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by Tamar Bomzer

Behavior Therapy and The Autistic Child

Autism is a developmental disability and a behavioral syndrome. Donna Williams, an autistic woman, in her autobiography described it as a malfunction of the mechanism which causes emotion. Autism affects approximately four out of every 10,000 babies, and is found predominately in males. Autism was first recorded by Leo Kanner in his seminal paper in 1943. Since then, there has been an extensive amount of research conducted on the topic. According to the National Society for Autistic Children, autism involves a delay in the developmental rates or sequences of either motor, social-adaptive or cognitive pathways. Fine or gross motor skills may be severely affected. Furthermore, there is a disturbance in response to sensory stimuli. This can manifest itself within the visual, auditory, tactile, vestibular, olfactory, gustatory, and proprioceptive levels. For example, the child may appear to stare into space, or focus intently upon one object. In many cases, these children exhibit stimulus overselectivity – responding to an overly restricted range of cues in the environment (Schreibman 1994). Preoccupation with spinning objects is common. The child may be obsessed with rubbing or licking the surfaces of objects. In addition, there is a disturbance of speech, language-cognition, and nonverbal communication. Many autistic children are mute, or severely deficient in their ability to express themselves. Often, autistic children will exhibit echolalia, mimicking everything that is said to them in a parrot like fashion. Finally, there is a deficiency in the ability to appropriately relate to people, events, and objects. Autistic children do not form emotional attachments, and can not understand the give and take of normal relationships.

There are many pragmatic problems which are associated with autism. These symptoms usually manifest themselves by age three. Moodiness and

laughter without identifiable stimuli are common. There have also been reports of delusions and hallucinations. The child frequently engages in self injurious behavior which, in extreme cases, can be life threatening. Stereotypic and repetitive movements of limbs or the entire body are typically exhibited. When these children do communicate with others, they often fail to shift appropriately from one topic to the next. Donna Williams describes her need to dominate the conversation on those occasions where she felt the necessity to speak. Inappropriate affect, facial expression and gestures are also symptoms of this disability.

The etiology of this syndrome is not yet known. At one point, researchers such as Buttleheim (1967) thought that autism was caused by neglectful and abusive parenting. Recent research has disproved this theory, and autism is now thought to be the result of an injury to, or dysfunction of, the central nervous system.

Modes of Treatment

Because autism is a severely incapacitating syndrome, most autistics require periodic medical, neurological, psychological, educational and behavioral reassessment. A number of different approaches have been proposed to treat this disorder. In recent years Behavior therapy has become the dominant approach. Empirical data has shown it to be effective. From a behaviorist point of view, autism is a syndrome which manifests itself in two types of atypical behaviors, excesses and deficits. Excesses are those behaviors which occur too frequently or intensely, such as self-injurious or self-stimulating behaviors. Deficits are those behaviors which are lacking or are very weak, as in language and social skills. The environment of the child plays a major role in controlling these behaviors. In most cases, many of the actions deemed abnormal by society are stress releasers for the autistic child.

When assessing a child for treatment, clinicians must look at the

antecedents as well as the consequences. This model is sometimes referred to as the ABC (Antecedent-Behavior-Consequence) pattern of behavior. Once the observation is made, the clinician must verify his hypothetical assessment by manipulating different variables and observing the effects on the behavior. Assessments for treatment must be made on an individual basis since each case is different.

Behavioral therapy is based upon the principles of learning. Watson believed that studies of behavior modification are studies of learning with a particular intent. For the most part, therapists utilize those principles which strengthen operant behavior. One can focus either on the antecedents or the consequences of the specific behavior and manipulate them to achieve the desired results.

Conditioning:

Two of the most common techniques used to manipulate consequences, are positive and negative reinforcement. A therapist provides positive reinforcement by following the desired operant behavior with a reward such as a candy. According to the law of effect, any behavior which is followed by a positive consequence will tend to be repeated. An experiment done by Lovaas, Berberich, Perloff, and Schaeffer (1966) demonstrated that it was possible to teach two mute, autistic children initiative speech by giving them a reward contingent upon imitation. In this way, it is also possible to condition a child to react in a more appropriate manner in anxiety provoking situations. Negative reinforcement is provided by following the operant behavior by avoidance of a negative event. For example, if the child does not want to do what is being asked of him and begins to engage in self injurious behavior (SIB), the demands are usually rescinded, thereby strengthening the SIB. In cases where the desired operant response is unknown to the child, the therapist may prompt or assist the child in making the right response. For example, the therapist may exaggerate the size of the correct stimulus in a discrimination task.

Shaping:

Shaping is a procedure in which the child is rewarded for successive approximations to the target response until the desired response is established. In cases where the target behavior is complex, it can be broken down into smaller steps which are taught one by one in order. This process is known as chaining and can be taught either in the forward or backward direction. Individuals with autism may have difficulty acquiring lengthy response chains. Prompts may be needed to initiate responses at different points along the way. Some investigators have used visual cues (such as photographs) to aid in the acquisition of complex chains. A study conducted by MacDuff, Krantz and McClannahan (1993) at the Princeton Child Development Institute, examined the effects of photographic activity schedules, taught with graduated guidance, on the acquisition, maintenance and generalization of complex response chains. Four autistic boys ages 9-14 were taught to follow photographic activity schedules depicting leisure and homework activities. "On-task" was recorded if the child visually attended or manipulated the play or work materials appropriately. If, at the same time, the child was looking at the right picture then "on-schedule" was also scored. After the initial teaching, the photographs were then resequenced. Subsequently, two of the activities were replaced with two similar but novel leisure activities. The results show that the photograph-activity-schedule produced sustained engagement. The children's schedule following skills generalized to novel photographs and materials with no additional training. In this way, therapists were able to develop new behaviors which were previously lacking in the subject population.

Extinction:

In order to decrease those responses which are inappropriate, different techniques have been developed. Many autistic children throw tantrums or engage in SIB to get attention. These negative behaviors are usually effective

in capturing the attention of authority figures. Using the method of extinction, the parents ignore the child, thus reducing those behaviors which are undesirable. In this procedure, a behavior (SIB) which was previously rewarded (getting attention) is no longer followed by the positive reinforcement. Initially there is an increase in the undesirable behavior but gradually it disappears. If, however, the undesirable behavior is extremely detrimental to the child's well being, punishments are used to achieve faster results. The punishment can be anything that the child does not like. In some cases, even a hug or candy can serve as an aversive stimulus. At times, however, even physical pain has been inflicted to eliminate a self-injurious behavior. One example of this method of therapy is discussed in the Lovaas and Simmons (1969) study, cited by Schreibman (1994), where a brief electric shock was administered to deter SIB. This issue has been the subject of much ethical debates in recent years. The policy adopted by many therapists is that whenever possible, mild or non-aversive procedures should be used. They argue that punishment does not eliminate the behavior, but rather, it serves only as a suppressant. The child must then be taught a replacement behavior in order for the suppression to be maintained. Punishment by withdrawal and time-out procedures involve the contingent removal of positive reinforcers. When the child acts out they are either removed from a positive situation or they lose an otherwise available positive reinforcer.

Antecedent Manipulation:

In some cases it is more efficient to manipulate the antecedents in order to achieve the desired results. The antecedents to certain behaviors serve as discriminative stimuli which control the responses. Researchers have shown that by controlling the antecedents, SIB can be reduced (Carr, Newsom, Binkoff, 1976). Often, autistic children are simply not motivated to respond to requests. Investigators have attempted to devise a technique that would remedy such a circumstance. These innovative methods aim to

increase the probability of compliance, decrease stereotypic behavior and, thus, decrease self injury. In the study conducted by Davis, Brady, Williams, and Hamilton (1992), high probability requests were provided as an antecedent to delivering a low probability request. A mentally retarded autistic boy participated in the experiment. Appropriate responses to low probability requests were recorded. Requests such as touch your head, eyes, etc. were considered high probability requests, while commands such as stand up or sit down were considered to be low probability requests. The results show an increase in the response to the low probability requests. In theory, the delivery of the high probability request should increase the response rate and the reinforcement rate, creating a momentum which should then carry over to tasks with a low probability of performance. Another study conducted by Houlihan et al. (1994) in fact produced these same results. These results lend support for non-aversive antecedent procedures as a method of increasing responses in autistic children.

Weaknesses and Solutions

One of the major setbacks that behavioral therapists face in dealing with autistic children is their inability to generalize. For example, if autistic children are taught an appropriate behavior in one situation, when placed under different circumstances they often revert back to the undesired behavior. This signifies a lack of ability to show stimulus generalization. They also have difficulty with response generalization. This becomes evident when the child learns a specific behavior but does not generalize it to another related situation. Problems with temporal generalization become apparent when the child no longer exhibits the behavior after a certain period of time has elapsed. Children who have been taught to play with toys (as well as other functional skills) often do not exhibit these skills spontaneously. Researchers such as Billingsly and Romer (1983) have suggested that this might be due to a lack of transfer of stimulus control from prompts embedded in the training session to naturally occurring stimuli.

In order to overcome these difficulties, therapists sometimes use intermittent schedules of reinforcement. In this way, the environment that is created is similar to that of the child's natural environment where behaviors are rarely reinforced on a continuous basis. The behavior may initially be taught using continuous reinforcement and then gradually shifted to an intermittent schedule which enhances stimulus generalization. Recently, researchers have begun to investigate the reason behind disruptive behaviors in an effort to explain this inability to generalize. One theory suggests that behavior problems are a form of primitive communication. In her autobiography, Donna Williams explains that her atypical gestures were a means of communicating with the "outside world". It was her way of expressing those things which she could not express verbally. At the end of her book she lists different behaviors and explains what they accomplished for her. For example, blinking compulsively was a way to slow things down and make them seem detached and, therefore, less threatening. By dropping things repetitively, she sought to prove that an escape to freedom was possible. To Williams, this was a symbol that she was free to feel emotion without pain. Head banging was a way to release tension. In fact, studies have shown that autistic behaviors are functionally related to anxiety and stress in people who have not developed appropriate coping mechanisms (Gordon, Cautela, Prince, Berryman 1994). For autistic people, seemingly insignificant stimuli can set off a panic attack. Loud noises such as sirens, vacuum cleaners and barking dogs elicit intense fear responses. This may also explain the autistic's need to maintain sameness, since any change in the environment produces high levels of anxiety. The Gordon et al. (1994) study proposed that maladaptive behavior is frequently precipitated by stressful events. SIB and self-stimulatory behavior also appear to be anxiety related. It is necessary for clinicians to teach the child more effective ways to cope with stress. Some researchers suggest using positive reinforcement of alternative behaviors, covert conditioning and stimulus change. Relaxation techniques, such as taking deep breaths, are also taught in order to help reduce stress.

Conclusion

Autism is a very complex disorder which disrupts the emotional, physical and social aspects of a child's life. Autistic children have great difficulty functioning in a normal society. It seems as though they live in a world all their own. Behavior modification aims to help bring these children out of "their world" into ours. This type of therapy has gained much popularity because it achieves tangible results. Based upon the principles of classical and operant conditioning, techniques such as reinforcement, shaping and chaining have been used to initiate behaviors absent in the autistic child. Through the processes of extinction, punishment and manipulation of antecedents, therapists are able to decrease inappropriate behaviors. Autistic children are also taught ways to modify their coping mechanisms, enabling them to deal with the stressful demands of every day life. Although we have acquired a vast amount of knowledge over the last century, much remains to be discovered. There is hope, however, that with future experimentation, new methods will be devised to help solve the behavioral problems of autistic children.

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by Joanna Raby

The Controversial Use of Anatomically Detailed Dolls in the Assessment of Child Sexual Abuse

Abstract

Anatomically detailed (AD) dolls are a commonly used but controversial tool in the assessment of child sexual abuse. This paper examines the common uses of the dolls by professionals, typical reactions to the dolls by both abused and non-abused children, memory and suggestibility issues as they relate to the use of the dolls, as well as questions regarding the validity of the dolls as a diagnostic tool. Suggested guidelines for use of the dolls, as well as future research suggestions are provided.

Anatomically detailed (AD) dolls have become standard tools in the assessment of child sexual abuse. The use of AD dolls has grown especially popular in interviews with young children whose language skills are not fully developed (Kendall-Tackett & Watson, 1992; Boat & Everson, 1994). The dolls are thought to provide the child with a medium through which s/he can demonstrate events that are difficult to express verbally. In younger children, particularly those under age five, interviewers tend to rely on the dolls to provide memory cues, facilitate reenactment of events, and name body parts (Kendall-Tackett & Watson, 1992). Because their young age limits their ability to recount events verbally, it seems reasonable to predict that the dolls would be a particularly useful tool for this age group.

In recent years, however, many questions have been raised as to the validity of AD doll use. There have been two primary challenges to the use of AD dolls. First, researchers have suggested that the dolls do *not*

Joanna Raby

facilitate children's reporting of sexual abuse. Secondly, they fear that the dolls may in fact stimulate behavior and statements in non-abused children which could be wrongly interpreted as signs of abuse.

Those researchers who oppose the use of AD dolls in assessment interviews base their opposition on several factors. First, many of these researchers consider children to be highly suggestible and prone to sexual fantasy (e.g., Ceci & Bruck, 1994). Others have argued that the genitalia of the dolls are distorted, and thus call undue attention to their sexual nature (Bays, 1990). The researchers have argued that the combination of these two factors may elicit behavior and statements from non-abused children which could be misinterpreted by evaluators as indicators of abuse. These objections become particularly pertinent when the potential ramifications of false reports are considered. Accuracy in assessing possible abuse has important implications both morally and legally.

In the attempt to resolve the Anatomical Doll controversy, researchers have addressed a wide variety of questions. They include the following: Which professionals are most likely to use AD dolls, and what training do they have? How are the dolls used within the assessment process? What is normative behavior with the dolls for non-abused children? And finally, does the use of the dolls facilitate, or contaminate, accurate reporting of abuse?

