Enhancing Exchange of Knowledge on the Practice of Applied Behavior Analysis

Harper C. Thomas
Portland State University

Recommended Citation

Thomas, Harper C., "Enhancing Exchange of Knowledge on the Practice of Applied Behavior Analysis" (2022). *University Honors Theses.* Paper 1169.
https://doi.org/10.15760/honors.1238

Enhancing exchange of knowledge on the practice of Applied Behavior Analysis

Harper C. Thomas

An undergraduate thesis submitted in partial fulfillment of

requirements for the degree of

Bachelor of Science

in

University Honors

and

Psychology

Thesis Advisor

Dr. Brenna Wood

Portland State University

Winter 2022

Enhancing exchange of knowledge on the practice of Applied Behavior Analysis

A Note on Language

Individuals may prefer to self-identify using person-first (i.e., "person with ASD") and/or identity-first language (i.e., "autistic person"). This paper will be using both interchangeably, reflecting language use in research, how autistic people self-identify, and discussions about those on the autism spectrum. Additionally, people on the spectrum may prefer to be called "nonvocal" rather than "nonverbal," which is a common term used in research. When possible, "nonvocal" will be used to identify those who do not use verbal communication and may use other means to do so, such as augmentative and alternative communication devices (AAC). "Nonverbal" will be written to accurately reflect its use in evidence and research.

An Overview of ABA

Applied behavior analysis (ABA) - originally a method of studying behavior - is currently an intervention style that utilizes operant conditioning and behaviorism to teach and address behaviors that support the development of autistic students. As it has developed, ABA has been applied to behaviors of neurodiverse individuals, especially school-age children, to supplement the challenges many of these students face in school. ABA has become a well-known intervention to support the learning of autistic students, who often need support in developing skills such as shared attention, imitation, gesturing, and initiating and/or comprehending social cues (vocal or nonvocal) (Roane et al., 2016).

Several practices that come from ABA methodology are considered amongst the 28 "evidence-based practices" (EBPs) (Steinbrenner et al., 2020). These practices are considered to have "clear evidence of positive effects with autistic children and youth" (Steinbrenner et al., 2020 p.7). While not all practiced strategies and interventions are EBPs, those that do have this

designation are distinguished as empirically supported and therefore encouraged for interventions. Other strategies exist that have yet to be studied and supported by research but, based on a professional's experience, have been found to be useful in aiding a student. Some strategies, however, are marketed as effective or as "treatment" for ASD (implying the need to cure autism), such as diet changes, homeopathy, and medication (National Autistic Society, 2019). Such programs are unsupported by research and may cause risk to clients. Investigating and highlighting those that are empirically supported ensures that more efficacious, ethical, and valid practices will be circulated.

ABA techniques are characterized by their identification of a behavior's function (i.e., why it occurs) as well as environmental factors that contribute to its occurrence, which can be adjusted to influence behavior (Dixon et al., 2012). An autistic student who goes through an intervention program at school might experience the following practices if an ABA-based method is chosen by the school psychologist, speech-language pathologist, special education teacher, or a behavior analyst.

Functional Behavioral Assessment (FBA)

When determining the function of a specific behavior in an autistic student, it is common practice to first conduct a functional behavioral assessment (FBA). This assessment seeks to identify possible factors that precede and follow a student's behavior (Wong et al., 2015; Sam & AFIRM, 2015a). The goal is to hypothesize the potential purpose of the behavior of interest and create a plan to address the behavior (Sam & AFIRM, 2015a). Those who conduct FBAs may observe the student in different settings and interview guardians and teachers. FBAs can also be more involved, with the assessor not only observing, but purposefully changing events or factors in the student's environment to see if they affect the behavior of interest. An analysis of ABA

practices found that hundreds of studies have shown that intervention plans based on FBAs "are more effective at reducing atypical behavior than are non-FBA based interventions," and lead to the use of more reinforcement-based interventions - often considered ideal in the behavioral therapy world (Roane et al., 2016 p.30).

Reinforcement (R)

A behavior can be encouraged with reinforcement: anything implemented after a behavior occurs that increases the chance of a behavior (Wong et al., 2015; Sam & AFIRM, 2015d). One example of reinforcement often seen in schools is a token economy, giving a student a token every time they carry out the desired behavior, such as raising their hand to speak rather than calling out. When they collect enough tokens, the student may exchange them for free time, a preferred activity, or a toy. Reinforcement is a highly encouraged method for intervention, as it is often very appealing to the student and is individualized to the child's preferences and motivators. Reinforcement is also often incorporated into other strategies, as it is easy to use, implement, and layer with other methods.

Prompting (PP)

Prompting is another ABA-based method commonly used in schools. Prompting is "a cue or signal provided" from a teacher given to the learner to achieve a behavior (Sam & AFIRM, 2015c). Students can be prompted in several ways towards a response, through visuals like pointing, verbal cues, and instructional videos or images. Prompts can provide added scaffolding when a student is learning new behavior and lead to mastery of that behavior with practice. Over time, it is expected for the prompter to fade the use of the prompts to allow for internalization of and independence with the skill (Sam & AFIRM, 2015c). Prompting can be as simple as finding their seat in class by pointing where to go or more complex in showing a visual chart of how to

wash their hands. Prompting also provides a chance for students on the spectrum to practice imitation of others and modeling behaviors - a task many on the spectrum struggle with (Scott 2019).

Discrete Trial Training (DTT)

DTT is a useful tool for introducing a new behavior in response to a stimulus (Sam & AFIRM, 2016). DTT is one of the earliest ABA methods, developed in the '70s, and focuses on breaking down a behavior into smaller teachable steps that are taught repeatedly to a student (Roane et al., 2018). Students are prompted to say or do a certain response and are reinforced when they do it correctly, such as identifying an object. DTT is quite straightforward and is often viewed as the only style used in ABA, resulting in a rather narrow perspective of what ABA entails (Demchak et al., 2020; Simpson, 2001). While there are certainly more methods from ABA, DTT has been evolving as well, leading to engaging and personalizable tools such as the Picture Exchange Communication System (PECS). PECS is a form of alternative communication to assist communication deficits, which can be used as early as preschool (Steinbrenner et al., 2020; Sam & AFIRM, 2015b). Students are taught to give a picture or symbol to a teacher in exchange for the actual item - very similar to the prompt and delivery of a verbal or physical response in DTT. PECS has added steps in its process focused on building sentence structure from the images and responding to the question "What do you want?" which can be incredibly helpful in self-advocation for a student's needs and wants. As a student's skill increases, PECS can become more complex and commentation throughout the day becomes easier with more words and phrases acquired.

