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# Behavior Analytic Goal Setting and Tracking at a Therapeutic Summer Camp: An Approach for Children with Autism Spectrum and Other Disorders

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BEHAVIOR ANALYTIC GOAL SETTING AND TRACKING AT A THERAPEUTIC  
SUMMER CAMP: AN APPROACH FOR CHILDREN WITH AUTISM SPECTRUM  
AND OTHER DISORDERS

by

Whitney Boeder

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ABSTRACT  
BEHAVIOR ANALYTIC GOAL SETTING AND TRACKING AT A THERAPEUTIC  
SUMMER CAMP: AN APPROACH FOR CHILDREN WITH AUTISM SPECTRUM  
AND OTHER DISORDERS

by

Whitney Boeder

The University of Wisconsin-Milwaukee, 2012  
Under the Supervision of Dr. Klein-Tasman

Autism Spectrum Disorder (ASD) is a developmental disorder characterized by abnormal or impaired development with deficits in social interaction, communication, and a restricted repertoire of interests and activities. There are a number of treatment options available, such as individual or group therapies. Therapeutic summer camps provide a unique service to individuals with ASDs, as well as an opportunity to create, set, and track behavior analytic goals over the summer. Research has demonstrated that summer camps are a promising therapy environment. Research on goal setting and tracking has shown promising results for progress toward behavioral goals. There is limited research on therapeutic summer camps for children with ASDs, and approaches to goal setting and tracking therein. In this study, an approach is presented for therapeutic summer camps to create, set, and track goals and measure progress over the summer. Parents, campers, and camp staff compiled three goals to be worked on for the summer. Each week, camp staff rated goal progress for each camper. At the end of camp, goal progress was assessed to determine how much progress was made for each goal for each camper was assessed. It was determined that each camper made at least some progress on one of their three goals, with some campers making gains more substantial progress on all three of their goals. These findings provide evidence of progress toward individualized goals in the summer

camp setting and support the feasibility of creating and tracking behavior analytic goals at therapeutic summer camps.

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Therapeutic summer camps for individuals with special needs have existed since as early as 1929 (Amsden, 1936). Recently, they have become more popular as a treatment option for individuals with Autism Spectrum Disorder (ASD) (Briery & Rabian, 1999; Hung & Thelander, 2010; Michalski, Mishna, Worthington & Cummings, 2003; Walker et al., 2010; Westervelt et al., 1998). There is little research on a behavior analytic method for therapeutic summer camps to create, set and track progress on goals over the summer. This information can serve a very important role as goal setting and tracking provide an opportunity to both personalize goals to meet individual needs, and can also help to guide camp curricula to better meet the needs of individual campers. In this introduction I review literature related to therapeutic summer camps, goal setting and tracking, and ASDs, are reviewed and how therapeutic summer camps can create, and track behavior analytic goals are discussed.

In the following sections, literature related to ASDs and their treatment, how therapeutic summer camps have set and tracked behavior analytic goals are reviewed. First, a brief overview of ASD is provided. Next, a section summarizes interventions and treatment options for individuals with ASD. Third, a section is presented on therapeutic summer camps, both for children with ASD, and for children with other conditions. Fourth, recommendations for best practices tracking progress towards goals are summarized. Finally, a summary and rationale for the current study is provided.

### *Autism Spectrum Disorders*

Autism spectrum disorder (ASD) refers to a group of developmental disorders characterized by the “presence of markedly abnormal or impaired development in social interaction and communication and a markedly restricted repertoire of activity and interests” (APA , 1994). Within the literature, there is a general agreement that ASDs are related to



abnormalities within the brain. There is also some consensus that unknown environmental factors may play a role (Kabot, Masi and Segal, 2003). There are number of well known social, emotional and cognitive difficulties associated with a diagnosis of Autism Spectrum Disorder. People with ASD often display deficits in both verbal and nonverbal communication and social interaction. Children will often display difficulties orienting to social stimuli, and motor and attention impairments.

