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TEACHING THE HISTORY OF BEHAVIOR ANALYSIS

# Teaching the History of Applied Behavior Analysis

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## Abstract

Incorporating historical readings and discussion into applied behavior-analytic coursework may be an important strategy for developing well-rounded behavior analysts. However, little guidance is available to instructors interested in teaching the history of applied behavior analysis. This article describes how the history of behavior analysis can be incorporated into a course on applied behavior analysis to achieve this goal. The history of punishment/aversives in behavior analysis will be provided as an example of how the history of behavior analysis can be embedded into applied coursework. The historical interaction between the culture at large (i.e., the culture beyond behavior analysis) and behavior-analytic literature and events related to punishment will be described because both affect the field and have led to the current state of practice. History related to early ethical standards, early experimental analysis of behavior literature, the backlash against early applied behavior analysis, and the field of behavior analysis' response to the backlash is discussed.

**Keywords** History · Behavior analysis · Teaching · Punishment · Applied behavior analysis

Applied behavior analysis (ABA) is a subfield of behavior analysis that is focused on using behavior-analytic concepts and principles to solve socially significant human problems (Baer, Wolf, & Risley 1968). Because ABA is directly involved with human affairs, it is critical that students interested in practicing ABA be prepared to do so in an ethical and effective manner. Teaching students best practices is an obviously essential component of preparing students to become ethical and effective ABA practitioners. What may be less obvious when teaching ABA courses is the utility of embedding the history behavior analysis into the coursework.

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Knowing where the science and practice of ABA came from is important because this history affects current repertoires and practices (Michael, 2004). Our history has often helped shape, refine, and hone ethical applications of behavioral principles to human issues. Issues that arise in practice can inform our research and drive the development of new technologies, which in turn are applied to solve human problems and may give rise to additional concerns, questions, and issues that then again inform our research (see Neef & Peterson, 2003). In the introduction to this special issue, E. K. Morris (2022) described the importance of teaching the history of behavior analysis to all students of behavior analysis. One of the major themes of Morris's article was that "those who do not learn from history are doomed to repeat it" (Santayana, 1905/2005–2006, p. 284, as cited in E. Morris, 2022). The repercussions of ABA practitioners repeating the mistakes of the past could result in multiple negative outcomes, such as direct harm to the client (Morris, Goetz, & Gabriele-Black 2021; C. Morris & Hollins, 2021) and harm to the reputation of the field (Johnston, 1991). Thus, one important reason to teach ABA students the history of behavior analysis is to help them improve their practice by avoiding the mistakes of the past.

There are many obstacles to teaching students the history of behavior analysis. One of the primary obstacles are competing educational needs that must be targeted during the limited instructional time that graduate programs have to teach students. Graduate programs are tasked with teaching students a tremendous amount of content to prepare the students to be successful behavior analysts, and the history of behavior analysis might not be a top priority for educators. In addition, graduate programs might have difficulty obtaining the resources/content necessary to teach the history of behavior analysis. For example, E. K. Morris (2022) highlighted the lack of historical content included in applied behavior analysis textbooks.

The purpose of this article is to describe how the history of ABA can be embedded into an existing ABA course through the use of an exemplar. By taking the approach of embedding content into existing courses, we hope to help instructors overcome obstacles in teaching students the history of behavior analysis. Namely, this approach reduces the need for additional instructional time by leveraging the infrastructure that will already be in place for teaching concepts and reviewing current literature.

## Embedding the History of Behavior Analysis When Teaching About Punishment: An Exemplar

For this exemplar, we have assumed the course is an introduction to ABA. This is a common offering in behavior analysis programs and is a course typically required as part of a verified course sequence (VCS) for those seeking certification as board certified behavior analysts (Behavior Analyst Certification Board [BACB], 2018). Therefore, we hope it is relevant to those teaching ABA courses. Historical elements could be embedded throughout the course (indeed, when the authors have taught such a course, historical elements have been woven throughout the course), but as an illustration, we have selected one unit to use as an example of how this could be

done. For our purposes, we illustrate how history could be embedded in a unit about punishment. As further context, we would hope that the instructor would introduce the principle of punishment, its definition, and examples of how punishment can be used in practice, both from the literature and other real-life examples. We propose that the following content could be embedded into that already-occurring discussion. At least two primary components should be introduced to help students of ABA understand the current practices related to and views of punishment, both in behavior analysis and in the broader community. The first is the historical and current cultural context surrounding punishment-based procedures, both within the field and in the larger cultural context. The second is the behavior-analytic literature on punishment. By neglecting to study either or both components, the issues surrounding punishment cannot be fully understood.