Pivotal Response Training (PRT)

This method of ABA intervention is naturalistic, focusing on "motivation, responsivity to multiple cues, self-management, and social initiations" (Brock et al., 2017, p.2224). PRT can be implemented throughout the school day within typically occurring activities and routines, such as recess or free time, which are full of natural opportunities to practice social skills. To keep students motivated, PRT incorporates student choice whenever possible (i.e. picking the toy to play with) and varying the tasks that are requested of them. Moreover, peers and teachers of students with ASD can be trained to implement PRT (Brock et al., 2017; Suhrheinrich et al., 2018). Similar to DTT, implementers are taught to recognize how a task - such as putting on a coat for recess or playing with another student - can be broken down into steps that they assist the student in completing. As the student practices, the support provided by their peers or teacher can be faded. It is the responsibility of those implementing PRT to vary the tasks and responses to keep the learner engaged and grow awareness that processes are not always linear. For example, there is great applicability in this method as well as the desirable factor of personalization. PRT can be tailored to events and environments the student frequents.

Punishment (P)

A final practice worth mentioning due to contention over its level of use is punishment - which is not designated as an EBP by the National Clearinghouse on Autism Evidence and Practice (2020). In behavioral therapies, punishment is considered as anything that follows a behavior that decreases the likelihood that it will continue in the future (Trump et al., 2018). While the term "punishment" has a negative connotation - and has in the past accurately included the use of harmful methodology - modern ABA does not prescribe to use of harmful methods. Instead, punishment implies "response-contingent delivery, removal, or withholding of stimuli" that would decrease the likelihood a behavior would occur (Wilder et al., 2021). For

example, a desirable item like a toy may only be made accessible when the student exhibits the target behavior. In the Behavior Analyst Certification Board®'s (BACB®) ethics code, it is required for Board Certified Behavior Analyst®'s (BACB®) to use all other methods (like those previously mentioned) before resorting to punishment (BACB, 2020, p. 12). This measure is in place as there are concerns over its possible side effects and the possibility for some punishment methods to be more restrictive or intrusive. Punishment methods may also at first increase an unwanted behavior, thus requiring consistency in its delivery and timing if it is utilized (Trump et al., 2018). Punishment is not implemented in modern ABA arbitrarily or with intent to cause harm or discomfort to the student. This is one of the several components of ABA that lack clarity when discussed amongst professionals in different fields, contributing to an ongoing debate of ABA's efficacy and value.

Relevance of Topic

ABA is a developing field that yields extreme benefits for those who receive the proper implementation of the intervention style. Social, learning, communication, and more implicit skills from the "hidden curriculum" can be successfully taught through ABA techniques.

The hidden curriculum includes "specific requirements and behaviors that an individual is implicitly supposed to know for each of the different environments and grouping structures they encounter" (Scott, 2019 p. 122). While the hidden curriculum is often acquired quickly, many with social impairments (such as those associated with ASD) struggle to gather this information without explicit instruction. Interventions such as ABA seek to supplement this knowledge gap by teaching these everyday skills in a variety of ways - fitting the best method to the individual.

Despite ABA's proven usefulness, it is frequently met with outdated perceptions of what ABA's goals are by the public, professionals in various fields, and published articles (i.e. Shyman

2016). The aforementioned practices of ABA may be implemented in other fields under different names and terminology, possibly causing those practitioners to not realize that they share methodology with ABA; the same ABA that they might discourage when the term "ABA" is invoked. Misrepresentation of ABA "may be harmful to individuals who could benefit from ABA but avoid it" due to mixed messages causing uncertainty (Cox et al., 2018, p. 278). However, these misconceptions can be starting points for meaningful discussions with the intent to clarify what modern ABA interventions entail. If such discussion is fostered and encouraged, more people could be confident in accessing it.

Many professionals utilize interventions grounded in ABA, including psychologists, special educators, speech therapists, and occupational therapists. Starting in 1998, practitioners began to be licensed by the nonprofit Behavior Analyst Certification Board® (BACB®) (Roane et al., 2016). Currently, 33 states have licensure programs to certify and regulate practicing behavior analysts (BACB). State-level BCBA organizations hold licensed practitioners to an ethics code that details their responsibility in practice and those they work with, teach, and research. In Oregon, some school districts hire BCBAs who are licensed by the Oregon Health Authority's Behavior Analysis Regulatory Board). One pathway to BCBA certification requires 2,000 hours of field experience (a portion of which, supervised), a concentration of coursework in ABA, and a degree from a qualifying institution - after which, a comprehensive passing exam is taken[1]. Senate Bill 358[2], passed in 2021 reiterated the allowance for behavior analysts to provide care in the state. This bill also allows for insurance to cover the costs of ABA services.

ABA is evolving; within the last few years alone, BACB has enhanced member requirements, their ethics code, expected language use, and standards for those under their

---

[1] For more details, please refer to: https://www.bacb.com/bcba/
[2] See bill at: https://olis.oregonlegislature.gov/liz/2021R1/Measures/Overview/SB358

certification (BCBA, 2021). There are also potential avenues of improvement in how ABA education is taught and maintained (Fennell & Dillenburger, 2018). There are currently pushes for interdisciplinary exposure and cooperation, with aims to dispel outdated stereotypes about the intervention style and to collaborate on providing care for clients (Hanley, 2021; Kelly et al., 2019). Along with the growth in ABA are counter-arguments against the practice - from researchers, professionals, families, and autistic individuals. Concerns include terminology use, advocation for autistic individuals (Cox et al., 2018), ethical concerns (Wilkenfeld & McCarthy, 2020), that supporting research lacks adequate data collection (Roane et al., 2016; Mohammadzaheri et al., 2014), and a conflict of interests in autism intervention researchers causing bias in results (Bottema-Beutel & Crowley, 2021). Those who make these claims push for the advancement and improvement of ABA - hoping to improve its application and encourage the use and enforcement of other methodologies by state regulations.