Along with the various social and emotional difficulties experienced by individuals with Autism spectrum disorder, cognitive deficits are common, presenting in varying degrees of severity. In one study, 75 children with a diagnosis on the autism spectrum were given clinical assessments to measure cognitive ability and adaptive behavior. The study determined that 55% of the individuals had an intellectual disability (defined by an IQ of less than 70), 16% had a moderate to severe intellectual disability (an IQ of less than 50), 28% had an average level of intelligence (IQ between 85 and 115) and 3% were of above average intelligence (IQ greater than 115) (Charman, Pickles, Simonoff, Chandler, Loucas & Baird, 2011). Many people diagnosed with ASD are within the average range of intellectual functioning, yet still struggle emotionally and socially in terms of adaptive functioning within society (Meyer, 2001). ASD's also affect the parents. Johnson, Frenn, Feetham and Simpson (2011) discuss how past research has shown that parenting a child with ASD is more stressful than parenting other children, with the specific non-traditional behaviors of ASD being the stressors.

### *Interventions for Autism Spectrum Disorders*

Fortunately, parents have a number of treatment options. Including biomedical treatments as well as a variety of psychological approaches (Walker, Barry and Bader, 2010). Because of the nature and variety of ASDs, the effectiveness of each treatment type varies by individual.

However, research has shown efficacious results for individual therapy, and deems group therapy and summer camps as promising areas of treatment (Walker et al., 2010).

Likely the most commonly chosen intervention is individual therapy, in which a therapist works directly with the child and targets specific skills to augment and improve. In the literature, there is some agreement about the necessary components of a successful intervention for individuals with ASD. Three are particularly relevant for the most common form of treatment, individual therapy: "...the curriculum should focus on the social and communication domains, instruction should be systematic with individualized goals and objectives, particular emphasis should be put on teaching for generalization" (Kabot et al., 2003, p. 30). One disadvantage of individual therapy is the lack of social interaction with peers, where the child is able to practice using appropriate social skills. Another option, which improves on the lack of peer interaction with individual therapy, is group treatment. In group treatment, a number of children, both those with ASD and those that are typically developing spend time together learning skills in a supportive environment (Walker et al., 2010). Group treatment is becoming more popular, and can be used to augment individual therapy (Rose & Ankettel, 2009). For instance, in a pilot study examining the benefits of a social skills support group for children with ASDs, parents reported multiple benefits, including new friends for their child, enjoyment of the course, and increased communication from their child (2009). Another option, which has become more popular recently, is therapeutic summer camps as part of treatment, where intervention is conducted within a natural social environment.

### *Therapeutic Summer Camps*

Therapeutic summer camps for children with special needs and disabilities have existed since as early as 1929 (Amsden, 1936). More recently, they have gained in popularity and use

across the country. Therapeutic summer camps exist for a diverse population of individuals, focusing on medical issues, such as epilepsy and craniofacial differences (Cushner-Weinstein et al., in press; Devine & Dawson, 2010) as well as on learning disabilities, problem behaviors, trait anxiety, coping and autism spectrum disorders (Briery & Rabian, 1999; Hung & Thelander, 2010; Michalski, Mishna, Worthington & Cummings, 2003; Walker et al., 2010; Westervelt et al., 1998).

A variety of research on therapeutic summer camps has been performed, most often evaluations of treatment efficacy, effects of summer camp on behavior and parental evaluations of camp success. Nearly all the research is qualitative in nature, employing some behavioral measures, but rarely any quantifiable measures. Research on therapeutic summer camps lends itself to qualitative research, which is more open ended in style, relying on participant observation and interview responses. Various researchers have found that therapeutic summer camps provide a unique service for parents of children with special needs, and for the children themselves (Briery and Rabian, 1999; Shelton & Witt, 2011). Shelton and Witt (2011) found that parents of children with special needs reported less stress and lower psychological distress following a three-day respite camp experience for their special needs children. Briery and Rabian (1999) found that “specialized camping experiences can improve attitudes toward illness in children with pediatric conditions” (p. 187).

Goodwin and Staples (2005) found that teens with physical, sensory or visual disabilities benefited from time at camp with other similarly disabled teens. One teen reported “there was a comfort level being in a social environment where disability was the norm and not the exception” (p. 167). Camps can be used to “foster social acceptance that is necessary for genuine and successful social leisure experiences...” (Devine & Dawson, 2010). Opportunities like this

do not often exist at traditional summer camps, as there are often few, if any individuals with disabilities. Cushner-Weinstein et al. (in press) found that following participation in a summer camp designed for children with epilepsy, significant improvements were made in the areas of social interaction and communication, and responsibility.