For practitioners of behavior analysis, understanding both the history of punishment is especially important because both it has dramatically shaped our ethical guidelines and practices. Understanding this history may help practitioners gain awareness of the relations between their professional and scientific repertoires and be more optimally effective in acquiring new knowledge as they grow and develop as professionals (Michael, 2004). To this end, we review what we believe to be the important cultural and behavioral developments related to punishment over time. We provide citations of readings that may help the instructor in building a background for this history, some of which may also be helpful to students enrolled in the course. These citations can be found throughout this article, as well as in a table separated by section (see Table 1). We also offer a timeline of events to illustrate this history (see Fig. 1). One risk of using a timeline is that readers may infer the developments were linear. This is not necessarily the case. Multiple events were occurring on both behavioral and cultural fronts, and these events interacted in dynamic ways. We offer the timeline only as a way of making concrete some of these interactions. We encourage readers to view the relations as nonlinear interactions.

## Early Ethical Standards

Knowing where to begin a discussion on the origins of punishment and the ethics surrounding its use is difficult. Efforts to establish ethical guidelines related to practices involving humans date back to ancient Greece with the creation of the Hippocratic Oath, but we focus on more immediate influences on the field of behavior analysis. Three of the major ethical events outside of behavior analysis related to the topic of punishment (shown in Box A in the figure) include (1) the creation of the Nuremberg Code; (2) the development of the American Psychological Association's (APA) code of ethics; and (3) the National Research Act of 1974.

The creation of the Nuremberg Code in 1947 was in response to travesties committed under the guise of medical research by Nazi physicians during the Holocaust (Shuster, 1997). Following the conclusion of World War II, trials conducted by an international committee were held in Nuremberg, Germany, to investigate human rights violations committed by members of the Nazi party (Weindling, 2001). During the hearings, special attention was given to human experimentation conducted

**Table 1** References by section

| Early Ethical Standards | |
|---|---|
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**Table 1** (continued)

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**Table 1** (continued)

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|---|---|
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**Table 1** (continued)

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|---|---|
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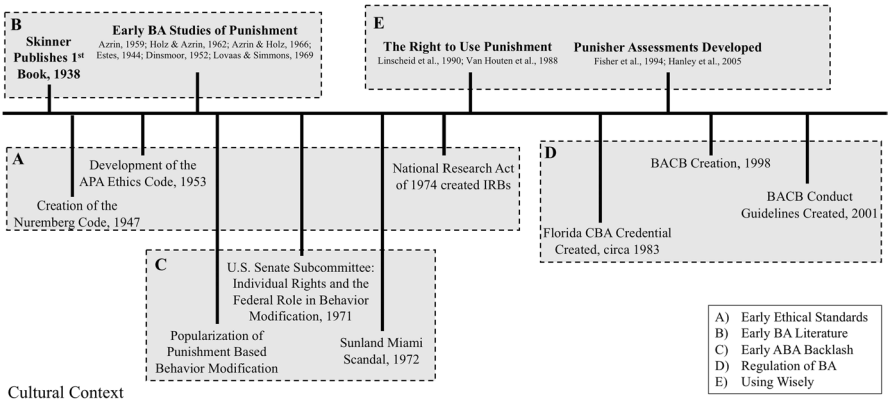


**Fig. 1** Timeline of Historical Events that Shaped Modern Behavior Analytic Use of Punishment

by medical doctors on Jewish people, homosexuals, ethnic minorities, and political dissidents in concentration camps (Annas, 2018). In the process of deliberating the violations, six principles of legitimate research were developed by members of the prosecution committee (Weindling, 2001). These were later expanded to 10. These principles, deemed the Nuremberg Code, were used as a basis to judge the actions of Nazi physicians. Later, these principles were used internationally to inform research and professional ethics related to human subjects (see Shuster, 1997).

In addition to creating the context for the Nuremberg Code, World War II also produced events that led to the creation of the APA's code of ethics in 1953 (Pickren, 2007). In particular, due to the demand for psychologists to administer draft eligibility tests before the War and the need to help provide mental health services after the War, the field of psychology expanded during this time (Fisher, 2009; Watson, 1953). In response to the field's growth and greater public visibility, the APA's code of ethics was developed to protect the reputation of the practice (Hobbs, 1948; Stark, 2010). Because many early behavior analysts were psychologists by training and trade, this code and subsequent revisions directly governed behavior-analytic practices (Rutherford, 2006; Schreck & Miller, 2010).

