an ethical guideline recognized within the area of applied behavior analysis (Shook, 2002). Recent progress has been made in the applied behavior analysis literature with regards to least intrusive procedures that could be beneficial for application within the field of education.

Jacob-Timm (1999) gathered information on the types of ethical dilemmas that school psychologists deal with on a day-to-day basis. Her purpose was to identify areas of concern to practitioners, to provide case incidents to be used in ethics education, and to give direction to future research. A survey was sent to 1,035 members of NASP asking them to *describe, in a few words or more detail, an ethical incident that you or a colleague have faced in the past two years that was ethically challenging or troubling to you*. Although her data were not sufficient for providing an estimate of frequency of these ethical dilemmas as might occur in school psychology practice (226 replied = return rate of 22%), the frequency of intervention-related ethical dilemmas (2%) was not considered frequent compared to overall rates of dilemmas. This may indicate that actual application of interventions reported within the sample can be considered to have appropriate levels of intrusiveness. Another possibility is that the informants were not considering levels of intrusiveness of interventions.

The ethical guidelines outlined by the National Association of School Psychologists (NASP) regarding service provision require that the school psychologist select assessment methods that are validated for the problem area under consideration and implement interventions that are effective, based upon data collected, and relate to the referral question and desired outcomes of the intervention (NASP, 1984). The ethical guidelines of the Behavior Analysis Certification Board (BACB) state that practitioners should use the least intrusive and least risky behavioural assessment methods to obtain only the information necessary and sufficient to formulate reasonable hypotheses, and interventions should use the least intrusive procedure that is likely to be effective, efficient, and produce the minimum unwanted effects (Shook, 2002). Interestingly, the NASP ethical guidelines regarding interventions does not stress the use of the least intrusive intervention that is likely to be effective as do the ethical guidelines of the BACB. The difference between these ethical guidelines may not appear to be significant, but the actual application may produce very different results. By neglecting the concept of the least intrusive intervention, the ethical guidelines of NASP are remiss in that they do not promote a movement toward development of interventions that respect the rights of the consumer to unnecessary procedures or overly intrusive interventions. Some of the areas to be considered when evaluating the intrusiveness of an intervention include the nature and occurrence of the problem behavior, previous interventions attempted, justification of interventions, and monitoring procedures.

#### *Nature and Occurrence of Problem Behavior*

With the incorporation of functional behavioural assessment into special education law and requirements regarding manifestation determinations (IDEA, 1997), the nature of problem

behavior is an area which must be addressed by school psychologists when consulting with special education teachers. The following example demonstrates how the nature of a problem could result in different types of interventions with different levels of intrusiveness.

*Shannon is a 9-year-old female who is nonverbal and has been diagnosed with severe mental retardation. Shannon has recently begun spitting and her classroom teacher has implemented a procedure that involved praising Shannon when she was not spitting and ignoring her when she was spitting. Upon evaluating the effectiveness of this procedure the teacher determined that the procedures were ineffective and added an overcorrection procedure that involved having Shannon spend at least 5 minutes cleaning the area impacted by her spitting. The teacher then evaluated the effectiveness of the program and determined that it was ineffective. The teacher then asked the school psychologist for recommendations to help reduce Shannon's spitting. The school psychologist conducted a functional behavioural assessment and determined that the nature of Shannon's spitting appeared to be one of sensory stimulation or pain attenuation. The school psychologist recommended that Shannon have a medical evaluation. The medical evaluation revealed that Shannon was experiencing gastro esophageal reflux disease and the physician prescribed an antacid. Once the antacid was prescribed on a regular basis the teacher noticed that Shannon completely stopped spitting.*