There is far less research on therapeutic summer camps specifically designed for individuals with ASD. However, research suggests that children with ASD have higher rates of treatment success when skills are targeted through a socially relevant context, such as school or a summer camp (Walker et al., 2010). Children have a unique opportunity to enhance and expand their skills while still enjoying the leisure and community of summer camp. Many educators suggest using the summer as a time to enhance academic skills, which are lacking or underdeveloped (Westervelt, Johnson, Westervelt & Murrill, 1998). Hung and Thelander (1978) found that parents and camp staff reported positive feedback and enthusiasm following the residential summer camp experience for children with ASD. Walker et al. (2010) examined both therapist and parent ratings of adaptive social skills, using the Adaptive Social Skills measure (ASSM) following participation in a summer treatment camp for individuals with ASD, and found that both parents and therapists reported significant, positive changes in social skills for campers. The ASSM includes 20 items measuring domains such as verbal communication, social interaction, transitions, and attention to task items (Walker et al., 2010). Major limitations of this study are that this is merely a pre-post approach, progress over the course of the summer is not tracked, and measures are nomothetic rather than based on individualized goals. The limited research regarding therapeutic summer camps for individuals with ASD is promising. The design allows for individualized programming and staff are able to actively engage the individual more often and frequently than in traditional individual therapy.

### *Tracking Progress toward Goals*

In addition to being a naturalistic context in which to learn and practice adaptive social functioning, therapeutic summer camps are well suited for goal setting and progress tracking. Staff can be trained to assist campers in identifying and verbalizing their goals in a behavior analytic way. They also are in a unique position to observe how campers spend their time at camp as they grow and develop new skills. If camp staff were taught a way to help create, define and track goals for each camper, campers, their parents, and the camp itself would benefit. Staff could work on enhancing skills cited for improvement from an Individualized Education Report (IEP) from school, or goals provided by a therapist or teacher or by parents or the campers themselves. Tracking goals over the summer and analyzing them for gains made could also measure the effectiveness of the staff and camp. Tracking progress made on goals not only allows for a clear demonstration of success within a given treatment program, but can yield information on areas to be improved within the program, and lead to the development of new goals for an individual. Progress and goal tracking can direct a treatment and rehabilitation program. It can easily be tailored to the individual, and goals can be constantly evolving to reflect an individual's growing skills and needs. Additionally, by making campers part of the goal setting process, and allowing them some control over their goals, they are more likely to succeed (Turner-Stokes & Williams, 2010). Within a therapeutic summer camp, goal setting and tracking provide an opportunity to both personalize goals for an individual's needs, and also to guide camp curricula to better meet individual campers needs.

Very simply, a goal is merely the aim of an action, such as to obtain a specific level of proficiency, generally within a certain time period (Locke & Latham, 2002). Many authors and researchers recommend using the "SMART" acronym when creating goals to track progress over

time. SMART stands for specific, measurable, activity-related, realistic and time-specified (Clarke, Crowe, Oades & Deane, 2009; Siegert & Taylor, 2004; Turner-Stokes & Williams, 2010). One of the most commonly used methods to create and track goals is Goal Attainment Scaling (GAS). GAS is a “method of scoring the extent to which [a] patient’s individual goals are achieved in the course of intervention” (p. 363). A major advantage of GAS is that goals are tailored to the individual and expected progress is tailored to their skill level and ability (Turner-Stokes, 2009). Evidence supports the idea that goals are more likely to be achieved when individuals are involved in the goal setting process.

There are number of steps necessary in GAS. First, goals need to be identified. This is usually done with input from family or caregivers, as well as therapists and teachers. Individuals are reminded of the SMART acronym, to make their goals specific, measurable, attainable, realistic and timely. Once this is done, the ‘expected outcome’ for each goal is defined. After goals are set, and outcomes are defined, the individual is given a timeline in which to work towards the goal. In the case of a summer camp, this timeline would likely be in two-week increments, allowing the individual time to work towards the goal, and time for staff to observe and note progress. At the end of the two week increment, goals would be scored, progress discussed, and new expected outcomes created.