Finally, in 1974 the National Research Act was created following public outcry about biomedical research scandals, perhaps most notably, the Tuskegee study (Hyman, 2007; National Commission for the Protection of Human Subjects, 1978). The Tuskegee study involved a group of researchers observing the natural long-term effects of untreated syphilis in a group of African American males already afflicted with the disease. Although the participants in the study "freely" agreed to participate, it was later determined that they were not informed that treatment and cures for syphilis had been discovered and were available throughout the course of the study. This resulted in numerous deaths and countless health issues that could have been avoided and prevented (see Brandt, 1978). To protect participants in future studies, the National Research Act established institutional review boards (IRB) to monitor research regarding human subjects (National Commission for the Protection of Human Subjects, 1978). Since their creation, IRBs have been responsible

for enforcing policies for research involving humans with special sensitivity toward anything involving risk of harm and aversives (Hyman., 2007).

Although not necessarily directly related to behavior analysis or punishment, all three of these developments were major cultural events that affect and govern the use of punishment and other procedures viewed as potentially harmful when implemented as part of a behavioral intervention. The Nuremberg Code has been used internationally as a blueprint for subsequent codes of ethics to ensure the rights of experimental subjects (Shuster, 1997). APA and behavior-analytic communities are still intertwined, and many behavior analysts continue to follow APA ethics guidelines in addition to the *Ethics Code for Behavior Analysts* (see BACB, 2020). Finally, the IRBs established by the National Research Act are ubiquitous and are utilized to review all research projects involving human subjects, including behavior-analytic research. All these events are important as part of the history of punishment and use of aversives. A discussion of these events could provide a meaningful backdrop for further discussion of the applications of punishment and implications for practitioners if they are considering the use of aversives. Understanding this background context may make applied behavior analysts more sensitive to the issues involved punishment.

## Early Behavior-Analytic Literature

Skinner notoriously disdained the use of punishment and produced relatively little research on the topic. When describing the utility of punishment, Skinner (1953) said, "in the long run, punishment, unlike reinforcement, works to the disadvantage of both the punished organism and the punishing agency" (p. 183). He then went on to say that "civilized man [sic] has made some progress in turning from punishment to alternative forms of control" (p. 192) and continued, "the birch rod has made way for the reinforcements naturally accorded to the educated man [sic]" (p. 192). Despite Skinner's misgivings about punishment, many in the field thought the topic was important and useful.

To fill the void left by Skinner's lack of research on punishment, early behavior-analytic researchers began conducting basic research on punishment with nonhuman animals (see Box B in the figure). Researchers such as Nathan Azrin, William Estes, and James Dinsmoor investigated the effects of punishment on nonhuman animal subjects and outlined basic principles for understanding and using it (see Azrin & Holz, 1966; Lerman & Vorndran, 2002). According to Van Houten (1983), the information obtained during early basic studies helped determine factors that influenced punishment's effectiveness, including the way punishment is delivered (e.g., intensity, latency, schedule), reinforcement variables (e.g., availability of unpunished response, whether the punished response is also reinforced), and stimulus control (e.g., punishment as a discriminative stimulus for reinforcement or extinction).

Following discoveries in laboratory settings with nonhumans, research on [positive] punishment[1] was further developed by researchers in laboratory settings using

[1] The use of "punishment" throughout the manuscript refers to positive punishment.

human operant arrangements. For example, Flanagan, Goldiamond, and Azrin (1958) and Baer (1962) both successfully demonstrated the utility of punishment in decreasing aberrant behavior in controlled settings (Mace & Critchfield, 2010). Then, researchers such as Ivar Lovaas began using punishment in applied settings to decrease severely problematic behavior. For instance, Lovaas and Simmons (1969) conducted a study that involved presenting a brief electric shock contingent on dangerous self-injurious behavior by children diagnosed with intellectual disabilities.