Professional Use of AD Dolls

Several studies have investigated the use of AD dolls by a variety of professionals. The professionals who use the dolls in clinical inquiry include law enforcement professionals, mental health workers, child protection workers, victim advocates, and physicians (Kendall-Tackett, 1992; Kendall-Tackett & Watson, 1992; Realmuto & Wescoe, 1992). As a result of this diversity, there seems to be little uniformity in either the usage of the dolls or in the training received by the many professionals. Thus, many concerns

have been raised regarding the manner in which the dolls are used within the clinical interview.

The first concern is based on the lack of established protocol for the use of AD dolls. A 1988 survey of child abuse professionals, conducted by Boat and Everson, examined the various procedures employed by evaluators of child sexual abuse. Four different groups of professionals who work with children suspected of abuse were sent questionnaires. Startlingly, they found that only 15% were following any sort of standard protocol. This and other concerns raised by the Boat and Everson study spawned a series of inquiries into how the dolls were in fact being used in various professional settings. The questionnaire, however, which was to be self-administered, achieved only a 43% completion rate. This low completion rate may have weakened the representativeness of their sample. Building upon the Boat and Everson study, Kendall-Tackett and Watson (1992) sought to correct for the limitations of the previous study, thus establishing more representative results.

Kendall-Tackett and Watson's results indicated a much more homogeneous use of the dolls among the 201 Boston-area professionals they interviewed. Although mental health workers were more likely to use the dolls than were law enforcement officers, both groups reported significantly higher levels of training and uniformity of usage than did those professionals interviewed by Boat and Everson (1988). The one significant limitation of the Kendall-Tackett and Watson study was the limited geographic region of their sample. Future research should seek to replicate their study using a more geographically diverse sample.

Training: Of those professionals who reported using the dolls, 38.5% had 1-3 years of experience, and 58.8% had been using the dolls for 4 years or more (Kendall-Tackett & Watson, 1992). These results strongly contradict the findings of Boat and Everson (1988). Furthermore, the Kendall-Tackett and Watson study found that 96.6% of the professionals

had received some training with the dolls, and that 77.8% followed some standard protocol. These results would seem to resolve those objections regarding training and protocol raised in reaction to the 1988 Boat and Everson study.

Presentation of dolls to children: Relative agreement was also found among professionals as to how the dolls should be presented to children. Kendall-Tackett and Watson (1992) found that, contrary to popular opinion, 98.6% of the professionals they interviewed present the dolls to the children fully clothed. In addition, 64% present the dolls amid other toys.

Uses of the dolls: Kendall-Tackett and Watson (1992) inquired into three specific uses of the dolls in clinical interviews. They explored use of the dolls as an anatomical model for the naming of body parts, to demonstrate past experiences, and to observe the child in free-play with the dolls. Most researchers concur regarding the use of the dolls to establish the child's knowledge of, and names for, body parts. Opposition has been voiced, however, regarding the use of the dolls both as a memory stimulus or even simply in free-play.

Objections concerning its use as a memory stimulus are based on two specific issues. First, a lack of normative data on non-abused children's interactions with the dolls makes it difficult to determine whether the dolls constitute a neutral memory stimulus (Dawson et al., 1992). This lack of normative data for non-abused children also accounts for speculation regarding use of the dolls even in free-play. Secondly, age may be a primary factor in the suggestibility of children's memories (Bruck, Ceci, Fancoeur & Renick, 1995). Each of these objections will be addressed in greater depth in later sections.

Another possible use of the dolls which has received universal objection is as a projective/diagnostic test. Although the dolls may be used for a variety of purposes, they meet none of the requirements of a psychological test (Koocher, Goodman, White, Friedrich, Sivan & Reynolds, 1995).

Specifically, they are not manufactured identically by all companies, they have no specified rules of inquiry and lack criteria for scoring (Koocher et al.). Whereas the Kendall-Tackett and Watson study provided evidence of uniformity among professionals in their use of AD dolls, their study did not address the validity of such practices. The most recent examination of the issue by Everson and Boat (1994), has addressed seven common usages of the dolls and has attempted to assess the validity of each use. They concluded, on the basis of the existing literature, that only one of the uses requires a formal protocol, and that the other uses vary in their need to be employed with caution. The one potential use which they suggested requires a formal protocol to be valid is the use of the dolls as a diagnostic test. As discussed above, the wide variability of the dolls and professional employment of them makes the dolls unfit to be classified as a diagnostic test. The other six uses which they examined were deemed acceptable, but required varying levels of caution in their employment. Listed in order, ranging from least to most worrisome, they are Comforter, Icebreaker, Anatomical Model, Demonstration Aid, Memory Stimulus, and Diagnostic Screen.

Normative Behavior for Non-Abused Children¹

In order to be able to use AD dolls effectively in the assessment of child sexual abuse, it is essential to know how non-abused children would normally behave with them. Two areas of particular interest are children's level of sexual knowledge and their interactions with the dolls. It would seem reasonable to predict that, due to their exposure to sexual acts, abused

1. One important consideration should be noted regarding all studies of non-abused children. In obtaining samples of non-abused children, experimenters run the risk of including abused children in their sample. Although most researchers take several steps to ensure a pure sample, the occasional abused child may go undetected. Due, however, to the relatively low instances of such confoundment and for purposes of clarity, these samples will herein be referred to as non-abused.

children would have a greater knowledge of sexuality than non-abused children. Likewise, one would expect these children to exhibit more sexualized behavior with the dolls.

A major difficulty in the assessment of child sexual abuse is the lack of normative data on the sexual development of non-abused children (Dawson, Vaughan, & Wagner, 1992). Professionals who interview children to assess possible abuse often interpret precocious sexual knowledge as an indicator of past abuse. Thus, children who exhibit knowledge of sexuality through positioning of the dolls, interactions with them, or verbal statements, are often thought to have had a sexual experience which furnished them with this knowledge. In an attempt to establish a body of normative data, a number of studies have explored the responses to AD dolls by non-abused children.

In a study examining the responses of non-abused children to AD dolls, Dawson, Vaughan, and Wagner (1992) observed the behavior of preschool-age boys and girls with the dolls in five conditions. The children were observed in the following five phases: warm-up free-play session, naming body parts on undressed AD dolls, interaction of child with dressed dolls, interaction with undressed dolls, and post-session free-play. The interview was structured to avoid leading lines of questioning, and both behavioral and verbal responses were recorded.

Both boys and girls were found to engage in greater amounts of sexual exploratory play when the dolls were undressed. In the undressed-doll phases, however, girls were consistently found to exhibit greater amounts of non-sexual aggression and verbal exploratory play, as well as verbal affection than were boys. The most significant finding of the Dawson et al. (1992) study was that, of the twenty children interviewed, none of the children demonstrated clear acts of intercourse or sexual fondling either behaviorally or verbally. Nonetheless, many of the children engaged in active exploration of the genital area. These findings should be noted by

professionals working in the assessment of child sexual abuse because they provide some guidelines to the normal responses of non-abused children. Special caution should be exercised in not interpreting such "normal" sexualized play as possible indicators of abuse.

The Dawson et al. (1992) study seems to suggest that non-abused children have relatively low levels of knowledge of explicit sexual acts. This conclusion, however, may be largely influenced by the unrepresentative nature of their sample. In addition to small sample size, the children interviewed were also predominantly white and came from a middle socioeconomic status (SES).

A recent study by Boat and Everson (1994) has expanded upon previous works by taking into account such factors as age, race and SES using a significantly large sample. In this study, Boat and Everson found that age, race and SES are significant factors in the evaluation of children's play with AD dolls. Among the older children (4-5 year-olds) manual exploration of the dolls tended to decrease, whereas the number of suggestive intercourse positions (i.e., laying dolls on top of one another without clear penetration) increased. Furthermore, black children were more likely to demonstrate suggestive intercourse positions than were white children of a similar SES.

Perhaps the most important finding of the Boat and Everson (1994) study involved the higher instances of sexualized behavior among low SES children. They have offered several explanations to account for these higher rates of sexual behavior. People in lower SES groups tend to live in more crowded conditions which may foster less careful monitoring of children's behavior and provide children with greater exposure to sexual matters. Additionally, these children may be less rigidly socialized to inhibit their expressions of sexuality than are children in higher SES groups.

Other research has also shown that low SES children tend to be over-represented in abuse reports (Finkelhor, 1986, as cited by Boat & Everson, 1994). In light of the Boat and Everson (1994) findings, evaluators

must employ utmost caution not to over-interpret these children's more explicit play. Interviewers must take into consideration the age, race, and SES of the child before interpreting his/her precocious sexual behavior as indicators of possible abuse.

Comparisons Between Abused and Non-Abused Children

Sexual behavior: Several studies have been conducted to specifically compare the behaviors of abused versus non-abused children with AD dolls. The studies, as described by Koocher et al. (1995), differ widely in their conclusions regarding behavioral differences between the two groups. Many of the studies have reported greater sexualized doll-play by abused children (e.g., Jampole & Weber, 1987; August & Forman, 1989; and Rudy, 1991).

Still, many other studies have found no significant behavioral differences between the two groups (e.g., Kenyon-Jump, Burnette, & Robertson, 1991). The variability of these findings may be due to differences in sample sizes and diversity, as well as differences in experimental design (Koocher et al., 1995).

Sexual Knowledge: Given that sexualized doll-play is often interpreted by evaluators as indicating a child's greater knowledge and understanding of sexuality, it is important to examine whether or not this link actually exists. Whereas it is unclear whether abused children are more likely to engage in sexualized play than are non-abused children, it may still be reasonable to predict that, due to their exposure to sexual acts, abused children have more complete knowledge of adult sexuality.

A study conducted by Gordon, Schroeder, and Abrams (1990) explored the differences in knowledge of sexuality between abused and non-abused children. Children were shown pictures depicting common family events, sexual behavior, pregnancy and breast-feeding, as well as clothed and

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A study conducted by Gordon, Schroeder, and Abrams (1990) explored the differences in knowledge of sexuality between abused and non-abused children. Children were shown pictures depicting common family events, sexual behavior, pregnancy and breast-feeding, as well as clothed and

naked bodies. The children were then scored on their responses to questions such as "what is this a picture of?" or "what is this part called, and what is it for?"

Surprisingly, Gordon and colleagues (1990) found no significant differences in knowledge of sexuality between the two groups. Several explanations were suggested to account for the low levels of knowledge amongst the abused children. The first explanation notes that although they showed no significant differences in knowledge, many of the abused children gave unusual responses and showed signs of distress in response to the pictures. This distress suggests that, although these children have been exposed to sexual experiences, the inappropriate nature of the behavior did not permit them to gain a true understanding of normal adult sexuality or of the abnormality of their own experiences. This total lack of understanding, combined with the traumatic nature of the experience, may in turn have been the very cause for those feelings of distress. A second explanation suggests that the children may have simply concealed their sexual knowledge due to repression or embarrassment (Gordon et al., 1990). The results of this study show that even those abused children who do exhibit higher levels of sexualized play with the dolls, may not have any greater understanding of adult sexuality than do non-abused children.

Concerns Regarding Memory and Suggestibility

One of the strongest objections to the use of AD dolls in the assessment of sexual abuse concerns the alleged suggestibility of children's memories. Some researchers fear that the dolls may provide children with cues which could heighten the suggestibility of their recollection. These concerns are especially relevant in regard to the potential impact research findings could have on legal issues. Specifically, legal and psychological professionals base their concerns on research which has demonstrated that a child's accuracy in recalling events is compromised when the child is continuously probed with leading, and misleading, questions (Koocher et al., 1995). The

issue of memory suggestibility, they argue, may be further complicated when AD dolls are involved.

Much research has attempted to test the influence of the dolls on children's accuracy in recalling events. The major methodological failing of such research was, however, that the children were not interviewed about objective events which were known to the experimenters (Goodman & Aman, 1990). Thus, because the researchers did not know what the children's experiences had truly been, they were unable to determine whether the dolls were increasing, or interfering with, accurate recall. Recent research, however, has resolved this problem by first engaging the children in a social situation and then later questioning them on that objective event (Goodman & Aman, 1990; Bruck et al., 1995). These studies explored the impact of both age and the use of AD dolls on the suggestibility of memory.

A study conducted by Goodman and Aman (1990) examined children's responses to 25 specific and 13 misleading questions regarding a play session they had experienced with a confederate. The objectivity of the play session allowed the experimenters to determine with certainty whether or not a child's response was correct. In their study, Goodman and Aman (1990) measured the effects of both age and AD dolls by comparing 3-year-olds and 5-year-olds, as well as comparing use of AD dolls to regular dolls. The results of their study shows a clear main effect for age. With or without the dolls, 5-year-old children consistently reported more correct information than did 3-year-olds.

Of the 25 specific questions presented to the children, five were designed to mimic questions typically asked in abuse investigations. Once again, the 5-year-olds answered these questions with greater accuracy than did the 3-year-olds.

In response to the misleading questions, which bear particular relevance to legal issues, 3-year-olds had a significantly harder time resisting the suggestions provided to them, though doll condition produced no effects.

Goodman and Aman have noted a significant confoundment in their line of questioning which may account for the discrepancies between the two age groups. Most of the abuse-related questions which the 3-year-olds answered incorrectly were in response to questions about "private-parts". Having noted this trend midway through the study, the experimenters asked the children to identify their private parts, wherein they determined that the children were unfamiliar with the term. While this confounding variable calls into question the validity of their findings, it is possible that age differences do in fact exist. Furthermore, their study clearly shows that even for children who are highly suggestible, the AD dolls *per se* do not further contaminate recall.

A recent study by Bruck and colleagues (1995) supports the assumption of Goodman and Aman (1990) that age is a significant factor in the suggestibility of memory. As in the previous study, results of their research showed no significant interference by the dolls in the children's recall accuracy. However, the study also showed no increase in recall accuracy when the dolls were used. Children's demonstrations with the dolls (3-year-olds in particular) did not provide evaluators with any new information beyond that which the children had already demonstrated on their own bodies or stated verbally.