Another method proposed to help individuals create goals is part of the “Self-Determination Instructional Program” designed to help young adults with autism learn about autism, communication skills, life planning and goal setting (Fullerton & Coyne, 1999). During the goal setting unit, young adults perform a series of activities designed to help them create a “picture” of their life now, and their life in five years. This process promotes and facilitates

communication and idea sharing with peers, as well as helping individuals with ASD leave with a more concrete plan on how they might meet their goals.

Goal creation and progress tracking can serve a very important role in designing and implementing treatment for children with Autism Spectrum Disorders, especially during a treatment based summer camp. An important aspect of these goals to maximize clarity and efficacy is to make them behavior analytic. Behavior analysis does not look to the “mind” or cognitive states to find causes of behavior; instead it looks to the organism and its surrounding environment. All aspects of the goals set need to be behavior analytic, that is, they need to be definable, and measurable. Setting a goal to “not yell when I get mad” is not quantifiable, and very difficult to define, and does not suggest a way to achieve the goal. Instead, a goal like “use my breathing techniques so I do not raise my voice” is measurable, quantifiable, and provides an example of how to be successful. Staff at camp could easily determine if progress had been made on the goal, based on the more specific parameters.

When a goal specifies the correct and incorrect response, staff are quickly able to determine if a goal was achieved or not. In this case, if the individual does not raise their voice, and instead pauses to focus on deep breathing, the goal has been achieved in this instance. If the goal was merely “not to yell when I get mad” it is far more difficult for staff to determine whether the individual achieved their goal for a number of reasons. How can staff determine if the individual is “mad”? How is yelling defined? Is yelling different than talking loudly? How can we tell? When goals are not specifically defined, in a behavior analytic way, a number of new questions are raised which must be answered before goal achievement can be rated.

*Summary and Rationale for the Current Study*

In this study, the progress of individuals with Autism Spectrum Disorders and other related disorders toward behavioral goals at a therapeutic summer camp is examined. A behavior analytic approach was used to create, set and track progress on goals. This study not only fills a void in the literature, but also can greatly improve and individualize treatment for individuals with ASD at camp and in other naturalistic settings. This research is idiographic, and seeks to evaluate more singular cases, rather than focusing on a more general sample as with nomothetic research. Using this approach, summer camps and their staff may be better equipped to evaluate progress of campers on individual goals, and the effectiveness of their program, and adapt their programming to better fit camper needs.

### *Hypotheses*

I hypothesize that some degree of progress (defined as an increase of 2 points on each goal by the end of camp) will be made by each participant on each of his or her three goals by the end of camp. I hypothesize that individuals in camp for eight weeks will make greater progress than individuals in camp for four weeks. I hypothesize that campers who have attended camp previously will make greater progress than campers who have not previously attended camp.

### Method

#### *Participants*

Thirty-one individuals with a diagnosis of Autism Spectrum disorder or a related disorder participated in the study. Participants were recruited by phone based on attendance at a therapeutic summer camp in the Midwest for children and young adults with special needs. The program is embedded within a camp for typically developing children. Twenty-three individuals were enrolled in the Tikvah program, for teens, and 8 were enrolled in the Atzmayim program



for young adults. Tikvah is a camp program designed for campers aged 12 to 17, while Atzmayim is designed for campers who have graduated high school and aged out of Tikvah, to offer former Tikvah campers continued support for their transition to higher education, including a vocational training program. Tikvah campers ranged in age from 12 to 17, ( $M= 14.78$ ), with 14 boys and 9 girls. Atzmayim campers ranged in age from 18 to 21 ( $M=19.88$ ) with 4 males and 4 females. Campers came from various places in the US, such as Chicago, Milwaukee, Atlanta, south Florida, and Southern New Jersey. Parents and guardians completed the Adaptive Behavior Assessment System Second Edition (ABAS-II) to provide a general sense of real-world adaptive functioning of the participant group. 23.8% of participants scored at an average range of functioning, 14.3% below average, 23.8% borderline, and 38.1% at an extremely low range of adaptive functioning.

### *Procedures*

*Pre-camp Parent Interview.* Parents were contacted by phone prior to the start of camp and asked to provide three goals they would like their child to accomplish over the summer. Parents were guided to choose and describe goals, which can reasonably be tracked for progress, and were observable and measurable. Parents also were mailed adaptive behavior questionnaires to ascertain level of functioning in a number of everyday domains.