The example of Shannon's spitting is one where determining the nature of the problem behavior made a difference in the type of intervention that was implemented and effected the level of intrusiveness of the intervention. Numerous studies have demonstrated functional assessment procedures as a component of developing effective, least intrusive procedures across multiple topographies of behaviours (e.g., Hagopian, Fisher, Sullivan, Acquisto, & LeBlanc, 1998; Iwata, Pace, Dorsey, et al., 1994). The use of functional behavioural assessment assists in the identification of the source or sources of reinforcement for a problem behavior. Functional behavioural assessments involve collecting information on variables that predict and maintain the occurrence of problem behavior in order to develop effective interventions (O'Neill et al., 1997). The benefits of functional behavioural assessment may be conceptualised in at least three ways. The first involves increasing the potential effectiveness of an intervention by avoiding a competing schedule of reinforcement between a problem behavior and an alternative or replacement behavior. The second benefit might fall into the ethical category of providing the least intrusive intervention, which could only be done when an accurate assessment had taken place. The third benefit might be considered a legal aspect of ensuring the right of substantive due process by providing a replacement behavior instead of just suppressing the problem behavior.

The occurrence of problem behavior may be determined in many ways and the relevance of occurrence to the intrusiveness of interventions may be directly related to the amount of training recommended for an intervention. When occurrence of problem behavior is high then the intervention that is prescribed may warrant more frequent action on the part of the implementer. The following is an example of how occurrence or frequency of problem behavior might impact an intervention.

*Michael and Janie both display the problem behavior of leaving their assigned area without permission and the classroom teacher asks the school psychologist for recommendations to reduce this behavior. The school psychologist collects data on the occurrence of the behavior and determines that Michael leaves his assigned area an average of one time every minute and Janie leaves her assigned area one time every 5 minutes. The school psychologist recommends that the teacher praise Michael for staying in his assigned area once every 30 seconds and praise Janie for staying in her assigned area once every 3 minutes.*

In the example of Michael and Janie, the frequency of the problem behavior was used to determine the schedule of reinforcement needed to enhance efficacy in reducing these

behaviours. Another example of how frequency of problem behavior may impact an intervention follows:

*Bert and Alice both engage in the problem behavior of slapping other students. The classroom teacher asks the school psychologist for recommendations to reduce this behavior. The school psychologist collects data on the occurrence of the behavior and determines that Bert slaps other students an average of once every 5 minutes and Alice slaps other students an average of once every 25 minutes. The school psychologist recommends that the teacher use a time-out procedure for 1 minute with Bert following each occurrence of slapping. The school psychologist also recommends that the teacher use a time-out procedure for 5 minutes with Alice following each occurrence of slapping.*

The example of Bert and Alice, illustrates a situation where both students may potentially receive the same amount of time-out, but the experience for each student might be qualitatively different. Both of the examples provided are intended to illustrate how the frequency of problem behavior may have an impact on how even the same interventions may influence the intrusiveness of an intervention.

#### *Previous Interventions Attempted*

*Logan was an eight-year-old boy who was nonverbal and had been diagnosed with autism. Logan engaged in self-injurious behavior that was determined to be maintained by escape from school-related work tasks. His teacher designed an intervention that slowly introduced a systematic work system that clearly identified very brief work requirements and a preferred activity that would follow. Logan initially could only complete very brief tasks with no self-injury, his teacher worked diligently on increasing his time on task and by the end of the school year Logan could complete three school work related tasks of moderate length with no self-injury before receiving his preferred activity. The next school year Logan transferred to another school and immediately began engaging in self-injury whenever school work related activities were presented to him. His new teacher, knowing that the self-injury was maintained by escape from tasks, designed an intervention that consisted of a compliance training procedure that involved physical guidance and escape extinction (not allowing Logan to quit the task until finished) for school work related activities. The procedure initially produced increases in self-injury along with some physically aggressive behavior, but the teacher was diligent in the implementation of the procedures and after several repeated sessions, the teacher began to notice that Logan was beginning to demonstrate an increase in independent work related activity.*

This example of Logan attempts to illustrate how knowledge of previous treatments could influence the level of intrusiveness of an intervention. The procedures used by both of Logan's teachers were deemed effective and could be considered appropriate interventions based upon the function of the behavior. The impact that previous attempts at treatment could have on the level of intrusiveness may not always be clearly evident, as was the case in the example of Logan where each intervention that was implemented to address the self-injurious behavior could be considered appropriate. It is only when the interventions used by the different teachers are compared that the issue of intrusiveness becomes more evidently different. Another aspect of previous intervention attempts relates to the justification of procedures determined to be necessary and will be discussed in the next section.