Many procedures used by Lovaas and Simmons (1969) and the other early researchers evaluating punishment, such as using a cattle prod to administer the electric shocks, would be considered unacceptable today. However, at the time, these studies were viewed as progressive and important (Linscheid, Iwata, Ricketts, Williams, & Griffin, 1990; Matson, Benavidez, Compton, Paclawskyj, & Baglio, 1996). When the Lovaas and Simmons (1969) study was published, the available alternative treatments for such severe problem behavior usually consisted of fully restraining individuals who engaged in these behaviors by binding them in straightjackets or other similar devices (Lovaas & Simmons, 1969). Worse yet, alternative treatments could involve invasive medical procedures such as lobotomies, insulin coma, and electroshock therapy (Whitaker, 2002). The use of punishment procedures provided an alternative treatment option that was viewed as more humane than the currently available treatments (Favell et al., 1982; Linscheid et al., 1990). Current students of ABA have not practiced under these historical conditions and may not recognize the difficult choices made by behavior analysts when considering the alternatives to punishment that were used at the time. Teaching this historical context may help the contemporary student understand the state of the science at the time these strategies were developed.

## Backlash of Early ABA

In large part, because of successes demonstrated by these early applied behavior analysts, who effectively addressed the needs of individuals with developmental disabilities—something few others had been able to accomplish at that time, the field began to grow rapidly (Johnston, Carr, & Mellichamp, 2017). Rutherford (2006) noted:

> By the early 1970s, Skinnerian behavior modification seemed to have come of age; exciting scientific and technical developments, a burgeoning professional presence, and remarkable, socially relevant applications all buoyed the enthusiasm and confidence of Skinner's followers and practitioners. These remarkable successes, however, came with a price. (p. 204)

Throughout the 1960s and 1970s, the success of behavior analysis drew the interest of practitioners who lacked appropriate training in behavior analysis, but worked with populations who engaged in problematic behaviors. Due to a lack of capacity to appropriately train enough practitioners and an inability to control the name and practice of behavior analysis, poorly trained individuals claiming to be "behavior

modifiers" were able to take advantage of the situation by offering "trainings." They promised quick and easy solutions to problem behavior without evidence, making them little different from charlatans. Recommendations provided in these trainings included practices like withholding food for extended periods of time while making food contingent on desirable behavior, as well as using "creative" punishers like forcing public masturbation, shaming, and beating (Bailey & Burch, 2016; Johnston et al., 2017). By the 1970s, there was a growing faction of individuals calling themselves "behavior modifiers" who were not trained in behavior analysis. These individuals were using questionable procedures that produced short-term suppression of problematic behaviors, which reinforced their further use. This resulted in multiple violations of human rights and abuses across the country that required intervention (Budd & Baer, 1976), most notoriously, the Sunland Miami Incident. The Sunland Miami Incident involved a Florida-based institution for individuals with intellectual disabilities that carried out systemic and horrendous abuse of its clients in the name of behavior modification (see Johnston & Shook, 1987). These issues are depicted in Box C of the figure.

Partly in response to concerns about basic human rights being violated by practitioners and researchers of behavior modification, a U.S. Senate investigative subcommittee called the Individual Rights and the Federal Role in Behavior Modification was formed (Friedman, 1975). Although "behavior modification" as defined by the committee was a broad term that included any intervention targeting behaviors that ranged from reinforcement-based procedures to lobotomies, a significant portion of the investigation and report focused on programs using a behavior-analytic rationale for their interventions (Subcommittee, 1974). For instance, one of the primary programs investigated by the committee was called the Special Treatment of Rehabilitative Training (START) program, which consisted of a contingency management program for prisoners. This program deprived the prisoners of basic privileges like bathing and engaging in outdoor recreation and made these privileges contingent on specific behaviors. Although this program was not implemented by behavior analysts, the START program was said to be inspired by Ayllon and Azrin's (1968) work on token economies (Rutherford, 2006). The findings of the investigation indicated that an overwhelming majority of programs using behavior modification lacked appropriate ethical review procedures. Because of these results, many programs terminated their operations due to intense pressure or, sometimes, enforced legal actions, and future programs faced high levels of scrutiny and oversight for future programs (Rutherford, 2006).

A review of this history, one that most behavior analysts likely find horrifying and do not wish to talk about, may be helpful for students of behavior analysis to hear. Familiarity with this history is important because many practitioners of behavior analysis are likely to interact with community members who either experienced these times or have learned about them in their own studies (Freedman, 2015). Applied behavior analysts may need to correct false assumptions that these practices are still current or are consistent with the practice of applied behavior analysis (Freedman, 2015; Smith, 2016). They may also need to clarify the difference

between applied behavior analysis and the broadly defined and poorly supervised historic practice of "behavior modification."[2] Furthermore, the applied behavior analyst needs to understand that these horrific practices set the stage for many of the current ethical and regulatory guidelines that govern the use of punishment and other behavior-analytic practices.