*Staff Training Workshop.* Researchers held a workshop before camp started to educate camp staff about how to identify camper goals at the beginning of camp. Staff were informed of a number of components to consider when identifying goals for each camper. These included a descriptive name, a definition, elaboration for critical parts of the behavior, typical examples of the behavior, and questionable instances (occurrences and non-occurrences). Staff were also instructed to choose a behavior that the child engages in, not an emotion. The behavior should

also be something that is important to change or develop over time, as well as being specific, clear, and easily observable.

*Staff Observation and Camper Goals.* Camp staff talked with each camper to ascertain what goals they would like to work on over the summer. An open-ended question format was used.

*Goal Setting Meeting at Camp.* Camp staff observed the campers throughout the first week of camp and identified potential goals to work on. At the end of the first week of camp, staff met with study personnel to develop a final set of goals for each camper, taking into account goals suggested by parents, campers, and staff observation. Staff were reminded that goals should represent a behavior, be important, specific, observable, realistic, and precise, depend on behavior change from the camper, and be reasonable to rate quickly. When three goals were identified for each camper, staff and study personnel created “Hopes and Goals Thermometers” for each individual goal. The thermometer served as a visual representation of possible goal achievement with a scale from one to 10. The score represents to what degree the camper has accomplished the goal. Benchmarks were created to make it more straightforward to quantify progress.

*Weekly Tracking Sheets and Hopes and Goals Rating Thermometers.* For each camper, a rating sheet (seen in Appendix A) was used to list each goal as well as a description, an elaboration, examples and questionable instances, and a reminder of the rating scale, which runs from 0-10. Each week camp staff spent five to 10 minutes rating each camper on the amount of progress made throughout the week on each goal using the rating sheet. To aid camp staff in assigning ratings to camper progress, a Hopes and Goals Rating Thermometer (see Appendix B) was utilized. The thermometer served as a visual representation of possible goal achievement

with a scale from one to ten. The score represented the degree to which the camper had accomplished the goal. Benchmarks were created such that the amount of progress made between tracking was more easily quantified. At the end of each week of camp, camp staff rated progress made on campers' goals on the 10-point scale from the thermometer.

*Post-Camp Parent Interview.* At least one month after the completion of camp, study personnel contacted parents by phone about their impressions of the summer, and thoughts on their child's progress.

### *Results*

Progress made on goals was examined. Good progress was defined as an increase in goal rating by at least 2 points, and excellent progress was defined as an increase of at least 4 points. Data were examined to determine how time at camp and number of years at camp affected progress. Data were also examined to determine which goal categories produced the most progress and which categories of goals were chosen to track by parents, campers and staff.

Using the goal tracking sheets, goal score increases were determined for each camper's set of three goals that were chosen to be tracked at camp. Progress was variable across campers, but nearly all campers made good progress on at least one goal, with two-thirds of campers making excellent progress on one goal (see Table 1). Of 31 campers, 28 (90.3%) made at least good progress on one goal, 22 (71%) on two goals, and 16 (52%) on three goals. Mean goal progress for each participant ranged from a one point average gain over the summer, to an average gain of 5.67 points.

To find out if years spent at camp had any effect on goal progress, comparisons were made between campers who were first starting camp and campers who had spent up to five or more years at camp. As seen in Table 3, the vast majority of participants across all lengths of

time at camp made good progress on at least one of their goals, and half made good progress on all three of their goals. There was no noticeable difference in good goal progress for campers across number of years at camp. Children seem to continue to show progress toward their goals even if they have been at camp for many years. There is some evidence that campers who have been at camp for more than five or more years may possibly be making more progress, particularly if they were in the Atzmayim program at the time of the study. Conversely, on average the more years spent in the Tikvah program appeared to be associated with less progress, possibly indicating a developmental need for those campers to move into the Atzmayim vocational program.

To examine whether the nature of the program (Tikvah - a general camp program; Atzmayim - a vocational training program) made a difference in goal achievement, goal progress was compared between the two (see Table 1). All Atzmayim campers made good progress on all three of their goals, and half made excellent progress on their three goals. Half of the Tikvah campers made good progress on all three of their goals, and one-fourth made excellent progress on all three of their goals. Atzmayim campers appear to making more excellent and good progress on average than Tikvah campers. This may be accounted for by differences in staff, or programming. It may be that the vocational training provided by Atzmayim has more inherent didactics in its approach, which result in greater success for Atzmayim campers.