A portion of the backlash against ABA comes from autistic individuals who are included in the growing neurodiversity movement. This movement includes anyone who has "a condition that renders their neurocognitive functioning significantly different from a "normal" range and neurotypical people who advocate for the latter's rights" (Kapp, 2020 p. 2). Furthermore, the movement seeks to call out existing stigmas and reclaim the medical categories put on them (Kapp, 2020). Listening to these first-hand accounts and investigating where ABA went wrong for them is key to improving the practice. Their opinions will be considered when making recommendations in this proposed thesis.

Thesis

The degree of discord in the field calls into question the level of endorsement it is given as the most recommended practice to be provided to K-12 students (Gorycki et al., 2020). The

purpose of this thesis is to A) demonstrate the act of translating the rhetoric of behavioral therapy into more understandable explanations, B) characterize the disconnect between ABA supporters and non-supporters, and C) suggest ways to reconcile the discord through recommending changes for university-level ABA programs. I argue that ABA programs will benefit through greater inclusion of interdisciplinary and provider-client collaboration in their curriculums to increase its success when implemented in the field. Programs must also instill a desire to discuss, respond and act on criticisms they may face to promote a more approachable and accessible ABA. Collaboration, responsiveness, and accessibility can support the evolution of ABA into an increasingly holistic, adaptive method. Such practice will both enhance students' education and public perception of ABA to prove its goal is to support individualized student experience and learning.

Literature Review

One of the traditional definitions of applied behavior analysis is the application of behaviorism principles to influence specific behaviors (Baer, Wolf, & Risley, 1968). Behaviorism is based on the belief that all behavior is a response to stimuli and serves a function (Demchak et al., 2020). By identifying what occurs before behaviors (antecedent), the characteristics of that behavior, and what follows (consequence), ABA practitioners can implement practices that support the individual's needs. Finding the function of the behavior (e.g. conducting an FBA) is the encouraged first step to aid in identifying the most appropriate intervention to address a challenging behavior that an individual might be exhibiting. As the field has developed, ABA supporters and researchers seek to improve the practice and expand the ideology it was founded on. Not just looking at the isolated behavior-stimuli interaction, but the person's internal and external environments.

What and how interventions are practiced has changed since ABA's development in the late '60s. Like many fields, behaviorism was not immune to biases. An early vein of ABA focused on changing innate characteristics of people rather than teaching skills, which is the more appropriate application that is used today. LGBTQ+ and neurodiverse populations, for example, were seriously misunderstood, pathologized, and thought to be capable of unlearning sexual or undesired (by the neurotypical practitioners) behavioral preferences through ABA (Conine et al., 2021). Autism was thought originally to be a behavioral response by children when their mothers were either too overbearing or distant; many thought children with autism were incapable of being helped (Kirkham, 2017).

Biases combined with ableist and inconsiderate theories led to poor initial 'treatments,' seeking to make children on the spectrum "indistinguishable" from their neurotypical peers. Charles Ferster, a collaborator with renowned behaviorist B. F. Skinner, in 1961 was the first to apply behaviorist methods to autism (Kirkham, 2017). Fester developed the terms 'refrigerator mothers' and 'smother-mothers,' placing the blame of autism development on them. His methodology was to lock a child with autism in a box daily for a year, which resulted in subdued tantrums from that individual. Behavior analyst Ole Ivar Lovaas used forceful, often painful measures that he called 'aversives' to enforce assigned-gender behaviors and neurotypical-appearing behaviors in children (Kirkham, 2017). Spanking, electric shocks, and withholding food were all used and claimed to cause changes in targeted characteristics (Kirkham, 2017). Similar practices were utilized on LGBTQ+ individuals in "conversion therapy," when it was once supported that "therapy" could change someone's sexual orientation, sexuality, or desire to express their chosen gender (Conine et al. 2020). It must be noted that Lovaas' results were not replicated, and conversion therapy has been found to cause harm and

lasting trauma in those it has been forced on (Conine et al. 2020; Kirkham, 2017). In solidarity with efforts to have Lovaas' articles redacted from the *Journal of Applied Behavior Analysis*, his research will not be directly cited in this thesis.

Lovaas' work received a great deal of media attention, overbearing much of the dissent of his methodology by his contemporaries in the field (Dixon, Vogel, & Tarbox 2012). The study of autism and modern perspectives gained momentum with the work of other researchers such as Michael Rutter (1972). Rutter encouraged the focus on autism to view autism not as psychotic expression, but as a cluster of language and social impairments that could be noticed soon after birth (Kirkham 2017). Even earlier, the work of Baer, Wolf, and Risley (1968) made meaningful statements about the roles of professionals with those they are working with in ABA. These authors stated the pillars of ABA practices: that it is applied, behavioral, analytic, technological, conceptually systematic, effective, and generalizable. As early as the '60s, behavior analysts were supporting work that articulately studied and described behavior relevant to the individual's world. Additionally, Baer et al. acknowledge that "any change [in the behavior under study] may represent a change in their observing and recording responses, rather than in the subject's behavior" (1968). This statement acknowledges that the observer or implementer of behavior analysis is not independent of influencing who they're working with. They have a responsibility to reflect on their actions as well as the individual's environment to find what brings about success most naturally while keeping in the bounds of what is expected in the procedure. Such sentiment in the late '60s strongly contrasts compared to Lovaas' harmful and unsupported methodology. There is, however, the possibility of problematic subjectivity or variability in intervention procedures (i.e. deeming what behaviors need changing). While the authors accurately identify the problems - which remain relevant today - they make no indication as to

how to decrease its likelihood (Baer et al., 1987). ABA professionals have a responsibility to seek out these answers through research and make them available and understandable to the public, as encouraged in several contemporary articles from behavior analysts (Kelly et al., 2019; Demchack et al., 2020; Normand, 2021).