#### *Justification of Interventions*

More intrusive interventions may be justified by reviewing the previous attempts at treatment. If a student has a history of behavior that has been treated using several non-intrusive procedures with little effectiveness even with rigorous implementation of the procedures, more intrusive procedures could be warranted. Other factors including additional assessment would also need to be considered to ensure that the function of the behavior has been clearly identified before more intrusive procedures could be justified.

*Johnny is a 12-year-old boy who frequently engages in behaviours such as running around his classroom, teasing/fighting with other students, and speaking out at inappropriate times. These behaviours are disruptive to other students in his classroom and prevent him and other students from completing classroom assignments. His teacher has told him repeatedly what her expectations are of him, has attempted to praise him for remaining on-task, has kept him from participating in preferred activities when he was especially disruptive, and has established a token economy for her entire class that offers students the opportunity to exchange tokens awarded at a classroom store that she has developed. The teacher upon evaluating the effectiveness of her multiple interventions concludes that the interventions are ineffective. The teacher then tells Johnny that the next time he disrupts her class, she will immediately take him into the hallway and apply three strikes with her paddle to his buttocks.*

The justification of interventions, especially those involving intrusive procedures should minimally include an accurate assessment of the maintaining variables associated with the behavior, an evaluation of the severity of the problem behavior including potential harm to self or others, and a risk versus benefit analysis of specific procedures to reduce the problem behavior.

*Ella was 12-year-old girl diagnosed with profound mental retardation who engaged in frequent hand mouthing behavior that resulted in some tissue maceration primarily to her thumb which she repeatedly moved in and out of her mouth. She had a history of several ineffective treatments to address the hand mouthing behavior such as verbal reprimands for placing her thumb in her mouth, differential reinforcement for having hands away from mouth or for manipulating other objects, contingent use of mitts that were placed on her hands and prevented her from hand mouthing, and periods of using elbow splints contingent upon hand mouthing. Her IEP team met to discuss the ineffectiveness of her current treatment procedures and concerns from her physician regarding the increased risk of infection to her thumb because of the continual saliva and skin deterioration on her thumb. The IEP team reviewed the numerous assessments that had been conducted and clearly indicated that her hand mouthing was maintained by sensory reinforcement. The team decided to implement a punishment procedure using a device that would be attached to her hand and would produce an electric shock each time she touched her hand to her mouth.*

The conceptual relationship between the severity of a problem behavior and the specific treatment implemented to address the behavior can be a problem that is encountered by school psychologists during consultation activities. The intrusiveness of assessment and interventions applied to a problem behavior should involve a positive correlation with the severity of problem behavior so that the more severe the problem behavior the more justification there is for more intrusive interventions. Justification of the use of some intervention procedures should possibly include review by a committee that can objectively consider human rights issues, especially for interventions that involve procedures that could inflict pain on an individual, although the use of student paddling involves the use of pain to reduce a problem behavior and typically human rights committees are not involved on any individual level.

#### *Monitoring and Assessing Interventions*

The level of intrusiveness of interventions should involve methods of monitoring and assessing the effectiveness of these interventions that are precise enough to determine progress quickly and make modifications within a reasonable amount of time. A plan that has highly intrusive procedures should also have methods of monitoring and assessing that are equally intrusive to allow for immediate modifications. The possibility for misapplication of some procedures may not result in significant consequences and in some cases may have no effect at all, but for some highly intrusive procedures the results of misapplication of procedures could lead to disastrous results.

### Summary

The field of school psychology could possibly benefit from the incorporation of some of the ethical and procedural components addressed by the field of behavior analysis. As Bijou (1970) suggested the field of behavior analysis has several strategies that could be beneficial to school psychology and since Bijou outlined those potential benefits even more progress has been made especially in the area of functional behavioural assessment.