Developmental issues: Although, in all of the previous studies, the dolls were found not to significantly increase error in recall, several other reasons have been proposed to discourage their use with 3-year old children. These objections relate specifically to issues of the children's cognitive development. The first objection is based on a previously mentioned concern that younger children have trouble distinguishing fantasy from reality. Therefore, the children may demonstrate events of their own figmentation and be unable to differentiate them from actual past experiences (Goodman & Aman, 1990). In further support of this argument, it has been noted that dolls are fundamentally associated in the child's mind with fantasy play. As such, the child may have an even harder time distinguishing between

spontaneous play with the dolls and re-enactment of past events (Koocher et al., 1995).

Another developmental concern in the use of AD dolls regards a child's ability to appreciate symbolic representation. Various research has suggested that children under the age of three years may have a great deal of trouble understanding symbolic relationships in which an object represents something other than itself (Bruck et al., 1995). Furthermore, the more salient the object is (e.g. an anatomically explicit doll), the less likely the child is to appreciate its symbolic nature (Goodman & Aman, 1990). This lack of representational skills calls into serious question the use of AD dolls by 3-year-olds to recount an event as they themselves experienced it. Gordon and Aman (1990) noted that, when one child was asked to demonstrate on the dolls what had happened to her, she proclaimed "But I am not a doll".

Given that the primary reason for using AD dolls in clinical interviews is to facilitate the retrieval of information which the children would not otherwise express, the findings of both Goodman and Aman (1990) and Bruck et al. (1995) seem to call into question their very purpose. Furthermore, when weighed with the possible negative effects which the dolls are suspected to cause, the benefits of using the dolls with 3-year-olds seem far outweighed by the drawbacks.

There remains, however, one question regarding the generalizability of studies, such as those conducted by Bruck and Colleagues (1995), which have examined suggestibility in recall. Namely, the social event which the children were asked to recall was a rather neutral one. By contrast, in an actual sexual abuse interview the child is questioned about events which were emotionally traumatic and often physically painful for them. This factor may produce responses within the interviews which differ widely from those found in current research data, and may in turn lead to misdiagnoses.

Final Suggestions

Having established the various components of the anatomical doll controversy and having evaluated the validity of the many opinions involved, the following guidelines are suggested for use of the dolls in clinical interviews:

1. The dolls do not constitute a psychological test and, therefore, may be used in the evaluation only when accompanied by other valid measurement tools.
2. The dolls may be used confidently as an anatomical model for body part naming with all age groups.
3. The dolls should not be used with 3-year-olds as either a memory aid or demonstrative model.
4. Though they do not *increase* recall in children over age four, because they also do not interfere with recall accuracy, the dolls may be used as a memory aid or demonstrative model with this age group to overcome language barriers or embarrassment.
5. For all of the uses delineated above, the dolls should only be employed by professionals who are well trained and informed as to their use. Professionals should have a clear understanding of the range of normal responses to the dolls among non-abused children. Special attention should be given to the higher rates of sexualized play among children in lower SES groups, and particular caution should be exercised not to misinterpret this behavior.
6. Finally, research should be conducted to establish a standard protocol regarding the manner in which the dolls may be presented to children, as well as the types of questions which may be asked in conjunction with their use.

In considering all aspects of this broad debate, it is essential to remain aware of the significant moral and legal implications involved. Over-interpretation of a child's behavior with the dolls may result in the conviction of an innocent adult. Whereas failure to recognize behavior which does indicate abuse, is the failure to grant the child the protection he or she deserves. In the absence of a standard protocol, it remains the daunting task of professional evaluators of child sexual abuse to weigh those two options and to decide on which side they had better err.

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by Ilana Strauss

“Is there a Visual Dyslexia?” An Analysis of P.G. Aaron’s Study

Dyslexia was first clinically recognized as a developmental reading disability at the turn of the century. At the time this impairment was considered to be the result of a defect in the visual memory for words. Hinshelwood (1895) termed the cause of the reading disorder as *congenital word-blindness*, because he believed it was due to an underdeveloped visual memory center. The rationale behind this theory was that reading involves a visual language and consequently a reading disability could not be attributed to a speech or aural language impairment. Later, however, educators such as Burt (1921) and Gates (1929) began to understand dyslexia as being a result of poor word analysis and phonetic skills. This introduced the notion that dyslexia might extend further than a simple visual impairment. Eventually Johnson and Myklebust (1967) and Boder (1973) resolved this contradiction by concluding that there are both visual and auditory subtypes of dyslexia. In contrast to this formulation, later researchers such as Vallutino (1979), Bradley and Bryant (1983), and Liberman and Shrankweiler (1985), all concluded that dyslexia is a language processing disorder and not a visual deficit. The introduction of modern technology with its more advanced understanding of the visual pathways has reintroduced this debate. Research by Lovegrove, Martin, and Slaghuis (1986) showed that a dyslexic's slower transient visual system causes an inefficient coordination between visual input and phonological comprehension.

The argument concerning whether dyslexia can be characterized as a singular disorder or whether it is composed of both visual and phonological subtypes is not a trivial debate. Determining the actual nature of dyslexia has strong ramifications for the treatment of this disability. There would be no benefit in providing phonological training to a dyslexic who only suffers from a visual impairment. Therefore extensive research on this topic is continuously conducted.

A Definite Problem

Aaron (1993) demonstrated the problems with studies that prove a visual dyslexia, and he introduced his own research to prove that visual memory plays little if no role in the dyslexic's ability to read. First he discussed the definitional problem with attributing a visual impairment to dyslexia. He explained that traditionally developmental dyslexia is considered to be a cognitive disorder which accordingly excludes deficits in sensory processing. He stressed that if sensory disorders such as myopia, scotopic sensitivity, and dysfunctioning of the parvocellular and magnocellular systems affect cognitive functions that are responsible for dyslexia, then the definition of dyslexia must be expanded to include sensory processing deficits as well as cognitive processing deficits. In addition he pointed out that dyslexia is generally found in both receptive and expressive language. This duality is expressed in certain behaviors of dyslexics such as slow reading, difficulty in spelling and use of syntax in writing. He concluded that although deficits in sensory processing could account for the difficulty in receptive language, it does not explain the cause of problems with expressive language.

Methodological Problems

Aaron continued to prove the methodological problems with the tests that were used to account for a visual dyslexia in past research. He explained that previously the existence of visual dyslexia was measured by criteria

such as the presence of reverse writing (Gjessing and Karlsen 1989) and spelling patterns (Boder 1973). These skills were generally measured by tests such as the *Bender Gestalt* (Johnson and Myklebust 1979) for visual perception and the *Benton Visual Retention Test* (Schevill 1978) for visual memory. However, he argued that today these symptoms are not enough to diagnose dyslexia. These reversals are rarely present in a mature adult dyslexic population. In addition there is a language component to these tests. Consequently, one cannot isolate a weak visual memory from the existing word recognition tests.

Studies Investigating Methodological Problems

Aaron conducted three separate studies aimed at determining the relationship between visual memory and word recognition.

Study A: In the first study the subjects consisted of 124 students in grades 2-5; approximately half of the subjects were male and half were female. The students were representative of the general population which includes a small percentage of reading disabled children in the classes. The children were randomly presented with a series of four different types of word-recognition tasks. Each task consisted of 12 target words and then a test list of 12 pairs of words in which one out of each pair was a target word. The subjects were told to read the 12 target words, and then they were given the test list and asked to identify the target word in each pair. The variable that was being tested on the four different sets of words was the relationship between the different words. The first task used non-homophonic target words and similar categories of words for the word pairs in the recognition task. For example the target word would be "cat" and the test pair would be "cat, dog". The experimenter used this task as a control because it required the subject to use phonologic, semantic, and visual features to correctly identify the target word. This provided optimal circumstances for word recognition.

In the second task the target words were non-words and the test words were homophonic pairs. For example the target word would be "dore" and the test pair would be "dore, doar". This test removed the use of semantic analysis because all the test items were non-words. In addition this test did not allow for phonological analysis because all the words sounded the same. Accordingly, the only component that was measured in this task was the visual memory for the words. In the third task the subjects were presented with word pairs of grammar words. For example the target word would be "has" and the word pair would be "has, let". This task required the subject to depend on phonological and visual cues but not on semantic meaning. In the last task the subjects were presented with a content word and they had to choose the target word from a word pair composed of the target word and its homophone. For example the target word would be "sea" and the word pair would be "sea, see". This task required the subjects to use semantic and visual features but did not allow them to rely on the phonology of the words.

The data from this experiment was studied to determine which variable either visual, phonological, or semantic features best helped the subjects identify the words in the word pairs. The results showed that the phonological features were most beneficial to the subjects. The semantic meaning of the word also seemed to help the subjects remember the words. The visual features, however, provided little or no benefit to word recognition.

Study B: The second study Aaron conducted was based on the data he collected in the first study. He chose students in the third and fourth grade who achieved scores at or below chance level for the visual task (task #2) but who performed above the mean for the phonological task (task #3). He also chose students who achieved an above mean score on the visual task and a below chance score on the phonological task. He identified seven children that had a poor visual memory but a good phonological memory and two children who had a poor phonological memory but a good visual memory. Aaron explained that the reason the sample of subjects was so

small is that generally when the children had a poor visual memory they also had a poor phonological memory. Aaron obtained the subjects' reading scores on the Indiana Statewide Testing for Educational Progress (ISTEP) from their school records. He then compared their results on this test to the results of his tests. The ISTEP included a measure of vocabulary, language ability, and a cognitive skills test.

After analyzing the data Aaron found that children with a poor visual memory are poor readers. Yet these children also had low scores for vocabulary, language, and cognitive tests. The two children with good visual memory but poor phonological skills also tested to be poor readers. However these children showed normal language and cognitive scores. Aaron proposed that these two children are representative of the dyslexic population because they show normal cognitive abilities yet they have poor reading skills. Aaron inferred from these results that dyslexia is a result of having poor phonological abilities and not a deficit in visual memory. The seven other subjects with poor visual memory that also demonstrated poor reading skills suggest that having a poor visual memory is related to having overall cognitive weakness.

Study C: The final experiment that Aaron conducted involved 31 of the 124 students originally tested. These students were all in the second grade. Half of them were male, and half were female. These students were used as the control group to compare to the second group. The second group of subjects were eight boys in the same grade that were diagnosed as dyslexic. All of the students were given five different tasks that tried to determine if there was a difference in reaction time for dyslexic in verbal and nonverbal visual tasks as compared to the control group. In the first task the children were asked to name twenty different color splotches as quickly as possible. In the second task the children were instructed to read aloud twenty common grammar words as quickly as possible. For the third task the children were asked to follow the same procedure as the second task, however the words were changed to common content words. The

words in these two lists were printed in different colors and were matched for frequency and number of syllables. The fourth and fifth tasks required the children to look at the same lists that were used for the second and third tasks with the additional instruction to state the name of the color the words were printed in. These two tasks were used to determine if the type of word written added an interference factor to the subject's ability to identify the color in which the word was written.

The data showed that the dyslexic children were just as fast at naming colors as the control group. It also showed that the dyslexic children were slower at reading both content and grammar words. The experimenter concluded from here that dyslexic children are slower at processing written, verbal stimuli but not slow in processing non-verbal stimuli. The children in the control group and the dyslexic children all took longer in reading the grammar words than the content words. There was, however, a greater time difference in the dyslexic children. In addition dyslexic children had an increased reaction time for naming the colors of content words than for naming the colors of grammar words, whereas the control group showed the same reaction time for both lists of words. These results show that the meanings of the words presented more interference to the dyslexic children than pronunciation of the words.

General Conclusions

From these studies Aaron concluded that visual memory is relatively insignificant for word-recognition and that semantic and phonological processing are much more relevant. These experiments showed that dyslexics process non-verbal visual information as fast as normal readers. Consequently, Aaron argued that there must be a non-visual component related to written language that causes dyslexic to be slower at word recognition. In addition he pointed out that dyslexics are slower at processing grammar words, and that content words provided a greater distraction when the subjects were asked to name the colors of the words. Aaron

learned from here that word's meanings contribute to the dyslexic's ways of processing words. If dyslexics suffer from a visual memory deficit than their reaction time should be the same for these tasks regardless of whether they were content or grammar words.

Aaron's studies appear to be a strong argument for the statement that dyslexics do not suffer from a poor visual memory, but rather this disorder seems to be related to other cognitive functions such as verbal processing.

Discussion

One must remember that Aaron was limited to a very small sample size for all of his studies, and accordingly his results may not be conclusive. In addition the main issue that Aaron addressed was proving that a having a poor visual memory was not the main cause of dyslexia. From his results he suggested that the cause of this reading impairment is phonologically and semantically based. However he did not research the exact nature of these deficits. Thus, research must continue to be done on this topic so that the correct remedial treatment can be created for this population.

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by Jessica I. Weilgus

Cognitive Assessment of Coronary Artery Bypass Surgery Patients: An Analysis of Assessment Tools

Abstract

Cognitive assessment is a crucial component of the cardiac rehabilitation process. The specific tool used for this evaluation must be sensitive to the targeted patient population. A survey of literature on cognitive screening tools was conducted in search of alternatives for commonly used screens such as the Mini Mental Status Exam (MMSE) and the Wechsler Adult Intelligence Scale (WAIS). The MMSE and the WAIS presented certain limitations that other tests accounted for. The analysis focused on issues such as specificity of diagnosis, ceiling effects, cutoff ages, adjustment for educational level, and practicality of results. The Neurobehavioral Cognitive Status Exam was found to be a viable alternative screening tool.

Coronary artery bypass surgery (CABG) can have a variety of effects on a patient's physical and emotional well-being. Many different aspects of rehabilitation are necessary for optimal recovery. Cardiac rehabilitation typically includes educational training, physical and occupational therapy, medication and nutritional counseling, and psychological services. Cognitive assessment may be viewed as a crucial foundation of the rehabilitative process. It serves to determine a patient's ability to understand his/her medical condition, learn new information, and participate in a rehabilitation program. The results of a patient's evaluation are used to fashion a rehabilitative program suited to meet their needs, abilities and possible cognitive impairments. Without this individualized focus maximal recovery may be hindered.

