DISCUSSION AND REVIEW PAPER





The Treatment of LGBTQ+ Individuals in Behavior-Analytic Publications: A Historical Review

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Abstract

The purpose of this article is to review behavior-analytic publications to understand the field's history of including lesbian, gay, bisexual, transgender, and/or queer (LGBTQ+) individuals in research publications. Twelve articles met the inclusionary criteria for review. The results of the review suggested that the representation of LGBTQ+ individuals is lacking in behavior-analytic literature. Of the 12 articles identified, two were categorized as experimental, three as commentaries, three as survey research, two as conceptual, and two as calls to action. The most prominent period for related publications was between 1973 and 1977, with long periods between other articles that were published in 1990, 1996, 2018, and 2019. Experiments published in the 1970s were associated with conversion therapy, to attempt to change an individual's sexual or gender identity. However, other behavior analysts in the 1970s opposed these experiments. Since these early experiments, there have been no other interventions targeted at affecting the lives of gender and sexual minorities. Behavior analysts must address issues of significance faced by LGBTQ+ individuals through increasing affirming practices, reducing health disparities, increasing safety in schools, and more.

Keywords LGBTQ+ · History · Gender · Sexual

The treatment of lesbian, gay, bisexual, transgender, and/or queer (LGBTQ+) groups by psychologists and related disciplines has historically ranged from disturbing to poor (Graham, 2018). Early practices were primarily aimed at "curing" LGBTQ+ individuals (i.e., attempting to change an individual's sexual or gender identity) through treatments that included castration, rectal massaging, electroshock therapy, and lobotomies. Although most of these extreme practices fell out of prominence in the early 20th century, throughout the 1960s and 1970s, abusive treatments continued, such as inducing nausea, causing paralysis, or slapping wrists with rubber bands when individuals were aroused by homoerotic images (Graham, 2018; Smith et al., 2004). Following the declassification of homosexuality as a mental disorder in the Diagnostic and Statistical Manual in 1973, explicitly aversive interventions reduced in frequency, but insidious "treatments" like conversion therapy gained popularity (Haldeman, 2002). Most recently, modern institutions like the American Psychiatric Association have sought to prohibit the practice of conversion and similar therapies (American Psychiatric Association, 2018). However, the LGBTQ+ community continues to face barriers to obtaining quality mental health care (National Center for Transgender Equality and the National Gay and Lesbian Task Force, 2011).

In a recent paper calling for better informed behavior-analytic practice, DeFelice and Diller (2019) stated that acknowledging the historical treatment of underrepresented groups is a necessary first step toward better practice. A brief synopsis of the early history of applied behavior-analytic treatment of sexual and gender minorities was proposed in the article, which included four publications: McGuire and Vallance (1964), Barlow and Agras (1973), Callahan and Leitenberg (1973), and Rekers and Lovaas (1974). In some of these studies, aversive techniques like electric shock were used to modify sexual behaviors, and in others, less overtly intrusive procedures (e.g., shaping sexual arousal) were used to attempt to manipulate sexual behaviors. Nonetheless, all four studies demonstrated prejudice against the populations studied by targeting sexual or gender presentations.

Although all of the studies referenced by DeFelice and Diller (2019) are appalling and may be important to review

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for better informed behavior-analytic practice, it is unclear whether all of these studies should be categorized as behavior analytic or another subfield of psychology. Additionally, it is unknown if other behavior-analytic articles exist that pertain to this population and whether the content of the additional papers would show prejudice toward or be affirming of LGBTQ+ individuals. To truly understand the historical treatment of the LGBTQ+ community by behavior analysts and to better inform practice, a complete history is needed.

Determining how behavior analysts historically treated LGBTQ+ individuals is no easy task. One method would be to review all clinical cases treated by behavior analysts and evaluate the procedures used. However, that method would require unattainable access to countless clinical records. A second method involves a review and analysis of published behavior-analytic work related to that population. Because behavior analysis is a scientific practice, publications within the field should reflect ongoing practice and innovations (Critchfield et al., 2015). Therefore, Morris et al. (2013) proposed a historical review of publications as an objective criterion to evaluate the history of a topic.

Evaluating publication records to determine historic treatments or trends presents its own challenges, including determining what publications are considered behavior analytic. There are at least three criteria to consider when determining what publications should be considered behavior analytic: the author(s), the content, and the source. Determining if an author of a paper was a behavior analyst is challenging if that paper was published before credentials like Board Certified Behavior Analyst existed. To do so would require arbitrary criteria (e.g., publication record in behavior-analytic journals), consensus among behavior analysts, and/or analysis of their training and practices. To avoid the issues related to the evaluation of individuals, Morris et al. (2013) conducted a historical review of the founding of behavior analysis by evaluating the content of articles using the seven dimensions described by Baer et al. (1968) as the primary criterion. The seven dimensions of applied behavior analysis is a seminal behavior-analytic article (Morris et al., 2013; Saville et al., 2002) that describes the criteria for defining applied behavior analysis. Following Baer et al.'s criteria, Morris et al. were able to more objectively delineate which articles they reviewed were behavior analytic.