Overall, four week and eight campers made similar gains over the course of camp. I am unable to state with certainty that the length of time at camp affects progress, as we are unable to track how each camper's goals were set. There is however, evidence that most of the campers at camp made gains over the summer. Length of time at camp does not appear to be accounting for changes in goal achievement across campers.

To facilitate further analysis of goal progress, goals were categorized into one of six categories; home living, self-care, self-direction, leisure, social, and communication. To determine if a specific category of goals resulted in greater improvements in ratings over the summer, goals with progress were compared to goals pursued. Goals chosen by parents, campers, and camp staff were variable, but overall, the greatest number of goals chosen fell into the category of self-direction, followed by social, and communication (see Table 5). Communication had the highest rate of goal achievement with 81.8% of goals achieved out of those pursued. This was closely followed by self-care at 75%, and self-direction at 74.1%. Leisure had achievement rates of 62.5%, social at 61.1% and home living at 50% (see Table 6).

## Discussion

### *Summary and Implications*

In this study, progress toward behavioral goals at a summer camp program for individuals with autism spectrum and related disorders was examined. A behavior analytical approach was used to create, set and track progress on goals. The hypothesis that each camper would make some progress on each of his or her goals by the end of camp was supported. Each camper made some progress, with two-thirds of campers making good progress on their goals, or a gain of at least two points, and one-third of campers making excellent progress, or a gain of at least four points on their goals. The second hypothesis, that campers attending camp for eight weeks would make greater progress than campers attending for four weeks, was not supported. The hypothesis that campers who had previously attended camp would make greater progress than new campers was also not supported. There was no noticeable difference in good goal progress for campers across number of years' experience at camp. Children seem to continue to show progress toward their goals even if they have been at camp for many years. There is some

evidence that campers who have been at camp for more than five or more years, especially those participating in vocational programming, may possibly be making more progress; however, staffing differences across the programs makes definitive conclusions challenging. Each camper made progress on some of his or her goals throughout the summer. Overall, these results provide preliminary support for the usefulness of the camp experience for improving camper functioning, and indicate that creating and tracking goals at camp is feasible for staff.

#### *Limitations and Future Directions*

This study is one of very few which addresses both the unique environment of summer camp and the process of setting and tracking goals. There is a plethora of literature on summer camps, and on goal setting, but few combining the two. These results of this study indicate that specific programming for goal setting and tracking at summer camps may be useful within a camp setting. This study provides pilot support for progress toward individualized goals in the camp setting. With limited staff training in this pilot study, each camper made good progress on at least one goal, with some campers making excellent progress on all three goals. Although this study has contributed to this literature, there are still a number of limitations, which prevent the drawing of more definitive conclusions. Limitations and potential remedies are detailed below.

*Lack of Formal Baseline.* In this study, there was no formal baseline data taking, in which camp staff observe campers on a number of basic activities, which fall into the six goal categories used. Without this baseline, there was no prescribed way for camp staff to assign a stable base goal rating for each camper. A stable baseline rating serves to establish the current level of functioning from which other data points can be compared. If goal progress is tracked and charted after the baseline is completed, any changes seen can more easily be attributed to time spent at camp. By establishing a baseline rating for behavior, changes or improvements in

behavior can be more reliably attributed to the camp program. Ratings could be made more frequently to allow more opportunities to individualize curriculum and care to facilitate goal achievement. Under an eight-week schedule, the first week of camp could be used to familiarize campers and staff with each other, and serve as a formal baseline for camp staff to observe campers and note areas of difficulty or success. By rating each day, camp staff can quickly establish a baseline. This first week can also be used to create and set goals with campers themselves, followed by seven full weeks of rating goals two times a week. For four-week campers, the same schedule could be used, in an abbreviated manner. Based on the results in this study, a camp stay with increased opportunities for rating goals and individualizing curriculums accordingly, would likely foster greater goal achievement.