Changes in cognition after surgery have been viewed as a reflection of brain function. A series of studies have been conducted to investigate the prevalence of neuropsychological deficits and contributing factors (Walter, 1992). One goal was to determine the mechanism of damage underlying the manifested cognitive impairment. One experiment of this series aimed at confirming the following hypothesis; The physiological occurrences that are chiefly responsible are microemboli and/or perfusion as a result of extracorporeal circulation. A quantitative analysis of the frequency of microembolic events during surgery as related to cognitive deficits supported the hypothesis.

Another study of the series varied the method of oxygenation during the surgery, and subsequently measured differences in cognition. The findings indicated that flat sheet oxygenators afforded better protection to the brain than bubble oxygenators (Walter, 1992).

Beyond the realm of the physiological, this series of studies examined whether a subject's own complaints of cognitive impairment were accurately reflective of their actual cognitive abilities (measured by neuropsychological tests). Questions on perceived cognitive changes were presented to the subject in a semi-structured interview. The subject's responses indicated their opinion as to whether a certain aspect of cognitive functioning had deteriorated, improved or remained unchanged following the CABG. The most frequently reported area of impairment was memory. The researchers concluded that subjective reports were unrelated to actual changes in cognition after surgery, but rather directly correlated to mood state. Thus there is a definite need for formal modes of assessment.

One widely used screening tool is the Mini- Mental State Exam (MMSE), a method developed by Folstein, Folstein and McHugh (1975). The following cognitive domains are tested by the MMSE. Orientation is measured by the patient's answer to questions about the date and location (i.e. state, country, town, hospital, floor). Registration and short term memory are

measured by asking the patient to name three objects. The patient is then asked to recall the three objects. Attention is measured by the ability to spell the word "world" backwards. Long term memory and recall are measured following the attention task by asking the subject to recall the three objects from the short term memory segment. Language is tested by asking the patient to name objects (i.e. pencil and watch). A three stage command is then given. Following this verbal command a series of commands which the subject must read are to be executed. Slight variations in procedure may be made at times. This test offers several benefits. Primarily, the realms that are tested are useful and relatively complete. The estimated time frame of forty-five minutes is reasonable. The validity of the MMSE was ensured through confirmation of results by the WAIS.

There are many instances in which the patient can not respond to the MMSE's tasks adequately. When such cases arise another test that is often used is the Wechsler Adult Intelligence Scale (WAIS). The WAIS consists of eleven subtests. These test domains such as verbal attention and concentration, verbal judgment, abstract reasoning, visual perceptual testing and visual motor organization. The results of the WAIS provide valuable insights regarding the patient's expected abilities. For instance, if a person does not do well on the visual perceptual testing portion this may indicate a deficiency in noticing details in the environment. This could be predictive of potential hazards that the patient may encounter upon release.

Although the WAIS has proven to be accurate, it has several disadvantages. First, the cutoff age for the WAIS is seventy-four. Many cardiac rehabilitation patients are older than this. In addition it is inconvenient, in that it adds another hour to testing time. Considering the makeup of the population, elderly post-surgical patients, yet another hour of probing is viewed as undesirable. In response to this concern research was conducted to survey the literature on cognitive assessment in search for a viable replacement for the WAIS. The following report focuses on a select number of potentially useful screens.

The High Sensitivity Cognitive Screen

The High Sensitivity Cognitive Screen, developed by Fogel (1991), presents several advantages. The domains of neuropsychological performance tested are similar to the MMSE and the WAIS, however this tests examines two additional areas. These are spatial skills and self regulation / planning. The twenty-five minute duration of the test offers a brevity unmatched by the WAIS. The questions also heighten the sensitivity to mild or restricted cognitive deficits that may be left undetected by other modes of assessment. The test's design also eliminates the problem of ceiling effects. Fogel encapsulated the test's benefits by saying, "In assessing the elderly, particularly those with medical illness, brevity and ease of administration may be compelling advantages for briefer instruments." (Fogel, p. 277) It seems that this test is highly appropriate to the population of cardiac rehabilitation patients. This factor along with the increased sensitivity and tested domains make the High Sensitivity Cognitive Screen a potentially valuable follow up for the MMSE.

Cognitive Capacity Screening Examination

The Cognitive Capacity Screening Examination (CCSE) was described by those who developed it as, "analogous to creatine and urea nitrogen clearance tests, which are used in medicine to detect the presence of kidney dysfunction but do not necessarily provide a definitive diagnosis of the specific renal disease." (Jacobs, Bernhard, Delgado and Strain, 1977, p. 44) The specificity of diagnosis seems to be low. It is not suitable for those who can not respond to verbal questioning (i.e. deaf or aphasiac). In addition the scoring method was not adjusted for different levels of the subject's education. Accordingly, results could be contaminated by minimal education. It is also possible, by the same logic, that superior intelligence and education could block the manifestation of actual deficits.

According to the above statement of the researchers, it seems that the

CCSE lacks the sensitivity and specificity that other cognitive tests may possess. It seems useful only as a preliminary cognitive screen. This factor along with the test's low sensitivity, specificity, and limited target population makes the CCSE an unfavorable replacement follow-up exam for potentially impaired patients.

The Short Portable Mental Status Questionnaire

The Short Portable Mental Status Questionnaire (SPMSQ) was developed to meet the needs of clinicians who need a short, reliable method of detecting the presence and degree of cognitive impairment in an elderly population (Pfeiffer, 1975). The motivation for the creation of this test came from the finding that many elderly patients that were considered "untestable", were indeed just exhausted and frustrated by long tests such as the WAIS. Often, the patient could not carry out the requested tasks. An inappropriate mode of measure thus led to a diagnosis that was made from incomplete evidence. Another problem that Pfeiffer (1975) found with other cognitive tests was that they do not account for the subject's educational achievements. A subject's educational level is likely to affect test scores. Pfeiffer (1975) also sought to add another dimension to conclusions that could be drawn. He aimed to design the scoring so that the scores could reflect specific levels of functioning.

The design and scoring instructions of the SPMSQ intended to remedy these problems. The concern of excessive questioning was answered by the brief, ten question format of the questionnaire. The questions are suited to test long term memory, orientation, and calculation. The scoring method provides a categorization for different levels of functioning. For example 0-2 errors translates to intact intellectual functioning, whereas 8-10 errors indicates severe intellectual impairment. An adjustment for educational level is provided in the scoring instructions (i.e. allow one more error if the subject has only grade school education). The validity of this method was confirmed with clinical diagnoses.

A definite advantage of the SPMSQ for an elderly population is that the method was designed specifically with this age bracket in mind. Since this test was developed with intentions to compensate for weaknesses in the WAIS, it may be a proper replacement for the WAIS follow-up. A potential problem of lack of specificity in diagnosis and testing may be a result of its trademark brevity.

Automated Testing

Automated testing has one main advantage. This method provides a greater guarantee of objectivity in report of subjects' responses. The responses are entered into a computer, rather than recorded by a potentially subjective examiner. A psychologist's subjectivity can lead to misinterpretation and misguided treatment. Along with the tremendous advantage of objectivity, many important practical issues arise. The automated system created by Ogden, Kellet, Merryfield and Millard (1984) was standardized for a population aged 15-98 years. Potential issues such as mode of response, display and feedback must be regulated so that they do not act as confounding factors. The mode of response must not discriminate among people with different levels of manual dexterity, or familiarity with computers. The QWERTY keyboard may be unfamiliar to some, and the joystick may be a challenge for those with impaired manual dexterity. The display must contain items of appropriate size and brightness so that they may be read clearly by people with impaired vision. The feedback of operators is often generated by the subject. It is vital that the operators' responses are standardized. Despite the financial expense of automated testing, it affords a new level of technological convenience.

The Neurobehavioral Cognitive Status Examination

The Neurobehavioral Cognitive Status Examination (NCSE) was developed in response to certain deficits found by the researchers in tests such as the CCSE, MMSE, and SPMSQ (Kiernan, Mueller, Langston, and

Van Dyke, 1987). They believed that the aforementioned tests have high false negative rates and do not enhance clinical judgment. These insensitive screening exams lead to a false sense of security for the clinician. The NCSE has been revised over a span of eight years in order to change or eliminate any ambiguous items. The NCSE is advantageous in that it measures numerous domains of cognitive functioning. When the assessment is complete the clinician is left with an exhaustive report about specific aspects of the patient's abilities. This contrasts results of other tests which are merely scores and general diagnoses such as "moderately impaired". These specific profiles allow a clinician to have an in depth understanding of the problems, and thus the rehabilitation could be channeled towards specific deficiencies. Another unique aspect of this test is its screen-metric approach. Each domain begins with a screen item that is a demanding test of the targeted skill. If the patient passes the screen he/she is considered to be functioning properly, and need not answer the rest of the questions in that domain. If the patient fails the screen he/she must continue on to the metric portion. The metric consists of questions of graded difficulty. The screen raises the possibility of disability, and the metric tests if that possibility is confirmed. The screen method allows the test to take five minutes for those without impairments. For those with impairments the test will take ten to twenty minutes.

The NCSE measures ability in the following domains. Orientation and attention are measured conventionally as in above tests. Spontaneous speech is measured by describing a picture of a fishing scene. Comprehension is measured by performance of a one, two, and three step task. The ability to repeat sentences is another domain. Performance on tasks requiring drawing designs from visual memory measures constructional ability. Memory and calculations are tested in a standard manner as well. The ability to categorize like objects is an innovative domain. In addition, subjects were asked to exercise judgment by responding to questions such as, "What would you do if in each domain there is an age adjusted norm."

Another study focused on a comparison between the MMSE and the NCSE (Fields, Fulop, Sachs, Strain, Fillit, 1992). Within 72 hours of admission patients were given the MMSE and the NCSE in a nonrandom order. The NCSE was determined to be more sensitive in detecting cognitive impairment in geriatric patients. Along with the benefit of higher sensitivity comes a greater complexity of the NCSE's questions. Some who scored poorly on the MMSE were unable to complete the NCSE. Those with a grammar school education only had problems with the calculations section of the NCSE. Perhaps the level of education has to be accounted for as in the Short Portable Mental Status Questionnaire. Despite the complexity the original NCSE designers indicated that the test had a less than two percent refusal rate (Kiernan et al., 1987). Regardless of the original claim that the NCSE would take a maximum of twenty minutes, the comparative study (Fields et al., 1992) found that the NCSE took over double the amount of time required for the MMSE .

There were limitations to this study that are worthy of consideration. The sample size was small, and the order of testing was not randomized. The comparative study suggested that the NCSE be used as a second stage screen to the MMSE.

Discussion

Through analysis of this limited amount of cognitive assessment devices it is apparent that each tool offers certain benefits and potential problems. It is necessary to evaluate each test's strengths and weaknesses in light of the population's makeup. Elderly post-surgical patients require relatively short and non- tedious measures. In addition the results are more useful if the analysis can transcend the numerical score. Information about the patient's capacity to deal with the cognitive demands of daily life should be indicated in the results as well.

Considering the above concerns, it seems that the NCSE may be an

adequate screening tool. The screen-metric approach shortens the test time. The maximum duration was twenty minutes. This brevity is a tremendous advantage when compared to the one hour time span of the WAIS.

The domains that are tested by the NCSE are exhaustive , and certainly comparable to those tested by the WAIS. The SPMSQ lacks in specificity of testing, and is therefore not a viable replacement for the WAIS. The NCSE includes domains with the same kind of practical implications as the WAIS. One example is the domain of judgment.

Questions of the form "what would you do if" are asked. Results from such sections indicate whether a person is capable of thinking abstractly and able to plan adequately.

The NCSE seems to include all the benefits of the WAIS. It offers the advantage of brevity that the WAIS lacks. These conclusions may only be confirmed through actual use of the NCSE as a testing device. Further research may seek to find a test that has the benefits of the NCSE, with an adjustment for the patient's educational level as well.

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by *Rebecca Rosen and Joanna Raby*

The Effects of Competition and Cooperation on Personal Space

Abstract

Trials were run to determine whether the anticipation of entering a competitive situation fosters a need for greater amounts of personal space than does the expectation of engaging in a cooperative situation. Six female undergraduates, ages 17-21 years, were divided evenly into two groups. The results were found to be significant, and suggest that individuals tend to demand more personal space when they only expect upcoming competitive events than they do for parallel cooperative situations. Future research may examine the effects of the expectation of a neutral condition on an individual's need for personal space.

Personal space (PS) is the amount of unbreachable space which every individual demands. Although the definition of personal space is fairly clear, the variables affecting it are not. A number of studies on PS have suggested that the amount of space required by an individual varies from situation to situation. One determining factor implicated in recent research, such as a study conducted by Mehrabian (1968), is the attitude of the individuals toward each other. Mehrabian's findings suggest that the degree of affinity between a subject and an imagined stimulus-person produced differences in a variety of physical responses including interpersonal space.

Tedesco & Fromme (1974) examined the effects of attitude on PS, by presenting each subject with a task which was played with a cooperative confederate, against a competitive confederate, and had no relation to a neutral confederate. After the trials, the subject was placed in a forced-choice seating measure to ascertain where he would sit in relation to the previous

competitor, partner and neutral individual. Their results demonstrated that cooperative and competitive conditions foster a need for differing amounts of PS. Subjects tended to sit closer to a person who was considered to be a partner than to one regarded as either neutral or competitive.

In an effort to uncover why competition and cooperation have divergent effects upon PS, Seta, Paulus & Schkade (1976) investigated the effects of both attitude and amount of PS on performance. The experimenters varied preconceptions held by subjects toward confederates by creating a cooperative and competitive condition, placing the confederates at either a relatively close or far distance from the subject. They hypothesized that the subject in the cooperative condition would perform better in close proximity to the confederate, while a subject in the competitive condition would achieve a better rate of performance at a greater distance from the competitor. They indeed found a proximity by attitude interaction: subjects in the cooperative group performed better when closer together, while those in the competitive condition performed better when farther apart. Although Seta et al. found that arousal level, determined by both amount of PS and attitude, affects performance, they did not demonstrate that competitors perform more poorly than cooperators across levels of proximity.