The intentions of Rutter (1972) and Baer et al. (1968; 1978) are more aligned with modern ABA in its approaches supporting the development and education of people with autism via behavioral intervention. This includes modeling, prompting, reinforcement, PRT, and environmental adjustments such as adding visual supports (Steinbrenner et al. 2020). When properly used, these evidence-supported practices rooted in ABA help many young people with autism develop skills and behaviors that will help them navigate and advocate for themselves in a world often constructed for neurotypical minds.

Theoretical Frameworks

If changes are to be recommended for the teaching and application of ABA, it is necessary to analyze its roots as well as parallel frameworks that could be incorporated into the practice. The behaviorism we know today as behavior analysis was developed by B. F. Skinner. He promoted that behavior was not only about a person's actions but their surrounding environmental stimuli as well (Moore 2011). This was contrary to an earlier form of behaviorism that attempted to factor out environmental influences. These factors can include an individual's internal, external, and socio-cultural environments, especially if these factors have grown in importance to the person over their lifetime (Moore 2011). Factors can occur publicly or privately about the individual, resulting in behavior that serves some function to react to these factors. Today, the significance environmental factors have on an individual with autism and

their behavior are often incorporated into interventions. This is considered a more humanistic and naturalistic approach that has grown more standard in ABA practice (Cox et al., 2018).

A humanistic lens promotes the consideration of both internal and external environments to create more adaptable and person-centered practices (Shyman 2016). This can be seen in intervention styles such as PRT, person-centered planning, and self-management - all of which are components of modern ABA interventions. These goals can be achieved successfully when incorporating naturalistic methods, which involve finding environments and motivators more innate to the learner to conduct interventions in and with. A common choice is play - which can happen at home, recess, or in the classroom - making it a useful way for students to generalize what they learn in one location to the others they occupy. Hosting interventions in these environments enhances student motivation and engagement in the tasks, making it an ideal component of modern ABA.

To address the internal environment, ABA considers cognitive factors contributing to the individual's behavior. Interventions are catered with the autistic individual's wellbeing in mind, therefore supporting the use of natural motivators and avoiding adverse punishments when working with people - as suggested by Skinner and other early behaviorists (Dixon, Vogel & Tarbox 2012). Misconceptions today equate modern ABA with outdated behaviorist portrayals, established by behavior analysts like Lovaas. However, these methods are not utilized in ABA - finding natural motivators and reinforcement is the priority.

A common misconception is that ABA to this day does not already incorporate consideration for the autistic individual's well-being (Cox et al., 2018). In response to a 2016 article by Shyman that mischaracterized ABA and behaviorism, behavior analysts Cox, Villegas, and Barlow (2018) went into detail to counter Shyman's statements. Shyman identified

behaviorism as "mechanistic, absolutist, symptom-focused, and oriented principally around external motivation" (2016, p.366). In their response, they ensure that a behavior analyst incorporates humanistic factors in identifying motivators to create an individualized intervention based on the individual's goals, skill level, and the causes of their behavior (2018). In defense against Shyman's accusations that ABA medicalized autism, they ensure that "…the focus is on interactions between people and the environment, not on removing a disability from within an individual" (Cox et al., 2018, p. 283). They go on to make an important distinction between philosophy and science – Shyman's argument was more accurately against behaviorism as a philosophy and should not have been conflated to argue against ABA as a science and practice (Cox et al., 2018). The implication of behaviorism and the practice of ABA can occur with or without one another. Especially when considering the large body of evidence that shows skill growth in those who go through integrous application of ABA practices. This scientifically-based and practiced intervention style does not, however, exist without criticisms and situational flaws.

Criticism of Applied Behavior Analysis

A range of criticisms exists on ABA, from research to execution. For the practice and education of future behavior analysts to evolve, the following critiques need acknowledgment and consideration. This includes accessibility of terminology used in the field, who conducts ABA research, and how ABA is received by people on the spectrum.

A difficulty that behavior analysts face in the field is the accessibility of the terminology they use - which can create an accessibility barrier for clients and other professionals. ABA's use amongst fields had brought about various definitions and approaches depending on the profession: a BCBA vs. a speech-language pathologist vs. an occupational therapist, and so on

(H. Flood, personal interview, January 19, 2022). Each might have different priorities for the student and use different terms to describe the same strategy. This calls into question what qualifies as ABA and the potential consequences of not having a solidified grasp on how it is applied. For example, it may influence how the effectiveness of ABA methods is designated and studied in research. PRT, as defined by its creators on their website, is stated to have "derived" from ABA (autismprthelp.com). However, a 2017 article that studied the effectiveness of peer-implemented PRT at recess - did not credit PRT as being grounded in ABA (Brock et al.). While another study compared PRT *against* "structured" (non-naturalistic) ABA, defining ABA as only DTT and rewards (Mohammadzaheri et al., 2014). PRT to these researchers was a "package" of ABA and naturalistic methods, separable from a narrow version of ABA. The lack of cohesion in ABA research could be a source of discrepancies or perspectives of what ABA entails in the field - leading to confusion and concern for parents and autistic individuals about accessing the best care.

Terminology within ABA has been disputed as well. The memory of Lovaas' aversive punishments has lasted and even been utilized in extreme circumstances. This includes the much-debated Judge Rotenberg Educational Center, which continues to use shock therapy on its students despite attempts to eliminate it, such as the national ban on shock therapy by the Food and Drug administration in 2020 (Young & McMahon, 2021). This decision was overturned by a judge in a federal appeals court, deeming it outside of the FDA's jurisdiction. Autism advocacy organizations and supporters created the #StopTheShock campaign to speak out against the school's methods, but the school continues to this day (Autistic Self Advocacy Network). This has aided in a strong negative connotation to the term "punishment" as it is associated with ABA (Trump et al., 2018).