*Lack of Diagnostic and other Background Information about Campers.* Another limitation is the lack of diagnostic and other potentially useful background information received on each camper. Because not all parents or guardians returned sufficient demographic information, and comprehensive diagnostic evaluations of each camper were not conducted, analyses based on diagnosis could not be made. Analyses of progress based on diagnosis could potentially have shed light onto different diagnoses affect achievement of goals at camp. With further research we could come to find that severity of autism symptoms, for example, affects how much goal progress they make, or what goals they make the most progress in. Relatedly, by providing camp staff with more background information on each camper, such as interests, skills, deficits, preferences, and preferred reinforcers or activities, staff may have greater success selecting achievable goals to track at camp. If staff are more familiar with each camper, they likely can choose goals that are specifically appropriate and achievable at camp for each camper.

Increased parental interviews could also be helpful to camp to both learn more about the campers, and to follow up with opinions about improvements seen within their campers. Within this study, parents were contacted both prior and following camp by research personnel to discuss goals and improvements seen (though these data are not reviewed here). In future studies, once goals were established at camp, parents could be asked to assign a rating for those goals, and again assign a rating following camp so that research personnel could analyze parental perceptions of improvement as well as camp staff perceptions. Parents could be contacted immediately following completion of camp, and again four weeks later to see how consistent their ratings are, or if gains are sustained following camp. It is also possible that their ratings immediately after camp are artificially higher based on seeing their child after not seeing them for an extended period of time while the child was at camp.

*Lack of Inter-rater Reliability Procedures.* Perhaps the greatest limitation is the lack of establishment of interrater reliability amongst camp staff that rated campers on goal progress. One staff person rated the campers on their goals once a week. With no one else rating it difficult to discern how thorough the rater was, or if their rating is at all biased. With multiple raters, interrater reliability could be examined to discern if there is a high level of agreement on goal attainment scores for both raters. Camp staff could be trained to take brief observation notes while campers engage in various activities during the day, and upon completion of the day could make further notes to insure completeness and clarity. These notes could then be referenced at the time of rating to help camp staff more accurately recall the events of the week. Since camp staff are responsible for rating multiple campers, the ability to reference notes and recall activities and behaviors could be immensely beneficial. This can help insure that rater drift is not occurring and ratings are consistent. In addition to reducing drift, interrater reliability needs to be



addressed in the future. In this study, only one staff person rated the campers on their goals once a week. With multiple raters, interrater reliability could be examined to discern if there is a high level of agreement on goal scores for both raters.

*Paucity of Research Base for Camp-Based Interventions for ASD.* Another limitation is that there is very little research about creating and tracking behavior analytic goals in a camp setting. Because of this limited research, there was little literature available for research staff to base their training on. Increased research on implementation and creation of behavior analytic goals within the unique summer camp setting would not only benefit the expanding field of behavior analysis, but also could formally guide therapeutic summer camps in ways to better foster goal achievement. In theory, identification and tracking of goals at camp increases progress because it identifies specific behaviors to attend to, though this assumption has not actually been tested. If staff are aware of what goals campers are working on and struggling with, they can adjust their approach to better assist campers with their goals.

### *Conclusion*

Therapeutic summer camps provide a unique opportunity for special needs campers to enjoy a leisure camp experience while simultaneously receiving the support and assistance that they need. By setting and tracking behavior analytic goals, progress can be quantified and measured more accurately. This can also inform programming and be used to specialize training and support for each camper's unique set of needs. Despite the limitations of this current study, the findings are still promising.

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## Appendix A: Example Weekly Goal Tracking Sheet

**Camper Name:****Name of Goal or Hope:**

Please use this thermometer to make notes about “anchors” to try to keep your ratings consistent across the summer.