The present study attempted to further examine the effects of competition and cooperation on PS. Basing itself on the studies conducted by Seta et al. (1976), the experimenters of the present study hypothesized that if closeness decreases the arousal level of cooperators, and distance has the same effect on competitors, subjects would choose to sit closer to a teammate than to an opponent. However, unlike the study conducted by Seta et al., the present study did not look at the effects of PS and attitude on performance, but the effects of preconception on PS.

The present study further sought to verify the results of the Tedesco & Fromme study in which they demonstrated that cooperators sit closer together

than do competitors. However, this study differed from that of Tedesco and Fromme in two significant areas. First, unlike the Tedesco and Fromme study, this study contained no forced-choice seating measure. Second, subjects were merely led to believe that they would be entering into a cooperative or competitive situation, unlike the Tedesco & Fromme study in which subjects were tested after having actually completed such a task. It was predicted that the results would follow those of Tedesco & Fromme: subjects expecting a cooperative situation would opt for less PS than would those anticipating a competitive situation.

Method

Subjects

The subjects participating in this experiment were six female undergraduate students ranging in age from seventeen to twenty-one. Three of the subjects were randomly assigned to the competitive condition, while the other three were designated for the cooperative condition. There was a confederate in both conditions, and in all cases, the subjects were strangers to the confederate. Neither the subject nor the confederate were aware of the experimental condition at the time of each trial.

Materials

The experiment was conducted in a room devoid of chairs in order to measure the inches of distance set by the subject between herself and her counterpart. A ruler and markers were used for measuring distance.

Procedure

As each subject was led to the experimental room, the nature of her task was explained to her. These instructions led the subject to believe that she was entering either a cooperative or a competitive situation with another "subject" already situated in the room. The cooperative condition was directed as follows:

We are conducting an experiment on problem solving skills. You

will be working **with** another person. Your **partner** is already in the room. You will each be given different word problems to solve. **Because you are working on different problems, you will not be able to help each other; however, your scores will be combined and compared to other teams.** Let's go into the room. (Upon entering...) Take a seat, and we'll be with you in a moment to get started.

The subjects in the competitive condition were instructed as follows:

We are conducting an experiment on problem solving skills. You will be working **against** another person. Your **opponent** is already in the room. You will each be given different word problems to solve. **Although you are working on different problems, they are equally difficult, and so your scores will be judged against one another.** Let's go into the room. (Upon entering...) Take a seat, and we'll be with you in a moment to get started.

As indicated in the instruction, a confederate was already seated on the floor in the experimental room, leaning against a table at the far end of the room. The confederate was unaware of the experimental condition of the subject and refrained from making any eye contact with her. As the subject was asked to sit down, the experimenters slipped into a side room to prevent their presence from affecting the subject's PS, as well as to remove any potential demand characteristics. Once she was seated, the distance between the subject's outer-most body area (usually the knee when legs were crossed) and that of the confederate was measured. The subject was then debriefed and asked not to divulge the true nature of the experiment to other potential subjects.

Results

The distance between each subject and the confederate was measured in inches. The means and SD of the two conditions are listed in the table below:

	MEAN	SD
Cooperative condition	27.3 inches	3.8 inches
Competitive condition	42.5 inches	5.9 inches

The results of a t-test verified that the distance between cooperators significantly differed from that between competitors, $t(5) = 3.75, p < .05$. Interestingly, a clean break between the two groups was found, as *all* subjects in the cooperative condition sat closer to the confederate than did those of the competitive condition.

Discussion

The present study has demonstrated that people require more PS in competitive situations than they do in cooperative situations. As mentioned above, this study went beyond that of Tedesco & Fromme to find significant results even in the absence of a forced-choice dependent measure, and with only the expectation of either a cooperative or a competitive situation and not the actual experience.

The current study defined PS as the area between the outer most edge of the subject's body and that of the confederate. This measure was chosen because it seems reasonable to define one's personal space as beginning where one's body ends. Although the results of this study were significant, it appears, upon further reflection, that this measure may not have been the most reasonable definition of PS. The torso or the face, for example, are equally valid possibilities. Further investigation may be required in this area.

Another interesting suggestion for future research, provided by Tedesco & Fromme's (1974) study, is to include a neutral condition to determine a

base-line need for personal space. Inclusion of such a measure would make the results of the cooperative and competitive conditions more meaningful.

The present study has demonstrated that a person's need for PS is affected by his/her attitude toward the people with whom s/he has to share that space. The effect of attitude is so strong that it was demonstrable with only three subjects per condition and even when the subjects had not actually been involved in a cooperative or competitive experience. Future research may examine other attitudinal conditions (such as fear or personal attraction) on PS preferences, or may look more closely at the interaction between the competitive and cooperative conditions with other factors.

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Treatments for Test Anxiety

"Test anxiety faces the college student not only with an immediate source of stress, but also with a potential long-term handicap to career success. For the preventively oriented community psychologists, the early detection and treatment of test anxiety provides a pressing and substantial challenge." (Holahan, Richardson, Puckett and Bell, 1979, p.679).

The world of the student seeking academic achievement is one of increased pressure and competition. The need to perform well on tests is a constant tension. Some students learn to cope with stressors while others allow them to hinder their scores. These unfortunate students suffer from test anxiety. The purpose of this research paper is to examine the methods and treatments psychologists have used to combat test anxiety.

Systematic Desensitization

Systematic desensitization (SD) is the traditional treatment for the most forms of anxiety. When the problem of test anxiety was brought to the attention of psychologists, they tried, to apply this method. Research performed by Allen, Elias and Zlotlow (1980) as cited by Knapp and Meirzwa (1984) shows that although systematic desensitization has reduced self-reported test anxiety, it has had inconsistent results in improving the GPA's of test anxious students. Knapp and Meirzwa, therefore, tested the effects of both systematic desensitization and self control desensitization in an attempt to devise a better method of reducing test anxiety. The difference between the two methods is that self control desensitization emphasizes relaxation as general skill to be applied any time the sufferer feels tense, while systematic desensitization focuses directly on the

elimination of the undesired anxiety.

In their experiment, Knapp and Mierzwa divided their subjects into three groups. The first group was treated with systematic desensitization to eliminate their test anxiety. The second group learned self control desensitization. The third group served as a control group and received no treatment. Both groups one and two were taught a four step method. The SD group was taught first how to relax. Second, they constructed a test anxiety hierarchy, building up to the most tension filled test experience. Third, they learned deep muscle relaxation skills. Once this ground work was established the actual desensitization process began. A test-stress scene was described. As soon as the subject felt discomfort the scene was terminated. This exercise was repeated until subjects built up a resistance to their tension and could remain calm even in the face of their most fearful testing scenario.

In the self control desensitization group, subjects were told they were learning relaxation techniques to be applied at any moment of stress. Next, they were taught the same muscle relaxation techniques that were relayed to the SD group. Third, subjects created a hierarchy of stressors unrelated to test anxiety. Subjects were then taught to cope with everyday stressors. Unlike the SD group, after desensitization the group discussed their experiences and feelings. Finally, subjects were encouraged to apply these techniques to any tense situation. Participants in the third group, the control, were told that they had been placed on a waiting list to receive treatment for their test anxiety at some future date.

The results of the Knapp and Mierzwa experiment emonstrated that both methods are effective in reduction of test anxiety, and participants in both groups showed improvements in grade point average. Neither group, however, improved in self-concept. This experiment did not teach students to feel better about themselves academically.

It seems that both methods are effective and help the students attain

their initial goal: to decrease test anxiety and increase grade point average. However, students experiencing stress in school are probably sufferers of stress in other areas as well. Self control desensitization, therefore, seems to be the most logical choice if one were to learn an anxiety coping technique which could be more generally applied.

Anxiety Management Training and Self Control Desensitization

Another experiment researching the most effective method for reducing of test anxiety was performed by Deffenbacher, Michaels, Michaels and Daley (1980). They compared the effects of anxiety management training and self control desensitization on test anxiety. The study was conducted with introductory psychology students who showed high test anxiety. A control group consisted of students who were told the experimental group was filled but were asked instead, to fill out questionnaires.

The two experimental groups were given six fifty minute counseling sessions. In session one, of the anxiety management training group, subjects were taught general coping and relaxation skills. In session two they learned to identify tension, how to apply relaxation techniques, and how to use personal images as an aide for relaxation. Subjects described highly arousing anxiety problems in session three. Session four addressed the issue of how to relax in the face of anxiety for a short period of time (i.e. forty five seconds). In session five, the subjects induced relaxation for themselves. Finally in the last session, subjects both initiated and terminated stress independently. The goal of this method was to allow the client to take relaxation into his/her own hands.

In the self control desensitization group, participants were also taught different means of relaxation. In their second session they focused on intense feelings of tension. In the third session they learned deep breathing techniques, controlled relaxation and tension elimination techniques. In

their fourth session, a test anxiety hierarchy was created of different anxiety scenes. During the fifth session, the scenes were presented to the subjects and they tried to relax. When relaxation was reached the scene was terminated. This skill was then practiced until they perfected it. The therapist played an active role in the relaxation throughout.

The results of the two experimental groups were found to be the same. Both groups experienced a decrease in anxiety as compared to the untreated control group. However, a follow up session conducted several months later found that only the anxiety management training had a lasting effect, while SCD was quickly forgotten. It is possible that this is because the anxiety management training focused on the subject learning to control his own tension by both inducing and elimination stress on his own. In contrast, the self controlled desensitization subject was very much reliant on the therapist who stimulated the tension and solicited relaxation. As soon as the relationship with the therapist was terminated, the student quickly forgot what he or she had learned. In contrast, the anxiety management training group learned a new way of coping with life which they quickly integrated.

Trimodal Strategy

Another approach to test anxiety was formulated by various counselors at the Northern State College of South Dakota (Zitzow, 1983). In their attempt to combat growing reports of test anxiety by students, they developed a three pronged method. They focused on cognitive, test taking, and relaxation skills. Students were offered three two hour sessions per week in order to learn to cope with test anxiety. The first session dealt with the cognitive aspects. Students shared their experiences of test anxiety. Counselors impressed upon the students that they were, in fact, in control of their anxiety and pointed out that test anxiety was a result of the test taker's perception. Each student subsequently designed a self-help technique

to be used at testing time, to help them change their self perception.

The second session focused on improving test-taking skills. Students were taught how to maximize study time, understand questions, eliminate wrong test choices and other scholastic improvement tactics.

Finally, in the third session, students learned relaxation techniques. Biofeedback and meditation methods were employed. Students were encouraged to visualize themselves in the testing situations as an attempt to eliminate the association between anxiety and test taking.

The results of this experiment were very positive. Over 70% of participants reported improvement. Some students even showed an increase of as much as two points in their grade point average. The author concluded that "Each participant leader found the trimodal approach to be more successful than single approaches previously attempted. This approach seems to be effective in modifying the cognitive and behavioral aspects of student responses to tests." (Zitzow, 1983, p.565)

Covert Modeling and Cognitive Restructuring

Two other methods of reducing test anxiety are covert modeling and cognitive restructuring examined by Bistline, Jaremko and Subleman (1980). Here the authors tried to apply the cognitive-behavioral method to reducing test anxiety. They did so by placing test anxious undergraduate psychology students into four groups: a covert modeling group, a cognitive structuring group, a combination group and a waiting list control group. In the covert modeling group, students were told they could reduce stress simply by imagining coping with test stress before the test. Subjects heard a vivid description of a test taking scene, and were instructed to imagine the scenario in detail. The instructor told them to visualize dealing with the scene successfully. Finally, they were told to imagine the good feeling of having overcome a stressful situation. These steps were repeated twenty

four times each with different scenarios.

In the second group, subjects learned the principles of cognitive restructuring. Subjects were told they could relieve stress by replacing negative thoughts with positive ones. The same scenes were read to this group as were used in group one. This time, however, a negative self statement was added at the end. Subjects were asked to correct the statement, by responding with a positive coping statement.

The third group learned a combination of both methods. When the scenes were read (including the negative self statement) the students were told to correct the statement with a positive one (constructing reconstructing) and to imagine themselves positively coping (as in covert modeling).

The authors found that all three methods were successful in relieving some form of test anxiety. The most effective treatment, however, was covert modeling. They hypothesized that covert modeling may be more successful because the subjects rehearse the coping skills. When the moment of panic arrives, the student is completely calm because he or she is fully aware of how to deal with his or her feelings.

Covert modeling seems to be a very useful coping skill which teaches students how to relax quickly and effectively. It also includes a feeling of security and self accomplishment. The student feels that he/she can overcome and excel because he/she is prepared.

Cognitive Modification Treatment and Anxiety Management Training

Another article by Holahan, Richardson, Puckett and Bell (1979) also examined cognitive methods for test anxiety reduction. They looked at cognitive modification treatment and anxiety management training.

University freshmen were asked to participate in a workshop for

reduction of test anxiety. The students learning the anxiety management techniques were told that the most effective way to deal with test anxiety was to learn coping techniques for all general stressors. They learned to calm themselves down by using visualization and imagination techniques as seen in the aforementioned experiments.

For the cognitive modification treatment however, subjects were informed of the connection between emotion and cognition. Subjects were made aware that they themselves are in control of stressful situations. Cognitive relaxation techniques were learned and practiced.

The control group in this experiment was different than any other previous control groups in that these students had lower levels of test anxiety than those who participated in the experiment. These less stressed students were told that they had been placed on the waiting list for future participation in the program.

Researchers tracked the grade point averages of these groups for three semesters. An interesting phenomenon occurred. Generally, in the beginning, the GPA of the control group was higher than that of the two experimental groups. As the year progressed, however, the GPA's of both experimental groups rose while the GPA's of the control group decreased. The authors attributed this discrepancy to the fact that the control group had not acquired any coping skills. As the semester progressed the pressures became greater and they simply could not overcome them. Those who had participated in the workshop however, learned skills to combat the stress. This enabled them to perform more effectively in school. The authors concluded that the most important factor in eliminating test anxiety is early prevention. They deduced that the style of intervention was not as important since both experimental groups showed improvement. The authors emphasized that "...early detection and treatment of test anxiety in college students may be effective not only in reducing self reported anxiety, but also in preventing future academic difficulties." (p.686).