## Regulation of Behavior Analysis

In response to the backlash against behavior analysis, professional groups began to form and work together to protect the field (see Box D of the figure). Before the creation of the BACB in 1998, the Florida Certified Behavior Analysis Program was the primary certification program that assessed qualifications for behavior analysts (Johnston et al., 2017). The Florida program grew from a Peer Review Committee that was formed to monitor services for individuals with intellectual disabilities in response to the Sunland Miami Incident (Johnston & Shook, 1987). The goal of the committee was to prevent further maltreatment (Starin, Hemingway, & Hartsfield, 1993). To accomplish this goal, the committee created a training program to better equip practitioners in ethical treatments for their clients. So that consumers could accurately identify practitioners who had this training, the committee elected to create a credential that would be awarded at the completion of training (Johnston et al., 2017).

This initiative then transformed into a professional certification credential for practicing behavior analysts in the state of Florida in 1983. After observing the growth and development of the credential within the state of Florida, behavior analysts from other states began advocating for similar efforts in their own state, which eventually led to the Florida program growing into an international certification board, the BACB (Johnston et al., 2017). By creating an international certification, the BACB was able to establish professional standards for practitioners of behavior analysis by specifying appropriate education, training, and experience, as well as developing an examination to assess baseline competency (Carr & Nosik, 2017). In addition, the BACB created an ethics code specific to professional behavior analysts, originally called the *BACB Guidelines for Responsible Conduct for Behavior Analysts* (BACB, 2001). Within the original conduct guidelines, as well as subsequent versions, the BACB outlined specific regulations about the use of aversives and/or restrictive procedures. For instance, the current code, the *Ethics Code for*

[2] It can be difficult to precisely define the practice of behavior modification because it was often used as an umbrella term that included many practices beyond anything related to behavior analysis, such as lobotomies and electroshock therapy. When explaining the difference between behavior modification and applied behavior analysis, it is important to first acknowledge the broad use of behavior modification. It is also important to acknowledge that many practitioners of behavior modification used behavior-analytic research as justification for their practices, but that their practices differ substantially from applied behavior analysis. Since its inception, the practice of applied behavior analysis has been focused on addressing socially significant behavior with socially acceptable strategies (Baer et al., 1968; Wolf, 1978). Where practitioners of behavior modification would seemingly use any means to address any behavior the therapist deemed worthy, applied behavior analysts are obligated to work with stakeholders to identify the treatment goals and the acceptable/least-restrictive strategies that will be used in treatment (BACB, 2020).

*Behavior Analysts* (BACB, 2020), states that behavior analysts must only use restrictive or punishment-based procedures after demonstrating the desired results were not obtained through less intrusive procedures (Code 2.15). The development of this code directly affected practicing behavior analysts and was a direct result of historical events. Any discussion of punishment should probably include a discussion of the relevant ethical codes that govern an applied behavior analyst's practice.

## Using Wisely

Inappropriate use of certain strategies, such as punishment procedures, can lead to significant restrictions, if not an outright ban, on their use. For example, in 2014, the U.S. Senate Committee on Health, Education, Labor, and Pensions held public hearings and issued a report on the use of seclusion and restraints in public schools. The recommendations in this report included limiting or eliminating the use of restraint and seclusion in school settings. Behavior analysts, however, recognized that additional issues might arise from severely limiting or eliminating the use of punishment procedures (see Box E of the figure). Van Houten et al. (1988) argued that clients served by behavior analysts have a right to the most effective treatment procedures available. These authors also noted that behavior analysts must consider both the risks and restrictiveness of procedures when considering treatment options. They recognized that treatments in and of themselves are not "bad." Rather, *how treatments are implemented* may be problematic, and practitioners must use those treatments wisely and respectfully. Punishment procedures may, at times, be necessary to provide effective treatment and, therefore, warranted. For example, Fisher et al. (1994) demonstrated the effectiveness of empirically derived punishers such as facial screens, contingent demands, and tidiness training on decreasing pica with three children diagnosed with intellectual disabilities. These authors argued that the intrusiveness of the procedure was more acceptable than withholding treatment for a severe behavior that could cause irreversible injury. Although punished-based treatments are controversial and carry with them a great deal of risk, researchers have argued that utilizing them ethically under specific circumstances (when implemented by highly trained individuals and with appropriate oversight) could be necessary for severely dangerous and life-threatening behaviors (Favell et al., 1982).