Although the method used by Morris et al. (2013) is more objective than evaluating articles based on the author, it cannot be universally applied. In particular, Baer et al.'s (1968) seven dimensions can only be applied to experimental research that targets socially valid behaviors. Because very little experimental research has focused on LGBTQ+ individuals and the experimental research that does exist targeted socially invalid behaviors (i.e., changing sexual and gender presentation), Morris et al.'s methodology would not fit the needs of this project.

The source of publication could also be used as the criterion for determining what articles should be considered behavior analytic. Arguably, the two most important organizations for behavior analysts are the Association for Behavior Analysis International (ABAI) and the Behavior Analyst Certification Board (BACB). Each provides a list of journals on their websites. ABAI's website includes a page devoted to journals published by ABAI and a page that lists other featured journals. On the BACB website, in the account gateway, three journals are listed under available resources. Although the combined list provided by ABAI and the BACB is unlikely to include every journal that has published behavioranalytic content, the organizations' endorsement of the journals provides public credibility to the journal and is, therefore, a relatively objective determinant of behavior-analytic content.

This article reviews the historical treatment of LGBTQ+ groups by behavior analysts using journals listed on the ABAI and BACB webpages. In response to the call to action initiated by DeFelice and Diller (2019), this review was conducted with the intent to understand and acknowledge behavior analysis's history of treatment of LGBTQ+ individuals and inform current behavior-analytic practices. Given the larger cultural context during the more than 50-year span of LGBTQ+ literature described in this article, readers should anticipate the terminology and purpose of the work will be disturbing compared to current societal norms.

Method

Behavior-analytic journals listed on the ABAI and BACB websites were searched for references to LGBTQ+ groups. PsycINFO was used to conduct the search. Two separate searches were conducted with the terms "gender" and "sexual." To complete the search, either "gender" or "sexual" was entered into the primary search field, with each journal separately entered into the secondary search field. "Gender" and "sexual" were used as search terms because language surrounding the LGBTQ+ community has changed over time, so searching for terms such as "LGBTQ+" or "transgender" would likely fail to produce articles published before that language gained popular use. By separating "sexual" and "gender," a wide range of articles could be identified and reviewed.

The journals included in the review consisted of every journal listed on ABAI's website that was searchable in PsycINFO, and each of the three journals listed on the BACB's website (overlap in journals did exist between the two lists). The journals that could not be found in PsycINFO were excluded from the review. See Table 1 for a list of all included and excluded journals.

Each article identified through the preliminary search was evaluated by inclusionary criteria. The inclusionary criteria for

Table 1 List of Journals

Journal name	Source	
Journals included in review		
The Psychological Record	ABAI	
Perspectives on Behavior Science	ABAI	
The Analysis of Verbal Behavior	ABAI	
Behavior Analysis in Practice	ABAI	
Behavior and Social Issues	ABAI	
Journal of Applied Behavior Analysis	ABAI & BACB	
Journal of Behavioral Education	ABAI	
Journal of the Experimental Analysis of Behavior	ABAI & BACB	
Journal of Organizational Behavior Management	ABAI	
Monitor on Psychology	ABAI	
Speech and Language Pathology and Applied Behavior Analysis	ABAI	
Behavioral Interventions	BACB	
Journals excluded from review		
Brazilian Journal of Behavior Analysis	ABAI	
Experimental Analysis of Human Behavior Bulletin	ABAI	
European Journal of Behavior Analysis	ABAI	
Japanese Journal of Behavior Analysis	ABAI	
Journal of Early and Intensive Behavioral Intervention	ABAI	
Mexican Journal of Behavior Analysis	ABAI	
Psychonomic Society Publications	ABAI	

Note. ABAI = Association for Behavior Analysis International; BACB = Behavior Analyst Certification Board.

the first search consisted of the title, abstract, or keywords referring to gender minorities. The criteria for the second search were the same as the first search except articles were searched for reference to sexual minorities instead of gender minorities. For this review, the term "gender minority" was defined as anyone who has a gender identity or expression that is not traditionally associated with their sex labeled at birth (Mayer et al., 2008). Examples include, but are not limited to, transgender ("gender identity is different in some way from their sex labeled at birth"; Leland & Stockwell, 2019, p. 817) and gender nonconforming ("gender identity or behavior that falls outside those that are commonly accepted gender roles for men and women"; Leland & Stockwell, 2019, p. 817). The term "sexual minority" was defined as anyone who identifies as anything other than heterosexual. All articles that met the criteria were included in the review. Any article that did not meet the inclusionary criteria was excluded from the review. No additional articles were added through an ancestral review because any article found outside the selected journals was excluded from the review.