Pavlovian Conditioning

A more innovative treatment for test anxiety was created by Seigel (1986). Seigel criticized previous methods of reduction of test anxiety, saying that they took too long to learn. Furthermore, once the technique is learned, the student has to develop it in order for it to be effective. He, therefore, developed his own method called TART - test anxiety reduction training.

Seigel used Pavlovian conditioning principles to facilitate relaxation. Every participant selected his/her favorite, most relaxing music. This served as the unconditioned stimulus. Each student was then given a small glass marble. This was to become the conditioned stimulus. Seigel's plan was then to pair the marble with the unconditioned stimulus (the music) to yield a conditioned response - relaxation. The goal was to create a situation whereby simply looking at the marble would calm anxious students in a test situation.

First, association was needed. Students were told to hold the marble in the hand not used for writing. At this time the music selected by the student was played. Throughout this procedure, the student was imagining a stressful test situation. This was repeated eighteen times. Each conditioning cycle took seven minutes in total. The student could practice the exercise at their leisure.

Once the cycle was completed, the subjects were told to bring the marble to their next test. They were encouraged to look at the marble for four seconds whenever they felt anxious. Seigel hypothesized that looking at the marble would elicit the same feelings of relaxation felt when listening to music.

Seigel found that all participants showed an eighteen percent average increase in grades. Although creative, innovative, and seemingly effective, Seigel's research does not seem to be conclusive. First, his experimental

group consisted of only ten students. All the subjects were enrolled in his introductory psychology class. This leaves room for many biases both from the experimenter and the subjects. Perhaps the instructor (Siegel) inadvertently made the tests just slightly easier, or maybe the students studied harder, not wanting to disappoint their professor. Furthermore, none of the results have been replicated. Seigel only recorded an increase in averages, but failed to record the reduction of actual test anxiety. This study did not prove Seigel's method to be an effective way of relieving test anxiety.

Multifaceted Behavioral Group Treatment

Another behavioral method of reduction of test anxiety is called multifaceted behavioral group treatment devised by Ploeg and Ploeg-Stapert (1986). This approach was developed using teenagers from various schools participating in occupational training programs. The program included eight weekly ninety-minute sessions. In each session, students were assigned homework for reinforcement. Sessions for parents were also offered. First, test anxiety was discussed. Then instructions explained the origins of test anxiety and relayed muscle relaxation exercises. Students then worked on study skills. They learned how to focus, concentrate, and deal with disturbances. The students were then introduced to the concept of "worry". They were told that the cause of "worry" is irrational thought. Replacing irrational thoughts with rational ones was emphasized. Some of the techniques used by instructors were games and hypnosis. When comparing the experimental group to the control, it was found that the experimental group's anxiety level decreased while the control group's anxiety level increased.

After three months, the researchers performed a follow-up study and found that the students with good study habits and high test anxiety benefited a great deal from this program. The students who showed the most

improvement, however, were those who had poor study habits and a great deal of test anxiety.

This study implies that test anxiety has a greater effect on test scores than study habits. The practical implications of these findings were astounding - a student with test anxiety need not study harder to improve, they need only relax in order to attain their goals.

Matching Tests

Until this point, most researchers dealing with reduction of test anxiety focused on the test taker and helping him/her to eliminate his/her test anxiety. Shaha (1984), decided to examine the anxiety from a different point of view. He looked at what kinds of tests make students most anxious.

First, Shaha gave subjects a test in basic common knowledge. Half the students received a multiple choice test, while the other half received matching. Upon completion of the test, students were given a questionnaire. The author found that students preferred the matching test and felt less anxious taking it. Despite this, both tests were found to be equally effective.

After this, Shaha administered a test on an area which most of the students were not familiar with at all (Eastern Religions), both in multiple choice and matching form. This time, students did equally poorly in both styles. Yet, as in the first study, subjects reported feeling less nervous while taking the matching test.

The author deduced from his findings that "Since testing is traditionally presented is a multiple choice format, then it may be the case that anxiety is associated with multiple choice test." (p.1979). By simply changing the way questions are asked, students can perform better and reach their goals.

Conclusion

Different methods of reducing test anxiety have been examined from the creative to the classical. All methods have proven to be useful and have helped the student to improve. From the above research, one thing is clear. Test anxiety is a treatable disorder which should not go ignored by either student or teacher.

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by Aharon H. Fried Ph.D.

Facilitated Communication: Method or Creed? A Case Study in Pseudo-Science, Faulty Logic, and Twisted Faith

Even a cursory glance through the popular literature in the "frum" community reveals a strong anti-Science sentiment (e.g. Ernstoff 1996). In articles introducing or advocating anything from healthy diets, mega-vitamins, alternative healing methods or therapies, there invariably comes the disclaimer to the tune of "even though scientific research and verification are lacking for what we're advocating, we all know that Science or the 'Scientific establishment' has always been rather obtuse and insufferably conservative in accepting new or novel solutions, especially those coming from outside their ranks." The necessity for research to establish the efficacy of what's being advocated is waved aside by statements to the effect that the "facts speak for themselves". Thus, anecdotal reports of successes and miracles rendered by the advocated cure are put forth as more than sufficient to warrant its adoption.

This approach is bolstered by the usually unstated assumption that denying, nay defying, what the Scientific establishment advocates is somehow reaffirming and strengthening our faith in Torah which, of course rests not on Scientific proof but rather on faith. Faith is seen to be not merely a-rational but decidedly irrational. A "true man of faith" is seen as being irrational - believing in the face of (what seems to be) reality; believing in the spirit of "Af-al-Pi" (even though) and "BeDavka!" (in spite of). Rationality and skepticism of any sort are seen as a threat to faith

in Torah and smack too much of the words and attitudes of the "wicked son of the Hagaddah". Thus, it is thought and felt that by raising the banner of irrationality and proclaiming one's freedom from the limits and encumbrances of logic and science one has finally freed one's soul for true faith.

Thus, we find belief in Torah and the belief in any and all claimed cures and amulets to have formed an alliance wherein an attack on one is an attack on all. This state of mind and form of thought has some serious repercussions. On the one hand, it leaves the "frum" community open and vulnerable to unproven and potentially harmful and costly methods and cures. It also turns them into unsuspecting victims for all sorts of charlatans and pretenders. Worse still, because faith in Torah is by association and by implication tied to these therapies, when they fail, the perception is that somehow Torah has *chas veshalom* failed. Judaism used to have as one of its main tenets the separation of true belief from false and foolish beliefs. Today, some members of our community have changed this to the separation of belief (of any value) from lack of belief and skepticism only. This is dangerous. We have been taught by great men that foolish beliefs held alongside true beliefs end up detracting from the latter.

To my mind at least, accepting anything outside Torat Moshe on faith, endangers faith in Torat Moshe. I would like in these pages to explore this issue somewhat. I will do this within the context of Psychology and the prevalence and acceptance of what have been called the "Magic Therapies" - unproven and untested therapies promising great and miraculous cures. I will use as a case in point the use of "Facilitated Communication" with Autistic children with retarded development. I will trace the development of this therapy, its acceptance in the Orthodox community and, believe it or not, its use as proof for the existence of G-d Almighty. Then I will review the relevant research literature in this area! In following this saga we will find an unusually clear example of how thinking unencumbered

by the safeguards of rationality can be swept up and extend itself to the extremes of the ridiculous. I will also try to show that our sages of blessed memory advocated a rational approach in all areas, and especially in those areas dealing with earthly existence and the establishment of facts in those domains in which facts can be empirically ascertained.

A New Phenomenon: Facilitated Communication

In the past few years a new method, Facilitated Communication, for helping children with communication problems has been reported and heralded. In this method a person who cannot communicate is helped to do so by way of a facilitator - a supportive person who holds the heretofore noncommunicative client's hand making it possible for him/her to "type" on a "communication board" - a simple board with the letters of the alphabet clearly written on it, a typewriter or computer of sorts. This supportive help of the facilitator is said to merely help the client to direct his hands and to overcome the motor problems which would not allow him to type without help. With this support the person can communicate. In time this support is supposed to be faded out. In practice, however, this rarely, if ever, happens.

The method of Facilitated Communication (henceforth FC) was first introduced by Rosemary Crossley, a teacher in Melbourne, Australia in the early 70's for children with Cerebral Palsy who were not communicating verbally or in any other way. C.P. children have motor problems and often normal intelligence. There is good reason to believe that children with C.P. have an inner language, that they know many words, and that they may even be able to read but cannot express themselves because of motor problems which handicap them. After having succeeded with C.P. children, who with a minimum amount of help began to type and communicate profusely, Crossley was encouraged and began using the method with other children with communication problems. This, even though the etiology of their communication problems was different from that of the C.P. children

- in most cases there is no evidence of motoric problems at all. They first began using the method with Autistic children with normal intelligence, for whom one might assume or expect the existence of unexpressed linguistic skills and saw success. The method was then used with Autistic children with retarded intelligence levels, for whom there was no logical reason to believe that they possessed any language, and again they saw success. The method was quickly adopted for all sorts of handicapped children by enthusiastic workers in the field (*Crossley 1980, 1993, DEAL Communication Staff 1992*).

From Australia the method was brought to the United States in 1989 by Prof. Douglas Biklen a Sociologist and Professor of Special Education at Syracuse University. Biklen and his students published many articles describing the method and its successes. They also organized numerous workshops across the country to bring the method to the attention of parents and teachers and to train hundreds of enthusiasts as "facilitators". A concerted effort was made to introduce the method into all kinds of schools and for all kinds of children.

To be sure, the use of various aids to help those with communication difficulties is not new. FC is one of many forms of Augmentative Communication methods which have been successfully used as aids or alternatives to verbal communication, via the use of picture boards, writing or typing and the like. Thus aids to communication in and of themselves are not a novelty.

The novelty of FC is twofold. Firstly, it requires physical help - a facilitator holding the client's hand in order to enable him to "type" (*Intellectual Disability Review Panel 1988*). Secondly, it has yielded totally unexpected results. The adherents of FC have told of astounding phenomena Children who, in the experience of their parents and teachers have never communicated verbally or in writing, children who based on standard evaluations, would be expected to have no language at all, children who

according to standard evaluations would be said to be functioning at a retarded level, are suddenly communicating with words, phrases and full sentences at highly literate levels, and are shown to be people with normal intelligence, some even geniuses (*Biklen 1990*).

We are told that these abilities had not been apparent heretofore only because the children were impaired in their ability to communicate. Via the use of the Communication Board, via the support and help of the facilitator, and in the encouraging and supportive atmosphere created by the "culture of facilitative communication" these seemingly impaired children reveal themselves to be in full command of language. They also have a great store of knowledge and seem to have internalized all that they have been taught and exposed to over the years, and more! Everything was merely hidden in them waiting to be expressed - a possibility made real by FC.

And even more! The children have also been shown to know foreign languages to which they have never been exposed. Thus, children of various non-English speaking backgrounds (such Spanish, Icelandic, and Hindi) answered in... English! (*Wolfensberger 1992*) And what's more, they answered in a style and at a level way above their chronological age (see *Mulick, Jacobson, and Kobe 1992*). Clearly then, all previous evaluations of these children's intellectual and linguistic capabilities had been in gross error.

Problems With the Phenomenon:

A method which reveals hidden intelligence in children, and opens a way through which we can communicate with them and free them from the prisons which their minds are locked into, a method which allows their potential to come to fruition is certainly worthy of acceptance and acclaim and adoption by all who care for children- BUT only **after** it has passed the tests of controlled studies which support its claims to efficacy.

Unfortunately, there are problems both with the method of FC and with its proponents.

Problems With the Method:

So long as the child/client does not communicate independently without the physical help of a facilitator it is difficult to ascertain the source of the message received via FC - Is it really the client who is typing/communicating, or is it a message sent by the facilitator (albeit unknowingly)? Even Prof. Biklen, the American champion of the method has written that there exists the danger of the facilitator influencing the communication via subtle hints which the facilitator may be unintentionally passing to the client (Biklen 1992a); nevertheless, he is not troubled by this because the facilitators feel certain that it is the child who is leading the hand and that it is the child who is typing and communicating and not them. Therefore, he suggests, we should believe the facilitators. (Biklen National Public Radio 1992, cited in Jacobson et al 1994).

Another somewhat (empirically) less bothersome problem, but nevertheless a problem, is the fact that there is no theoretical basis to explain why it is that Autistic and retarded children should suffer from what Biklen has called Global Apraxia - a motor problem which, he suggests, makes it difficult for these children to voluntarily initiate the motor movements required to speak or to type and communicate without physical help. Aside from the fact that this term, Apraxia, is loosely used by FC proponents (Mulick, Jacobson, & Kobe 1993), the existence of such a Global Apraxia/motor problems is difficult to accept since there is much research which shows Autistic children to be more often linguistically impaired while motorically normal and even agile (Jacobson and Ackerman 1990 cited in Mulick et al 1993). We are being told "we know the child has apraxia because he cannot communicate without help, and we know that he cannot communicate without help because he has apraxia" - an acute case of circular reasoning.

Problems With the Proponents:

Whilst Biklen and his associates have expended much money and effort in organizing workshops, and in other ways of publicizing the method and spreading its acceptance (e.g. DEAL Communication Staff 1992a & b, Chadwick 1993, Crossley 1993), they have expended little or no effort in doing research which might prove the methods efficacy and ensure its acceptance in the scientific community. Actually, they have been impatient with those who ask for research, saying that this would unnecessarily delay the spreading of their method to those who need it.

Crossley and Biklen claim that a research program would create a critical atmosphere which would destroy the trust the clients need in order to properly communicate. They feel that the Autistic child communicates only because of the respecting, trusting and supportive environment granted them by the facilitator. When they come to feel that their competence is being challenged and put to the test, they will not communicate. "Would you ask a speaking person to prove that he is actually speaking? Why then ask these children to prove that they are communicating? After all it's a fact!" says Biklen. Thus, they are saying the method cannot be put to the test. They suggest that we should use, not experimental research, but rather the observational research methods of anthropology to study this phenomenon and to accept the subsequent findings as facts.