"Punishment" does not directly imply the use of painful or harmful methods, also known as aversive punishments. Aversive punishments and non-aversive punishments both originate from the aforementioned behavioral techniques developed by Skinner but are not one and the same in modern ABA. Despite this, the association between the use of punishment in ABA and aversive punishments exists strongly in professional fields and families of children with autism. However, the ethics code that BCBAs follow, states "behavior analysts comply with any required review processes (e.g. a human rights review committee)," if it is proposed that punishment be utilized with an individual on the spectrum (BCBA, 2021)."Restrictive or punishment-based procedures" can only be used once other types of interventions have been exhausted (BCBA, 2021, pg. 12). Terminology such as "punishments" along with dozens of ABA acronyms and technical language, is often a barrier to comprehension and understanding amongst professionals and families. Since the '80s, behavior analysts such as Hineline (1980) and Baer et al. (1987) have questioned the language used in ABA culture, acknowledging how it can differ from more colloquial language that their audiences use to describe behavior.

Additionally, there have been concerns of conflict of interests (COIs) in ASD researchers who test the methodology, introducing potential biases to results (Bottema-Beutel & Crowley, 2021). A 2021 article, "Pervasive Undisclosed Conflicts of Interest in Applied Behavior Analysis Autism Literature," examined eight behavioral analysis journals to identify articles that examined intervention strategies (Botemma-Beutel & Crowley). Within these articles, the researchers sought to identify proportions of authors that were currently involved in ABA clinical or private practice and whether these outside roles were declared as possible COIs or not (Bottema-Beutel & Crowley, 2021). The conflict is that researchers may be incentivized to report or bolster positive results to later endorse their practice and standing in the field. They found that

out of the 180 articles "nearly all authors" were clinically or privately employed but did not identify this in a COI.

There have been many who question the ethics of ABA and discuss the view that ABA serves to limit the autistic traits of students and effectively eliminates their autonomy (Wilkenfeld & McCarthy, 2020; Sandoval-Norton, 2019). Primary among these voices are those of autistic individuals that have first-hand, adverse experiences with ABA. These perspectives typically aren't present in research and are more accessible online on YouTube, blog posts, and discussion sites like Reddit. It was not within the scope of this thesis to pursue the voices of autistic individuals directly through interviews, as it would have been unethical to do so without IRB approval. However, these voices are important in considering the use and future of ABA. Instead, the following accounts were retrieved from public sources from autistic people who chose to share their opinion of ABA.

In her 2019 TED talk, Chloe Everett described how ABA felt like being taught how to mask her autistic characteristics and that her preferred ways of communicating through art were ignored (Everett, 2019). Parents also may feel pressure to use ABA as it is the intervention style supported by many school districts (Wilkenfeld & McCarthy, 2020). On her YouTube channel, an autistic parent of a few children in ABA noticed positive changes in her children with the onset of the COVID-19 pandemic and they did not attend ABA for several weeks. One of her children in particular started to talk and play with her sibling more, and the challenge behaviors (such as escapism) that the ABA was focusing on were dissipating as the stress of going to school and ABA decreased (Autmazing, 2020). On another YouTube channel, an autistic ABA therapist, Harven Tesla discussed their experience having to implement ABA. They also noted that masking was a huge issue, primarily that students were limited in their stimming - a

self-regulating strategy that is expressed in a repetitive physical or verbal behavior. The risk of limiting stimming is that a meltdown can occur, meaning when an individual shuts down and is incapable of processing their surroundings further. This can look like a large outburst or becoming very quiet and unresponsive (Harven, 2020). Paige Layle, an autistic advocate and influencer, frequently speaks out against ABA on her YouTube page, criticizing institutions like the Judge Rotenberg Educational Center and citing research that reflects the harm that ABA has had on autistic children (Layle, 2021).

These videos and posts have hundreds to thousands of responses, from both supportive and outraged listeners. First-hand accounts need to be valued rather than dismissed with promises that "true ABA" would never have resulted in the harm that so many take the time to share. Efforts need to be taken to denounce past research that supported harmful or restrictive methods. Psychology professors Capriotti and Donaldson (2021) called for behavior-analytic organizations to take clear stances against conversion therapies, which derive many harmful methods from behaviorism and early versions of ABA from researchers like Lovaas. The Association for Behavior Analysis International (ABAI) followed these recommendations and made a statement condemning conversion therapy in 2021.[3] Other organizations should make similar efforts to denounce such methods - actively shaping ABA according to those it is catered for. Creating environments where ABA professionals can receive and react to feedback from ABA receivers could be the key to creating a mindful and renewed era of ABA. It requires an understanding of where both sides of this relationship are coming from. To gather insight into the current professional climate of ABA and ABA education in Oregon, I interviewed two practicing

---

[3] See statement at:
https://www.abainternational.org/about-us/policies-and-positions/policy-statement-on-conversion-therapy-and-practices,-2021.aspx

Portland-based BCBAs - Angie Pickering and Hillary Flood - and a Portland State University special education adjunct professor, Brad Hendershott.

Interviews and Insights

Through these interviews, I developed a better picture of what autism specialists are experiencing in their collaboration with other specialists (psychology, speech and language, etc.), families, those seeking coursework in ASD, and autistic students.

PSU adjunct professor Angie Pickering, a practicing and consulting BCBA based in Portland, focuses on naturalistic interventions embedding strategies within regularly occurring activities, such as play, to encourage engagement in the students she works with. She also is certified in and utilizes PRT and the Early Start Denver Model (ESDM), both known for incorporating individual's interests and motivators within a natural setting, such as a classroom during play (Brock et al., 2018). "This practice of ABA felt even more authentic to myself," Pickering said, "because it was embedding education through play. It wasn't teaching at a tiny little table." Pickering is an advocate for naturalistic ABA methods, putting it at a forefront of how she mentors other BCBAs and teaches classes at PSU. Pickering echoed the sentiments of naturalistic-based ABA research, stating that "play equals intervention. A child with autism… should not be isolated from their natural environment to learn."