Name of Goal		Description	Rating
1.	Initiates Conversation with Peer	<ul style="list-style-type: none"> <li>-Definition: Begins talking to another camper</li> <li>-Elaboration: Begins talking when the other camper has not yet talked with them in that conversation.</li> <li>-Examples: Camper says “Hi, what are you up to?”</li> <li>-Questionable Instances: Behavior is counted even if other camper ignores them. A “hello” in passing does not count.</li> </ul>	5
2.	Asks Adult for Help	<ul style="list-style-type: none"> <li>-Definition: Camper asks an adult for help accomplishing a task, or asks them a question regarding information they need to know to complete the task themselves.</li> <li>-Elaboration: Camper either approaches the adult or asks during a conversation.</li> <li>-Examples: “Can you help me tie my shoe?”, or “How do I tie my shoe?”</li> <li>-Questionable Instances: Adult cannot be a peer. Must be staff. Does not count if the inquiry is after staff has approached them about needing help.</li> </ul>	6
3.	Stands up for Herself and What she Wants	<ul style="list-style-type: none"> <li>-Definition: Says a thought or idea that goes against the ideas already mentioned from a person or group of people. Or says what she wants (to do) before others do.</li> <li>-Elaboration: Expresses her own desires when they are different or independent from those of others.</li> <li>-Examples: After others mention they would like to do X activity, she says she would like to do Y activity.</li> <li>Questionable Instances: If some people say one thing and others say another thing and she chooses one, this does not count.</li> </ul>	4

### Appendix B: Hopes and Goals Rating Thermometer

Please use this thermometer to make notes about “anchors” to try to keep your ratings consistent across the summer.

**Camper Name:**

**Name of Goal or Hope:**

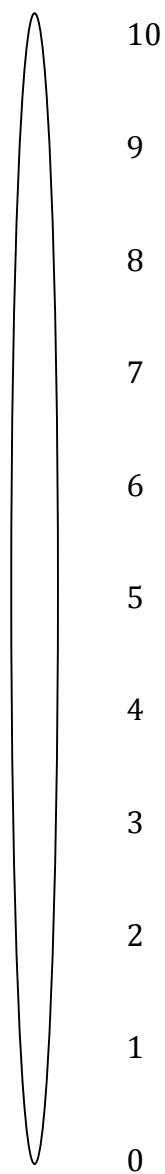


Table 1.

*Time at Camp and Number of Children with Progress on 1, 2, or 3 Goals*

Amount of Progress	Time At Camp	N	1 Goal	2 Goals	3 Goals
Good	4 weeks	11	10	7	5
	8 weeks T	12	10	7	4
	8 weeks A	8	8	8	7
	All	31	28	22	16
Excellent	4 weeks	11	5	3	0
	8 weeks T	12	6	4	2
	8 weeks A	8	7	6	4
	All	31	18	13	6

Table 2.

*Number of Years Attending Camp and Number of Goals with Good or Excellent Progress*

<i>Years at Camp</i>	<i>Number of Campers</i>	<i>Number of Goals Total</i>	<i>Good Progress</i>	<i>Excellent Progress</i>
1 Years	n= 11	33	22	11
2-3 Years	n= 9	27	24	11
5+ Years	n= 10	30	23	15

Note: Data about number of years at camp unavailable for one 8-week Tikvah camper

Table 3.

*Number of Years Attending Camp and Number of Children with Good or Excellent Progress<sup>1</sup>*

Amount of Progress	Years At Camp	N	1 Goal	2 Goals	3 Goals
Good	1 years	11	10	7	5
	2-3 years	9	8	7	5
	5+ years	10	9	8	6
	All	30	27	22	16
Excellent	0-1 years	11	6	4	1
	2-3 years	9	5	4	2
	5+ years	10	7	5	3
	All	30	18	13	6

Note: Data about number of years at camp unavailable for one 8-week Tikvah camper



Table 4.

*Goal Categories Suggested to Track at Camp by Parents, Campers and Staff*

<i>Category</i>	<i>Parent</i>		<i>Camper</i>		<i>Staff</i>		<i>Total Goals</i>
	<i># Goals</i>	<i># Campers</i>	<i>Goals</i>	<i>Campers</i>	<i>Goals</i>	<i>Campers</i>	
Communication	14	13	9	8	21	15	44
Home Living	1	1	4	4	7	7	12
Leisure	5	5	12	9	10	9	27
Self Care	16	13	9	8	10	9	35
Self Direction	35	21	29	19	28	18	92
Social	10	9	24	18	17	14	51

Table 5.

*Goal Categories and Number of Goals with Progress*

<i>Category</i>	<i>Goals Pursued</i>	<i>Goals with Good Progress</i>	<i>Goals with Excellent Progress</i>
Communication	22	18	6
Home Living	6	3	3
Leisure	8	5	4
Self Care	12	9	7
Self Direction	27	20	10
Social	18	11	7