Proofs Cited By the Proponents Of the Method:

Following this line of reasoning, Biklen (in "A memo to parents", and in Biklen 1992b) cites a number of qualitative findings, which he sees as proofs for the truth of FC. The most important of these are cited here, with the logic which refutes them.

Proponents Proofs The Refutation

1. It's a fact that the children are communicating, why not accept their

communications at face value?

1a. It is impossible to accept at face value that it is the child who is communicating without first investigating whether he is indeed the one communicating.

2. Each individual client communicates in his own style, even when facilitated by different facilitators.

2a. Neither Biklen, or his co-workers have ever operationally defined what it is that constitutes a "consistent individual style", how it would be defined, and how it was investigated. Who judged whether the style was indeed unique and consistent? Was it the facilitator himself, or someone less intimately involved in the process? This is a judgement which after all entails much subjectivity.

3. Each individual client makes the same unique idiosyncratic spelling and typing errors across different facilitators.

3a. Again, who is it that judges the consistency of these errors? All communications received via FC require subjective judgement and interpretation which cannot be proven, since the clients tend to drop and add letters all the time.

4. The client often uses FC to communicate specific and accurate knowledge which is not known to the facilitator, such as personal information about the client's family.

4a. This assertion remains unclear. It may just not be so. In one study where this was followed up on, it turned out that (a) the unknown information was not unknown to the facilitator, and (b) it was not accurately reported by the child.

At the same time Biklen and his associates ignore some disturbing observations which many have observed even in informal observations of the method in use.

For example, during a session, while the facilitator is very engrossed

and intent on paying attention to the communication board, the children are often observed to be looking at anything but the board. Nevertheless, the typing continues. This becomes even more incredulous when hand held boards are used. In these situations, the board which is being held by the facilitator and the very active child is moving erratically in the air. Yet again, without the child looking at the board, the typing continues. Proponents claim that the children know the board by heart and have tremendous perceptual and perceptual-motor abilities which allow them to type without even seeing the (moving) board.

The facilitators have also been observed to be so engrossed in the board that they often ignored, or failed to hear the child's correct verbal response to the question being asked.

While the decoding of the child's communication is slow and tedious (and often impossible) for outside observers, it comes quickly and automatically to the facilitators. The facilitators explain this by their knowing the child and being more familiar with his communication style. A more likely explanation may be that they can quickly decode the messages because the messages are their own - the facilitator's that is.

Also cited as a proof for FC (reported in Jacobson, Eberlin, Mulick, Schwartz, Szempruch, & Wheeler 1994) are reports that the child often uses FC to communicate very specific and accurate information which is known only to the facilitator, such as personal information about the facilitator. This is explained by attributing to the client/children - the power of telepathy. This proof for the power of telepathy in Autistic children because they communicate information known only to their facilitator should be seen as a negative proof - against FC. It is much more parsimonious and logical to explain this phenomenon by saying that this information was communicated by the facilitator and not by the child!

A Poor Mode of Reasoning

This last phenomenon - the use of "telepathy" to explain strange findings, and consequently, to use this explanation as a perverse "proof" for FC - is characteristic of the mode of thinking engaged in by many of the proponents of FC.

- First, they accept FC as real on an a priori basis.
- Then they explain its workings by the use of a meta-physical explanations, at the same time granting the method these meta-physical powers.
- Having endowed the method with special powers, they then "spread the gospel." In a short time, these "new powers" become part of the accepted and unquestioned lore surrounding the method.
- With this now newly empowered method, the proponents have enabled themselves to accept and integrate even phenomena which otherwise might be seen as refutations of the method.
- But that's not enough. The contradictory evidence is now cited as actually proving and supporting use of the method. They conveniently forget to mention or even to remember that the explanation is based on a first-assumption which they created but never bothered to check out.¹

When in Melbourne in August of 1994, I visited Rosemary Crossley at the DEAL Center. Crossley distanced herself from the claims of telepathy in FC and also stated that if the child was not looking at the board, he

1. I once observed a public figure who paid a number of newspapers to run as factual articles press releases and depictions of his person and his institutions which he himself had written with his staff. I was astounded to see him and his family gathered around the newspapers the next day, oohing and aahing about the beautiful things written about them. They were not only impressed with the articles, they learned from them. They arrived at conclusions about themselves and made plans based upon what the papers said would be.

could not be considered to be communicating via FC. However observing her and an assistant working with two adolescents, whose exact diagnosis it was difficult to get, I did see some of the other phenomena reported above - thus correct verbal communications of the boys were ignored while they were being coerced to answer using the communication board! When I asked Crossley about the contradictory research results reported below, she had no real answers. She did assert that it takes many months of training to be a real facilitator, suggesting that the facilitators in the research studies were not sufficiently trained. However Biklen is known to train facilitators in as little as three hour sessions with, according to subsequent reports, truly unbelievable results.

The Research

The last few years have seen a number of empirical research studies conducted on this phenomenon. These were first instigated by the courts in Australia (Interdisciplinary Working Party 1988, Intellectual Disability Review Panel 1989) after a number of parents were charged with physical and sexual child abuse based on communications made by their autistic and retarded children via FC. The courts could not convict based on these communications without verification of their veracity. They therefore ordered investigations of the phenomenon (which had to be carried out without the cooperation of Rosemary Crossley and her DEAL Communication center - they claimed an investigation of the method would destroy the children's ability to communicate). In the United States, the courts (Bligh 1993) as well as a number of independent investigators in various clinical and university settings also undertook investigations. These investigations and their results are reviewed at length in readily available sources (referenced below). I will, therefore, limit myself to a very general review of the bare essentials of the research design and the findings, leaving it to the interested reader to go to the referenced sources for more detail.

The essential designs of the research studies are relatively straightforward and simple.

A. Create a condition in which questions can be asked of the child, pictures can be shown to him (which he is to name via FC), or messages conveyed to him such that the facilitator does not see or hear the stimulus/message sent to the child.

The child's Facilitated Communications in the above condition are then compared to the child's communications during standard FC procedures when both the facilitator and the child receive the same stimuli.

or

B. Present both the child and the facilitator with stimuli (questions or pictures) to which the child is to respond.

-On some trials present both the child and the facilitator with identical stimuli.

-On other trials present the child and the facilitator with different stimuli.

(The facilitator should of course not be aware of when the stimuli are identical or different.)

Then compare the child's Facilitated Communications in the two conditions.

The research results of close to 30 different studies in both Australia and the United States (reviewed in Jacobson, Mulick, & Schwartz 1995, and in greater detail in Jacobson, Eberlin, Mulick, Schwartz, Szempruch, & Wheeler 1994) are essentially as follows:

1. When the stimuli were seen by both the facilitator and the child, the responses were very often correct (23% of the time).

2. When the facilitator did not see the stimulus shown to the child, the responses were almost never correct (or correct at a below chance level)

More often they were either incorrect or mere gibberish.

3. When different stimuli were presented to the child and the facilitator, the responses were either gibberish or incorrect for the stimuli shown to the child, but 20% of the time were correct responses to the stimuli which had been shown to the facilitator !

Thus, children were shown to be unable to respond to stimuli which the facilitator had not seen and a good deal of the time responded to the stimuli shown to the facilitator. In at least one study (Wheeler, Jacobson, Paglieri, & Schwartz 1993) it was shown that a number of clients who had been facilitated by the same facilitator tended to have similar "response styles." Who then is sending the messages ?

These results were found in controlled study after controlled study. These studies were also extremely careful in defining the diagnosis of the child, the qualifications of the facilitator, the conditions of the study and the communications. They were also extremely liberal in accepting questionable responses as positive examples of FC. Alas, to no avail. Not even one controlled study was able to demonstrate better communication with FC than without it (a very few children who had some verbal and/or typing skills did communicate successfully via FC - but no more successfully than they could without FC). Thus the "unexpected literacy" claimed to have been found by the proponents of FC did not materialize. (Interestingly, in at least one of the studies (Eberlin, McConnachie, Ibel, & Volpe 1993), the facilitators did report instances of "unexpected literacy" during their informal practice sessions with the clients. However, these occurrences did not appear in either previous or subsequent controlled settings).

Both quantitative and qualitative analyses of the results thus demonstrated facilitator influence. However, in all the studies the facilitators were clearly unaware of their unconscious influence on the communications¹. This seems surprising to most people, but not to those

familiar with other instances in which people fail to perceive their active influence over physical interaction or language production, such as in the use of Ouija boards and channeling (Hall 1993).

The proponents of FC held on to the argument that the testing destroyed the trusting relationship between facilitator and child and that all the children in all of the studies failed to communicate only because they had lost confidence. Interestingly, this did not stop them from communicating about the stimuli they did not see - the stimuli shown to the facilitator.

In the face of all this evidence one might have thought that the craze for FC would die down - but it did not (Students of Social Psychology should not be surprised. Many groups holding to beliefs tend to become even more strident in the statement of and propagation of their beliefs in the face of disconfirming evidence. See Festinger et al 1956).

A recent article (Jacobson et al 1995) cites a number of reasons for people holding on to these beliefs. These include:

-Parents and teachers motivations to obtain for their children the best

2. While in Jerusalem in the summer of 1994 I had the opportunity to test a child working with his facilitator, a teacher I knew. This teacher claimed to have been working with the child for about a half year with great results. She was convinced he could read and write. She acquiesced to the testing, noting however, that she saw no reason for it. Using the basic paradigm reported in the published research, we obtained the same results. What was amazing however was watching the total unawareness of the teacher/facilitator of what she was doing. Thus, at one point the child refused to allow her to hold his hand for communication purposes. Instead, he grabbed her hand. At that point she said to him, "Oh, you'd like to type with my hand ? OK, that's perfectly all right. We'll ask you questions and you push my hand to the right answers." Thus, they began to type. The child being erratic was not consistent in holding onto the facilitator's hand, at times he'd leave go. It was truly amazing to note that the facilitator was so engrossed in the board that she was oblivious to the child's having let go of her hand, and continued typing "his" communications !

and most effective services available for children with disabilities. This makes them vulnerable to the false and magical promise of dubious therapeutic techniques.

-The despondency of parents and teachers when faced with their children's disabilities and the very slow, minimal, and painstakingly gotten progress offered by the standard treatment methods. Promises of quick "Magic Cures" are especially attractive to people who are prone to helplessness and despair. Thus, they say, "Fad treatments offer hope when all other treatments seem less providential."

ISRAEL and the RELIGIOUS COMMUNITY:

Meanwhile, in Israel, Jewish religious proponents of the method were offered an additional reason to hold on to FC - and this reason drove it to the extremes of credulity.

FC was imported to Israel by a couple of special education teachers who had traveled to Syracuse and taken workshops with Biklen. In Israel the method really took off ! It was widely adopted for use with all kinds of children. And then came a windfall - an occurrence which was quickly reported to Jewish communities around the globe via fax and other means of communication (Tel-a-Yid). *U'maaseh shehaya kach haya* - here's the story!

In B'nai Braq, a teacher who worked with two Autistic children received a communication from them via FC asking her to take them to see a well known *Mekubal* (mystic) in the city! The teacher was amazed at how these youngsters could know about this *mekubal*, where would they have heard of her father ? She asked the *mekubal* to see them and he did (On Erev Rosh Hashana). During this visit with the *mekubal*, the *mekubal* asked the children many questions, why did they wish to see him? who were they? how could he help them? etc. With the help of their teacher as facilitator, the children told the *mekubal* that they were "Gilgulim" (souls reincarnated

in the bodies of these Autistic children to atone for grave sins which they had committed in previous lives) and sought peace for their souls. They related the grave sins they had committed (but only partially), cried much, and finally stopped communicating. The *Mekubal* was very impressed with this encounter and wrote a letter attesting to what he had observed. He noted that whereas the facilitator was deeply engrossed in the communication board, the children barely looked at it. He saw no problem in this, explaining that the children were looking directly with the "eyes of the soul", thereby bypassing the physical eyes. The *Mekubal* gave credence to this phenomenon, saw it as consistent with his learning and his beliefs, and said that he is writing the letter so that people take to heart this message from the spiritual world which we have been privileged to witness.

The *Mekubal's* letter had wide ranging repercussions. Everywhere in the Jewish world the popular press ran articles heralding this "window to the soul" (see for example Weil 1993, Kahn, 1993, Hamodia 5753).

Subsequently, in Jerusalem, a pamphlet entitled, "*And I will place my Spirit in Thee*" - *What does the soul say?* was published lauding the phenomenon of FC, hailing it as a revelation of prophetic (or almost prophetic) proportions by which our generation is being sent a message from above. In this pamphlet, which saw wide distribution and acceptance in the religious community, there are reports of FC success with "blind children with brain damage" (who cannot see the communication board), with "people who are unconscious or in a vegetative state" (who can neither see the communication board, or move their hands independently), as well as with children who are deaf (and can answer questions which they haven't heard). Actually Jerusalem and Bnei Braq are not the first places where such fantastic stories were told. In Melbourne, also, the courts investigating the use of FC found that it had been used with patients in vegetative states who could not have made the movement to communicate on their own.

The logic of this pamphlet follows the circular logic outlined above, albeit with the addition of a Holy Ghost. The main points are as follows:

1. It is taken as axiomatic that revelation from the spiritual world is present in some form in every generation.
2. FC as having worked with some child (whose diagnosis is not clearly defined) is accepted as a fact.
3. The workings of FC with that child are explained as being a direct message from the soul.
4. Once we are dealing with the soul we can explain any and all strange phenomena reported by users of the method, even the most bizarre, as being direct communications from the soul (which can rise above and bypass the limitations of the body).

This then allows them to accept as facts phenomena which run counter to all logic. Thus, we arrive at blind people who can see, deaf who can hear, and "patients in vegetative commas" who can type and communicate!