The types of interventions that are available for school psychologists to choose from may inherently involve more intrusive procedures to achieve desired effectiveness. Grace, Kahng, and Fisher (1994) demonstrated that punishment procedures were only effective when implemented with both severe forms of destructive behavior and with less severe forms of destructive behavior. Punishment may be a necessary component of an intervention when the maintaining variables of a behavior cannot be controlled for or cannot be identified (Iwata, Vollmer, & Zarcone, 1990) or may be preferred when problem behavior must be suppressed rapidly to prevent serious physical harm (Dura, 1991). School psychologists should be aware of the implications of intrusiveness associated with intervention procedures such as punishment and be capable of distinguishing the levels of intrusiveness involved with various types of interventions.

At present, the ethical guidelines of NASP appear to address the issue of intervention intrusiveness in an indirect manner without specifically stating the relevance of least intrusiveness when designing interventions. The ethical guidelines of the BACB appear to more clearly specify consideration of the least intrusive intervention as a component step in the design and implementation of intervention. The differences in ethical guidelines may not appear to be substantial on the surface although the application of these principles could result in some critical differences with regard to the individual students receiving services. This difference in focus among these two ethical guidelines may be an effect of the emphasis of school psychology training programs of which only eight of 89 doctoral programs in the United States have a subspecialisation area in applied behavior analysis (Fagan & Wise, 2000). If future reauthorisation's of IDEA continue to indicate the use of functional behavioural assessment and positive behavior interventions and supports, the prevalence of behavior interventions would presumably increase and create a need for more specific ethical guidelines regarding the development and implementation of interventions by school psychologists.

### References

- Alberto, P. A. & Troutman, A. C. (1990). *Applied behavior analysis for teachers* (4<sup>th</sup> ed.). Englewood Cliffs, NJ: Merrill.
- Bijou, S. W. (1970). What psychology has to offer education-now. *Journal of Applied Behavior Analysis*, 3, 65-71.
- Dura, J. R. (1991). Controlling extremely dangerous aggressive outbursts when functional analysis fails. *Psychological Reports*, 69, 451-459.
- Fagan, T. K. & Wise, P. S. (2000). *School Psychology: Past, present, and future*. (2<sup>nd</sup> ed.). Bethesda, MD: National Association of School Psychologists.
- Grace, N. C., Kahng, S., & Fisher, W. W. (1994). Balancing social acceptability with treatment effectiveness of an intrusive procedure: A case report. *Journal of Applied Behavior Analysis*, 27, 171-172.
- Hagopian, L. P., Fisher, W. W., Sullivan, M. T., Acquisto, J., & LeBlanc, L. A. (1998). Effectiveness of functional communication training with and without extinction and punishment: A summary of 21 inpatient cases. *Journal of Applied Behavior Analysis*, 31, 211-235.
- Iwata, B. A., Pace, G. M., Dorsey, M. F., Zarcone, J. R., Vollmer, T. R., Smith, R. G., Rodgers, T. A., Lerman, D. C., Shore, B. A., Mazaleski, J. L., Goh, H.-L., Cowdery, G. E., Kalsher, M. J., McCosh, K. C., & Willis, K. D. (1994). The functions of self-injurious behavior: An experimental-epidemiological analysis. *Journal of Applied Behavior Analysis*, 27, 215-240.
- Iwata, B. A., Vollmer, T. R., & Zarcone, J. R. (1990). The experimental (functional) analysis of behavior disorders: Methodology, applications, and limitations. In A. C. Repp & N. N. Singh

- (Eds.), *Perspectives on the use of nonaversive and aversive interventions for persons with developmental disabilities* (pp. 301-330). Sycamore, IL: Sycamore.
- Jacob-Timm, S. (1999). Ethically challenging situations encountered by school psychologists. *Psychology in the Schools*, 36, 205 – 217.
- Jacob-Timm & Hartshorne, T. S. (1998). *Ethics and law for school psychologists* (3<sup>rd</sup> ed.). New York, NY: John Wiley & Sons Inc.
- National Association of School Psychologists. (1984). *Principles of professional ethics*. Washington, DC: Author.
- O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Story, K., & Newton, J. S. (1997). *Functional assessment and program development for problem behavior*. Pacific Grove, CA: Brooks/Cole Publishing Company.
- Shook, G. L. (2002). Behavior Analyst Certification Board, Tallahassee, Florida. [www.bacb.com](http://www.bacb.com)