In a joint interview, professor Brad Hendershott and BCBA Hillary Flood discussed their perceptions of ABA in the context of Oregon schools. Hendershott works for Columbia Regional Inclusive Services and is a member of the Oregon Commission on Autism Spectrum Disorder and the Behavior Analysis Regulatory Board. His background was as a licensed speech-language pathologist (SLP) and autism specialist. Flood is a current BCBA with Columbia Regional Inclusive Services with an extensive background working in the schools as a special education

teacher and behavior coach. "The field of ABA is very much an evolving field," Hendershott stated. He explained that BCBAs are incorporating a more diverse range of treatments and drawing from more varied influences. For example, the Accept, Identify, Move (AIM) curriculum was developed by an influential BCBA to develop the social-emotional skills of children by blending tenets of ABA with acceptance and commitment therapy (ACT). ACT stems from cognitive-behavioral approaches that would not have been welcomed by many BCBAs 15-20 years ago.

All interviewees noted that the 2022 version of the BCBA ethics code made important changes to keep those it licenses accountable and updated on their practice. Pickering highlighted the added section on cultural competency that requires "behavior analysts [to] actively engage in professional development activities to acquire knowledge and skills to cultural responsiveness and diversity" (BACB, 2020, p. 9) This section is meant to lead behavior analysts to acknowledge their own biases and that of their professional peers. Flood noted a change made that allows for BCBAs to collect testimonials from previous clients that can then be shared with future clients to reflect positive perceptions of ABA therapy - whereas before they were not allowed to do so. To prevent possible coercion or COI, section 5.07 establishes guidelines that testimonials can only come from past clients who give detailed consent of their testimonials being shared (BACB, 2020, p. 17). It must also be reported whether it was solicited or unsolicited. These advancements aid a flow of knowledge to and from behavior analysts in an ethical, conscious manner. The result of which could lead to a greater understanding amongst BCBAs, their clients, and professional peers.

Each interviewee voiced changes and advancements they would like to see normalized in the field of ABA. A consensus among them was to see more interdisciplinary interaction.

Pickering noted a time when lacking understanding amongst professionals resulted in conflict. When Bill 358 was up for renewal in 2021, Pickering saw the SLP state association "pulling out every stop that they could" to prevent the renewal of the bill. "It's all about relationship-building," Pickering stated about interdisciplinary collaboration, "I'm willing to listen to where my scope ends and where yours starts, and respect all of the goals you have to bring to the table. But the table goes both ways." Pickering went on to voice her hope that interdisciplinary discussion, invitation, and cooperation would continue to grow in the field. "We have so much data to show that having a wrap-around approach and having an interdisciplinary team working together collectively is the best kind of intervention you can provide to a client."

Flood and Hendershott called attention to the influence that a professional's background has on their inclinations for implementing interventions in the field. Having a background in psychology can yield a very different BCBA than someone with a background in education, or an individual that works in schools for years before getting a BCBA certification. To learn about the disciplines of professional peers in school districts, Hendershott expressed his desire to see BCBA programs strengthen their emphasis upon collaboration. Additionally, Hendershott voiced that it is perhaps time for a name-change for ABA, to leave behind the "charged" associations with the term and to acknowledge its modern advancements and goals. Flood wants to see an increased requirement in supervision time with other disciplines. Furthermore, to bridge interdisciplinary knowledge gaps, to have private BCBAs educated on the rules that school BCBAs operate under, such as the Individuals with Disabilities Act and the Federal Educational Rights and Privacy Act. By expanding the knowledge base that new BCBAs can pull from, there is a greater awareness of other professionals' perspectives and guidelines, allowing for comprehension and compassion during collaborative efforts. Efforts that are common when, for

example, an interdisciplinary team is required to make an Individualized Education Plan (IEP) or transitional plan (preparation for a student leaving school) for a student. BCBAs and other educational professionals should be prepared to relate to other perspectives to provide the best comprehensive care for their students.

Synthesis of ABA's history, critiquing voices, and these interviews collected from behavior analysts yields several recommendations that can be proposed to ABA educational programs at the university level.

Future Directions for ABA

The future of ABA will greatly depend on how behavior analysts are educated, as they are a common source of ABA dissemination once they begin to practice in the field. The values instilled on them, the awareness of ABA's legacy, who guides them, and how they engage with their client base, can all greatly affect the reputation and efficacy of the practice.

There are four pathways currently that can lead to certification of a BCBA: achieving a degree at an approved program, completing behavior analytic coursework in conjunction with a graduate degree, through faculty teaching and research with a graduate degree, or postdoctoral experience with a doctoral degree (BACB, 2022). Requirements for each pathway are extensive. For example, BCBA coursework requirements currently cover the following topics: ethics and professionalism; philosophical underpinnings and concepts and principles; measurement, data display and interpretation; experimental design; behavior assessment; behavior change procedures and choosing interventions; and personnel supervision and management (BACB, 2022). There is, however, for university ABA programs to include additional topics in their curriculums to reconcile the issues that have been addressed.

As a developing field with a complex lineage, behavior analyst professionals have a responsibility to know the history, participate efficiently in interdisciplinary efforts, and constructively respond to feedback. Behavior analysts must embrace that there are people with ASD who have experienced negative outcomes from ABA and make efforts to evolve the practice accordingly (Everett, 2019). This can be addressed in coursework - by ensuring that a comprehensive review of ABA history, that addresses the more difficult aspects, is incorporated into the curriculum. This could either be as a stand-alone course or integrated into the content area "philosophical underpinnings" or the ethics content course. By building a thorough understanding of how the practice developed and diversified, practitioners will have a greater ability to notice, accept and constructively critique different applications of ABA by their professional colleagues.

Such courses would also aid in interdisciplinary efforts and interacting with students and their families - to empathize with potential apprehension about the practice, extinguish misconceptions, and educate others on what modern ABA entails. Behavior analyst Julie Smith suggests that by embracing behavior analysis' past and being "prepared to push direct comparisons between old behaviorism and contemporary behavior analysis," specialists and ABA will feel more approachable for the general public (Smith, 2016, p. 82). Hendershott noted that some behavior analysts tend to display as "arrogant" or "dismissive" having specialized in behaviorism, and sometimes clashing with other professionals with less behavioral training (B. Hendershott, personal interview, January 19, 2022). What should be instilled in future behavioral analysts is a desire to explore knowledge from other professions whilst still sharing their knowledge on behavior. Hendershott noted that this could be done by integrating emotional intelligence and coaching courses into curriculums to learn "how to translate your expertise and

make it accessible." Programs could achieve this by teaching the AIM curriculum that focuses on socio-emotional skills (Hendershott, personal interview, 2022).