What hurts most, however, is to see this faulty and embarrassing illogic used to prove the existence of G-d. The writer of the aforementioned pamphlet writes on page 3:(FC) "gives us the opportunity of 'seeing' the *Shechina* (G-dliness)"; and on page 10: "let us use this phenomenon to prove to all those whose faith is not strong enough that there is a creator who runs this world and watches over it". And on page 28: "We will clearly show all doubters that there is Judgement and that there is a Judge"³. The writer seems unaware that he is actually using Torah concepts (albeit twisted almost beyond recognition) to bolster the method of FC, rather than the other way around. (He came to instruct and left instructed). Can one conceive of a greater *Chilul Hashem* ?

This pamphlet gave further impetus to the craze - quality of FC. Future cataclysmic events were "foretold" by autistic children and groups of *mekubalim* gathered in prayer to avert the predicted event. Parents and

grandparents declared that they were no longer offering prayers for the improvement of their autistic children, since they were after all perfectly holy souls. And a widespread rumor had it, that when a person went to ask a prominent Rav for advice, he was told to go and ask an autistic child via FC.

Eventually influential Rabbis of Bnei Braq and Jerusalem did issue a statement (Yated Ne'man 1994) in which the fantastic claims for FC were refuted and, in which parents are advised to use caution in use of the method. However, the method itself as a viable means of communication for disabled children was not challenged. Thus, the circular seems to have had a minimal effect only.

Some Basic Ideas Regarding Torah and Science:

The world contains in it "natural facts". The interpretation of facts is always made from the perspective of the underlying assumptions and biases which the scientist brings to the task. Thus, for us as Jews to understand what these facts say to us, what they teach us, and how we are to understand them, we need Torah and the clear perception of the Torah Scholar who can interpret the facts of nature from a pure Torah perspective unencumbered

3. The logic and ambiguity of his reports serve only to increase the chilul Hashem. For example, he reports all sort of statements made by children from irreligious homes regarding G-d and their fear of punishment. Many of these statements include derogatory remarks about their non-observant parents. The pamphleteer expresses amazement at non-Dati children communicating religious concepts they had never been taught. What he fails to tell us is whether the facilitators were also non-dati (irreligious). I suspect not. And if I'm right, who is sending the message ? And, who allowed these facilitators and the pamphleteer to hurt the parents of these children the way they have, by putting such hurtful words into their children's mouths (excuse me, hands) ? Who permitted them to spill the blood of the parents of these children just because they were non-dati ???

by values and philosophical biases which come from sources foreign to Torah. This is what I understand the Talmud to be saying when it tells us:

If a man tells you there is wisdom amongst the nations - believe him (but if he tells you) there is Torah amongst the nations - do not believe him.

In other words, the establishment of facts in our natural/physical world may be done via the accepted and tested methods of the scientific community. However, any interpretation of, or teachings dictated by these facts requires a Torah perspective. This is so because as aforementioned, no interpretation is free of fundamental (always ultimately unproven) first assumptions and "self evident truths". And we can accept "self evident truths" only from Torah.

Thus, I am ready (and perhaps am often obligated) to investigate all reported natural phenomena and to ascertain their truth using the methods of science. However I will not and may not grant "acceptance on faith" to any phenomenon which is not found in *Torat Moshe*.

When a new discovery is reported, announced and heralded, we naturally seek a Torah perspective regarding our understanding and interpretation of this new phenomenon. It is important (even if seemingly superfluous) to note that before one can offer Torah interpretations of the new phenomenon, one must first ascertain whether it is indeed real, i.e. whether it actually exists. Any interpretation given to a nonexisting event will perforce be erroneous. Unfortunately, given the evidence, FC qualifies as such a "nonexisting" event.

It is a well known dictum to any student of Talmud that the sages did not debate matters of existence. In matters of factual and physical existence they would leave the Beis Hamidrash to empirically "check it out". Thus (to cite only one example) the Amora Rav spent 18 months with a shepherd in order to learn which blemishes in an animal should be considered transient

and which permanent (thus disqualifying it for sacrifice in the Beis Hamikdash) (Sanhedrin 5b, and see Levi, Yehuda 1981).

Science, much more than a field with content, is an approach to establishing knowledge, facts and phenomena in the physical world and to find the relationship between such phenomena when they exist. Science has nothing to say about the meta-physical. That is simply beyond its scope, and it doesn't try to (Albeit there have been many misguided scientists over the years who have made foolish statements about the metaphysical - forgetting the self imposed limits of their calling - the empirical study of that which can be empirically studied.)

The methods of Scientific Research are based on a number of basic fundamental principles which have been derived from logic and from years of experience in the examination of "facts". This experience has taught scientists to beware of certain errors and to build into their research safeguards against these errors. This, so they not find themselves accepting that which doesn't exist, or rejecting that which does.

In the following lines we will touch on some of these principles. Understanding them will allow us to better understand the danger in ignoring these safeguards to establishing fact.⁴

BURDEN OF PROOF: In Science the burden of proof rests on those introducing a novel theory or phenomenon; a fact becomes a *scientific fact* only when it has been proven to be true. It is not the responsibility, nor is it within the realm of science to prove that things are not true. Similarly, in the Talmud we find that we assume a Status Quo (*Chazaka*) to continue so long as we have no reason to believe that it has changed. The burden of proof is on the one arguing against the existing Status

4. The basic idea of Halacha as an "empirical" and logical field of inquiry has already been stated by Rav Soloveitchik Zatsal (see Soloveitchik, Rabbi J.B. cited in Blau, 1995)

Quo.(e.g. Babylonian Talmud Baba Metziah 76a). In the same vein, anyone wishing to introduce a "chumra" (stringency) in Halacha carries the burden of proof (Mishna Yodayim 4-3). And in fact, statements for which no proof is offered are often dismissed by the (disparaging) remark, "These are nothing but words of prophecy" (e.g. Babylonian Talmud Baba Bathra 12a).

ANECDOTAL REPORTS as EVIDENCE: Science cannot accept anecdotal reports as proof of a phenomena or of the efficacy of a method, especially when the circumstances surrounding that anecdote are less than clear. Thus, it is impossible to establish a fact when it is unclear under what circumstances that fact occurred. The Talmud states a similar principle when it states that "One cannot learn (a Halacha) from an anecdote" (Babylonian Talmud 130b) i.e. it is not possible to establish a Halacha based on an anecdote about a great man having behaved in a certain way because we are not and cannot be aware of all of the circumstances surrounding that occurrence.

In a scientific research program or report, all variables must be clearly and precisely defined. It is impossible to properly investigate a phenomenon without a precise definition of it. For example, when speaking of a medicine and whether it will help a patient, it is crucial that all details about the patient, his diagnosis, and dosage be clearly defined. It is also important to state what we mean when we say that the patient "improved" - by what measures, and who took the measures. It is impossible to arrive at any conclusions about a procedure or medication if these and many more factors are not clearly defined. It would be wrong to test a procedure with one patient who is at one level of illness and then to generalize and use the same medication with other patients indiscriminately.

PROVING THE EXISTENCE OF PHENOMENA: Although Science is in the business of establishing the existence of facts it cannot really negate the existence of a phenomenon. The best science can do is to say we have

not been able to find this phenomenon to exist (which is not the same as saying it does not exist). As the Talmud says, "A statement to the effect that I haven't seen an event is not proof of its not having occurred" (Babylonian Talmud Kethubot 23a).

CONTRADICTIONARY EVIDENCE: Science can weaken the accepted truth of a phenomenon and maybe even negate it when it finds phenomena which stand in direct contradiction to the first (proposed) phenomenon. In the Talmud, *a m'aaseh listor* (Babylonian Talmud Berachot 16b).

INTELLECTUAL HONESTY especially in the face of "contradictory evidence": Science may not and cannot afford to ignore contradictory evidence. If we are not to arrive at false conclusions we must be deal with such evidence. Either the findings can be understood within the existing theoretical framework, or else, the theory needs to be revised. Contradictory information cannot simply be ignored or "explained-away" with a illogical arguments or with a "flick of the wrist". This is expressed in the Mishna (Talmud, Avot - Ethics of the Fathers 5 -7) "A wise man.... admits the truth - even though he could maintain his own position by arguments available to him - (Rav Obadiah of Bartenuira)and the reverse is characteristic of an uncultured/uneducated man"⁵.

5. It is unfortunate that the proponents of FC fail to share and to adhere to the basic values and principles outlined above. They do not even value basic intellectual Honesty. One of the proponents of FC visited a school in Europe for Special Children which I consult to. She tried to convince them to include FC in their program. The administrators of the school replied that they would be willing to consider adopting the method, but would like to see some of the research literature on the method which they would forward to their consultant. The proponent submitted an article for my perusal (Biklen 1992). Imagine my surprise and sense of frustration when I realized that the article submitted was one of a series of three articles meant to look at the issue from the side of proponents and critics. She had conveniently ignored the article citing the criticisms of the method (Calculator 1992a & b) !!!

Science is **SKEPTICAL and SUSPICIOUS** when it comes to establishing **NEW PHENOMENA**. It will not accept a phenomenon which has not been proven to exist. *Science is even more skeptical when the reported phenomenon runs counter to all expectations and logic based on current knowledge.* It is not that current knowledge decides the truth and the acceptance of a phenomenon and theory. However, when a phenomenon or theory runs counter to the current accepted wisdom it is certainly in the category of a *great novelty* - a surprising finding. As such it will be subjected to very careful scrutiny. As a great scientist once said, "Never trust a fact without a good theory to back it up". Again, we find in Torah a similar sentiment. The Talmudic sages statement upon hearing a novel report of a Halacha - "I haven't heard it, meaning it doesn't make sense to me!" Rashi explains this to mean: Even if you will bring me anecdotal proof to this, if it runs counter to logic, I will not accept it (Babylonian Talmud Eirubin 102b). Furthermore a Halacha which has very unique and novel characteristics cannot be generalized from (Jerusalem Talmud, Trumah Ch. 7)

Facilitated Communication simply does not meet the criteria for established and accepted fact. It is counter-intuitive and has no theoretical base to support it. The "research" reported by its adherents, upon whom the burden of proof lies, is not clearly reported. Its variables, procedures and the diagnoses of the clients are also not clearly reported. The success of FC is based entirely on anecdotal reports, and its purported successes with some children have been indiscriminately generalized to working with others. On top of that, those who have taken the time and made the effort to carefully investigate the method have found evidence contradictory to its claims. It should therefore be abandoned.

The Damage done by the acceptance of the method without proof:

Many people ask: What of it? What and whom does it hurt when people accept and adopt a method like this without conclusive evidence ?

After all, even if it cannot help, can it hurt? Unfortunately, while it may not help, it can, and already has, hurt children, their parents, and their families. Thus:

1. Parents who hear that the child who they had believed to be of limited intelligence is actually of normal intelligence, if not a genius and a holy soul, become filled with guilt about all the things they might or might not have said in front of the child all these past years, thinking that he doesn't understand.

2. Parents in a number of places around the world have been charged with child abuse (physical and sexual) based on communications made by Autistic children using FC. Children were removed from their parent's homes based on indictments which were based on these communications via FC. And even though, ultimately, no court of law saw it fit to give credence to these messages based on FC, the damage had been done; Families had been torn asunder, parents were broken emotionally and financially, when they had to pay legal fees to defend themselves. One family had to mortgage their home to pay their legal fees. Another man was ousted from his job when the charges were brought. Although the court vindicated him, he didn't get his job back.

3. Parents who use FC tend to stop using other methods which are slower but more sure-footed in helping their children become more functional people. A pamphlet distributed at a FC workshop for teachers in Jerusalem advocates the adoption of FC for use "with any child with developmental aphasia or with language development below their chronological age" (that is, any child whose language is not well developed including children with learning disabilities). Thus, the use of F.C. has been extended for children with both greater and smaller problems than those with whom it was first developed.

4. Those who work with the children using FC, often decide the child's

program and make plans for him by asking for the child's opinion via FC. If what we are getting from FC is truly the child's communications, why that's great - true empowerment! However, if it isn't the child's voice coming through; then we must ask who gave the facilitators the right to decide for them and to foster their ideas on the child as if they were his own.

5. Lately, there has been a tendency to give children IQ tests using FC as the communication medium. The results of these tests play a very central role in deciding the child's learning program and level of services that he will receive in school and from the state. Again, if the IQ score based on FC is meaningful, that's fine. But if not, then we may end up depriving the child of sorely needed services and instead place him in programs which will cater to someone else's fantasy of what he might need - but not to his actual needs!

6. Parents hopes are falsely raised and, unfortunately, will in the end be dashed again. The proponents of FC, like the proponents of other Magic Cures, actively proselytize for its use. They verbally attack parents demanding they use the method with their child and, should they be hesitant, asking them what right they have to deny their children this wonderful cure. Like all true believers, they see every new child added to the fold as additional proof for their belief. All such Magic Cures are introduced with a "Bang!", amid lots of public relations hoopla and hype. Everybody gets caught up in the excitement. Unfortunately, soon enough, when the magic of the "cure" doesn't materialize, when the child does not improve, when his behavior remains as dysfunctional as it was before, the parents of these children silently abandon the "cure" and again become despondent. They do this quietly because they are broken people carrying a heavy burden to begin with. They often suffer from seeing their child's limitations as being somehow a reflection of their own imperfections. When the method does not work for their child their initial response is to blame not the

inadequacy of the method, but rather the inadequacy of their child, and by extension of themselves (especially since there are still many others 'out there' singing the method's praises). Adherents give up the method quietly, one by one. The proponents can still gain adherents for a while, but as time goes on, less and less so. There will be no public announcement for the death of FC, it will die a slow death, but in the throes of its death it will hurt many parents and children, one at a time. I've seen this happen before with another magic cure [Doman (1974) & Delacato's (1966) "patterning"] and have already witnessed a couple of cases of broken parents who have used FC.

Professionals working with the disabled have a responsibility to get the best professional training they can, and to learn how to tell fact from fiction, as well as real help from what's faddish. As Jews I feel we have a special responsibility to remain an AM SEGULAH and beware of becoming merely an AM SHEL SGULOT.

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