If punishment procedures are deemed appropriate for an individual, Fisher et al. (1994) argued that perhaps the stimuli used as punishers should be carefully evaluated to ensure that they are effective in reducing the problem behavior rapidly prior to implementing any treatment using them. Fisher et al. went further to describe and demonstrate how to conduct a formal assessment of putative punishers for pica that was resistant to more positive intervention attempts. This study is important because it suggested that selecting highly potent punishers a priori can reduce problem behavior quickly, which in turn may reduce the number of times punishment needs to be implemented overall. A review of this study in a class covering punishment seems warranted. In addition, a study by Hanley, Piazza, Fisher, and Maglieri, (2005) provided evidence that individuals with whom punishment was implemented actually preferred such treatment over treatments that did not include punishment

components. In this study, the participants experienced functional communication training (FCT) procedures both with and without punishers. The FCT plus punishment procedure was more effective than FCT alone. The participants were then allowed to choose which treatment would be implemented for them. The participants indicated FCT plus punishment was more preferred than FCT alone. These results were interesting because they suggest that although many in society may wish to shun the use of punishment procedures, those in need of behavioral treatment may prefer the more effective treatment available, even if it includes punishment components. Therefore, the use of punishment may be necessary at times because it could be the most effective treatment available for the client and may even be preferred by the client. However, the use of punishment must be carefully considered and in line with professional and ethical guidelines.

## Summary

The narrative surrounding punishment can provide an interesting context within which to couch the basic principles of positive and negative punishment and the reinforcing function of punishment for the punishing agent. The historical context surrounding punishment that we reviewed can provide a framework for debates about the ethical use of punishment procedures. Furthermore, an understanding of this history may give students of behavior analysis more perspective on why many individuals are opposed to the use of punishment and why the field's ethical compliance code exists to guide the use of punishment procedures to the extent they do. Understanding this history may provide students of behavior analysis and practitioners of the science more appreciation for their ethical code.

## Conclusion

The purpose of this article was to describe how the history of ABA can be embedded into an existing ABA course through the use of an exemplar. To that end, the history of punishment/use of aversives was reviewed and used to model our approach to embedding historical content into courses focused on ABA. We chose a unit on punishment to illustrate how we might weave the history of behavior analysis into a course on ABA because it was one that we felt most clearly illustrated the importance of understanding history. However, history can and should be embedded in many ways in other units of the course as well.

Future research should develop other historical content that can be embedded into courses focused on ABA. For example, the history of punishment complimented by discussing the principles of positive and negative reinforcement and how positive and negative reinforcement can shape and maintain problem behavior. This could lead to a discussion of the development of functional analysis methodology (Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994). This discussion could provide insight into the paradigm shift that occurred in the field—one that moved us away from punitive treatment procedures to treatments

that are more proactive in nature and based on differential reinforcement procedures. Likewise, the story of the development of multiple preference assessment methodologies and how each evolved could be told. This might begin with single stimulus preference assessments as a pioneering method of evaluating client preference for stimuli that did not rely on verbal reports of preference from others and move into more efficient and effective methods of stimulus preference assessments (Pace, Ivancic, Edwards, Iwata, & Page, 1985). Preference assessment methodologies such as paired-choice preference assessments (Fisher et al., 1992) and multiple-stimulus-without-replacement assessments (DeLeon & Iwata, 1996) could be discussed. This could be further contextualized by discussing the simultaneous context of increased value on person-centered planning and self-determination (Wehmeyer, 2005). Regardless of the specific topic being taught, providing the historical context of developments in that area may help students use the principles of behavior and related technologies more thoughtfully and ethically. Our hope is that the examples described in this article provide a useful illustration of how the history of behavior analysis can be embedded within an ABA course so that future practitioners of behavior analysis not only retain the concepts and principles of behavior analysis but also understand the historical contexts—both behavioral and societal—in a way that makes them more adept practitioners of the science.

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**Data Availability** Not Applicable.

**Code Availability** Not Applicable.

## Declarations

**Conflicts of Interest/Competing Interests** All authors have no conflicting or competing interests to declare.

**Ethics Approval** Not Applicable.

[3] See the Massachusetts Association for Behavior Analysis statement on electric shock and the Judge Rotenberg Educational Center's reply.

**Consent to Participate** Not Applicable.

**Consent for Publication** Not Applicable.

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