At minimum, a marked change in which methods are emphasized in ABA education could be implemented. Not only cooperating in interdisciplinary efforts but incorporating other disciplines' methods could elevate the application of ABA. For example, highlighting naturalistic methods such as PRT and finding ways to implement interventions in a larger range of everyday environments. Perhaps a more targeted approach to address past misuse and to be responsive to those who have shared their negative experiences with ABA.Such as encouraging school districts and governing bodies to endorse other evidence-based practices to make them equally accessible as ABA - thus providing families with a choice of care, rather than a single option. There is also the possibility that ABA organizations and schools with ABA programs need to be more vocal with how ABA has grown and what it entails in the field. Clearly stating that ABA is significantly different from its first iterations and releasing videos or articles about what ABA looks like. Community outreach could be conducted by the BACB, state-level organizations, and universities such as PSU. Thus providing more accessible information to families and students on the spectrum who can acquire a visual of what they might experience.

On a societal level, the voices of autistic individuals and autism advocates need to be valued to a greater degree. Stereotypes and ill-informed treatment of autistic people are a reality in today's world, maintaining barriers to change. Identifying "challenge" behaviors for interventions is at risk of being subjective. Stimming in a student may seem like behavior in need of replacing for one behavior analyst or not by another. Rather than be taught to diminish certain regulatory behaviors (like stimming), students with ASD can be taught how to recognize their emotions, their own state of mind, and when and where behaviors are appropriate. By providing

interventions that support the development of self-advocacy and independence, students can feel more secure and confident in their space (Hanley, 2019). Through the skilled and wholistic application of ABA, it is a tool that can support students in their confidence and acquisition of these skills while respecting their needs as people on the spectrum.

Concluding Statements

This collection of evidence by no means covers the extensive arguments in the ABA debate. The field of ABA is much more extensive and embedded in behavioral practices of all kinds (i.e. speech therapy, occupational therapy, general/special education, etc.) than I originally perceived, revealing to me the legitimacy of both those that support the practice and those who dissent. Having evidence-based research is equally necessary in a practice as the experiences of those who receive it. It is promising to hear from the interviewees that now is an opportune time for change to occur. Part of that change must be in how the next generation of professionals are educated; to welcome discussion, receive all facets of feedback, practice accessible communication, and prepare for interdisciplinary work. In common amongst opinions on ABA is the desire to initiate change in the practice. To what degree change occurs will be based on the willingness to bridge points of contention that exist. Involving autistic individuals and their voices along with interdisciplinary cooperation will be necessary for future changes to be unanimously successful.

References

Autistic Self Advocacy Network (n.d.) *#StopTheShock: The Judge Rotenberg Center, Torture,*

    and How We can Stop It. Autistic Advocacy.

    https://autisticadvocacy.org/actioncenter/issues/school/climate/jrc/

Autmazing. (2020, July 24). *Autism: Life After ABA* [Video]. YouTube.

    https://www.youtube.com/watch?v=yU9etq4Cgyc

Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some Current Dimensions of Applied

    Behavior Analysis. *Journal of Applied Behavior Analysis*, *1*(1), 91–97.

    https://doi.org/10.1901/jaba.1968.1-9

Behavior Analyst Certification Board (BACB). (2022). *Board Certified Behavior Analyst*

    Handbook. Retrieved from https://www.bacb.com/bcba/

Behavior Analyst Certification Board (BACB). (2020). *Professional and ethical compliance*

    code for behavior analysts. Retrieved from

    https://www.bacb.com/ethics-information/ethics-codes/

Brock, M.E., Dueker, S. A., & Barczak, M. A. (2017). Brief report: Improving social outcomes

    for students with autism at recess through peer-mediated pivotal response training.

    Journal of Autism and Developmental Disorders, *48*(6), 2224–2230.

    https://doi.org/10.1007/s10803-017-3435-3

Capriotti, Matthew R, and Jeanne M Donaldson. (2022) "'Why don't behavior analysts do

    something?" behavior analysts' historical, present, and potential future actions on sexual

    and gender minority issues." *Journal of Applied Behavior Analysis*. *55*(1), 19–39.

    https://doi.org/10.1002/jaba.884

Conine, D. E., Campau, S. C., & Petronelli, A. K. (2021). LGBTQ + conversion therapy and

applied behavior analysis: A call to action. *Journal of Applied Behavior Analysis*. *55*(1),

6-18. https://doi.org/10.1002/jaba.876

Cooper, J.O., Heron, T.E., & Heward, W.L. (2007) *Applied behavior analysis* (2nd ed.). Upper

Saddle River, NJ: Pearson.

Cox, D. J., Villegas, A., & Barlow, M. A. (2018). Lost in translation: A reply to Shyman (2016).

Intellectual and Developmental Disabilities, *56*(4), 278–286.

https://doi.org/10.1352/1934-9556-56.5.278

Demchak, M., Sutter, C., Grumstrup, B., Forsyth, A., Grattan, J., Molina, L., & Fields, C. J.

(2020). Applied Behavior Analysis: Dispelling associated myths. *Intervention in School

and Clinic*, *55*(5), 307–312. https://doi.org/10.1177/1053451219881725

Dixon, D., Vogel, T. and Tarbox, J. (2012). A brief history of functional analysis and Applied

Behaviour Analysis. *Functional Assessment For Challenging Behaviors.* Autism and

Child Psychology series. New York and London: Springer. DOI

10.100/978-1-4614-303707_2.

Everett, C. (2019, March). *The Problem with Applied Behavior Analysis* [Video}. TED.

https://www.ted.com/talks/chloe_everett_the_problem_with_applied_behavior_analysis

Hanley, G. (2021, September 9). *A Perspective on Today's ABA from Dr. Hanely.* Practical

Functional Assessment.

https://practicalfunctionalassessment.com/2021/09/09/a-perspective-on-todays-aba-by-dr-

greg-hanley/

Hinline, P.N. (1980) The language of behavior analysis: Its community, its function, and its

limitations. *Behaviorism, 8*, (67-86).

Kapp, S.K. (2020). Autistic aommunity and the neurodiversity movement stories from the

frontline (1st ed. 2020.). Springer Singapore : Imprint: Palgrave Macmillan.

Kelly, M. P., Martin, N., Dillenburger, K., Kelly, A. N., & Miller, M. M. (2019). Spreading the

news: history, successes, challenges and the ethics of effective dissemination. *Behavior

Analysis in Practice*, *12*(2), 440–451. https://doi.org/10.1007/s40617-018-0238-8

Kirkham, P. (2017). 'The line between intervention and abuse' – autism and applied behaviour

analysis. *History of the Human Sciences*, *30*(2), 107–126.

https://doi.org/10.1177/0952695117702571

Layle, Paige. (2021, July 16). *ABA Therapy is abuse: an autistic's thoughts on ABA:

#StopTheShock* [Video]. YouTube. https://www.youtube.com/watch?v=94sy4YrUGRk

Moore, J. (2017). Behaviorism. *The Psychological Record*, *61*(3), 449–463.

https://doi.org/10.1007/BF03395771

National Autistic Society (2019 March 22). *Warning: So-called cures and dogy interventions.*

https://www.autism.org.uk/advice-and-guidance/what-is-autism/so-called-cures

Normand, M. P., Dallery, J., & Slanzi, C. M. (2021). Leveraging applied behavior analysis

research and practice in the service of public health. *Journal of Applied Behavior

Analysis*, *54*(2), 457–483. https://doi.org/10.1002/jaba.832

Pierce, W.D. & Cheney, C. D. (2013). Behavior Analysis and Learning (Fifth edition). Taylor

and Francis.

Rogers, S. J., Hayden, D., Hepburn, S., Charlifue-Smith, R., Hall, T., & Hayes, A. (2006).

Teaching young nonverbal children with autism useful speech: A pilot study of Denver

model and PROMPT interventions. *Journal of Autism Developmental Disorders*, *36*, 1007-1024.

Rutter, M. (1972). Childhood schizophrenia reconsidered. *Journal of Autism and Developmental Disorders* 2: 315-37.

Sam, A., & AFIRM Team. (2016). *Discrete Trial Training.* Chapel Hill, NC: National Professional Development Center for Autism Spectrum Disorder, FPG Child Development Center, University of North Carolina. Retrieved from http://afirm.fpg.unc.edu/discrete-trial-training

Sam, A., & AFIRM Team. (2015a). *Functional behavior assessment.* Chapel Hill, NC: National Professional Development Center for Autism Spectrum Disorder, FPG Child Development Center, University of North Carolina. Retrieved from http://afirm.fpg.unc.edu/function-behavior-assessment

Sam, A., & AFIRM Team. (2015b). *Picture exchange communication system.* Chapel Hill, NC: National Professional Development Center for Autism Spectrum Disorder, FPG Child Development Center, University of North Carolina. Retrieved from https://afirm.fpg.unc.edu/picture-exchange-communication-system

Sam, A., & AFIRM Team. (2015c). *Prompting.* Chapel Hill, NC: National Professional Development Center for Autism Spectrum Disorder, FPG Child Development Center, University of North Carolina. Retrieved from https://afirm.fpg.unc.edu/prompting

Sam, A., & AFIRM Team. (2015d). *Reinforcement.* Chapel Hill, NC: National Professional Development Center for Autism Spectrum Disorder, FPG Child Development Center, University of North Carolina. Retrieved from https://afirm.fpg.unc.edu/reinforcement

Shyman, E. (2016). The reinforcement of ableism: Normality, the medical model of disability, and humanism in Applied Behavior Analysis and ASD. *Intellectual and Developmental Disabilities*, *54*(5), 366–376. https://doi.org/10.1352/1934-9556-54.5.366

Simpson, R. L. (2001). ABA and students with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities*, *16*(2), 68–71.

https://doi.org/10.1177/108835760101600202

Steinbrenner, Hume, K., Odom, S. L., Morin, K. L., Nowell, S. W., Tomaszewski, B., Szendrey, S., McIntyre, N. S., Yücesoy-Özkan, S., & Savage, M. N. (2020). Evidence-Based Practices for Children, Youth, and Young Adults with Autism. The University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Institute, National Clearinghouse on Autism Evidence and Practice Review Team.

Suhrheinrich, J., Chan, J., Melgarejo, M. Reith, S., Stahmer, A., & AFIRM Team. (2018). *Pivotal response training*. Chapel Hill, NC: National Professional Development Center on Autism Spectrum Disorder, FPG Child Development Center, University of North Carolina. Retrieved from http://afirm.fpg.unc.edu/Pivotal-response-training

Tesla, Harven. (2020, August 24). *Is ABA Abuse? My Experience As An Autistic ABA Therapist* [Video]. YouTube. https://www.youtube.com/watch?v=EYNsOXJ7uls

Wilkenfeld, D. A., & McCarthy, A. M. (2020). Ethical concerns with Applied Behavior Analysis for autism spectrum "disorder." *Kennedy Institute of Ethics Journal*, *30*(1), 31–69. https://doi.org/10.1353/ken.2020.0000

Wong, C., Odom, S. L., Hume, K. A., Cox, A. W., Fettig, A., Kucharczyk, S., Brock, M. E., Plavnick, J. B., Fleury, V. P., & Schultz, T. R. (2015). Evidence-Based Practices for Children, Youth, and Young Adults with Autism Spectrum Disorder: A Comprehensive

Review. *Journal of Autism and Developmental Disorders*, *45*(7), 1951–1966.

https://doi.org/10.1007/s10803-014-2351-z

Young, R. & McMahon, S. (2021, August 12). *Disability advocates fight ruling allowing electric shock treatment back in Mass. residential school.* Wbur.

https://www.wbur.org/hereandnow/2021/08/12/shock-treatment-school-disability