Table 2 summarizes the article selection results by journal. The cumulative number of initial articles identified across all journals in both searches was 202. The individual journal breakdown of the initial results was as follows: *The Psychological Record* (75), *Perspectives on Behavior*

Science (12), ¹ The Analysis of Verbal Behavior (3), Behavior Analysis in Practice (29), Behavior and Social Issues (15), the Journal of Applied Behavior Analysis (33), the Journal of Behavioral Education (5), the Journal of the Experimental Analysis of Behavior (13), the Journal of Organizational Behavior Management (4), Monitor on Psychology (no related articles), Speech and Language Pathology and Applied Behavior Analysis (no related articles), and Behavioral Interventions (13).

After excluding articles that did not meet the inclusionary criteria, we were left with 12 articles to be reviewed, which were found in *The Psychological Record* (3), *Perspectives on Behavior Science* (1), *Behavior Analysis in Practice* (2), *Behavior and Social Issues* (1), and the *Journal of Applied Behavior Analysis* (5). A majority of the studies excluded from this review referred to gender or sexuality under different contexts. For gender, many of the excluded articles talked about gender in the context of gender differences in data sets, gender equality, gendered practices (i.e., treating men and women differently), and gender classes in stimulus equivalence experiments. For sexuality, many of the excluded studies focused on sexual offenders/sexual deviance, sexual abuse prevention, sexual violence, and reducing high-risk

¹ The review of *Perspectives on Behavior Science* included its previous title, *The Behavior Analyst.*

Table 2 Article Selection Results

Journal name	No. of articles identified in initial search total $(N = 202)$	No. of articles meeting inclusion criteria total $(N = 12)$	
The Psychological Record	75	3	
Perspectives on Behavior Science	12	1	
The Analysis of Verbal Behavior	3	0	
Behavior Analysis in Practice	29	2	
Behavior and Social Issues	15	1	
Journal of Applied Behavior Analysis	33	5	
Journal of Behavioral Education	5	0	
Journal of the Experimental Analysis of Behavior	13	0	
Journal of Organizational Behavior Management	4	0	
Monitor on Psychology	0	0	
Speech and Language Pathology and Applied Behavior Analysis	0	0	
Behavioral Interventions	13	0	

sexual behaviors in the context of sexually transmitted diseases. See Fig. 1 (based on Moher et al., 2009) for an overview of the search process and results.

To assess the reliability of the findings, two reviewers independently searched following the same set of instructions. The initial identification of total articles and individual journal articles was consistent across both reviewers. When both reviewers independently applied the inclusionary criteria to each article, a mean agreement of 91.6% was obtained (i.e., 11 out of 12 articles). The single discrepant article was discussed by the reviewers, who agreed to include it in the review.

Following the selection of included articles, two reviewers read each article and classified them into one of five categories: (a) experimental, (b) commentary, (c) survey, (d) conceptual, or (e) call to action. We created these categories inductively after a preliminary review. Articles categorized as experimental included the manipulation of at least one independent variable. Articles categorized as commentaries specifically responded to research or other commentary papers as the primary focus. Articles were considered surveys if they employed survey methodology. Articles that provided considerations of LGBTQ+ preference, orientation, or marginalization were categorized as conceptual. Finally, articles that focused on educating behavior analysts and calling for better treatment and/or action for the behavior-analytic community were categorized as calls to action. The mean agreement for the categorization of articles by the independent reviewers was 91.6%. The single discrepancy was discussed and resolved.

Other variables noted during this review included the degree of representation of different groups under the LGBTQ+

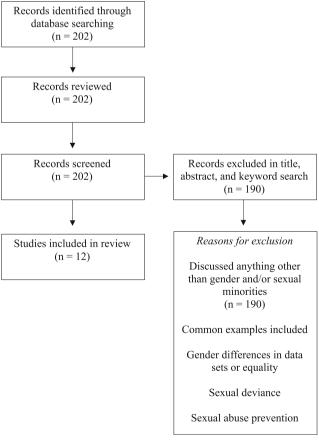


Fig. 1 Overview of the search process, exclusion criteria, and number of studies excluded

umbrella, the date of publication, and the journals that published the work. See Table 3 for a summary of the articles included in the review.

Results

Categories of Articles

Of the 12 articles identified in the review process, two were categorized as experimental, three as commentaries, three as

survey research, two as conceptual, and two as calls to action. The purpose and important features of each article will be noted here in the Results section and reviewed further in the Discussion section.

Experimental Studies

The two articles that were categorized as experimental were authored by Barlow and Agras (1973) and Rekers and Lovaas (1974). Barlow and Agras studied the effectiveness of a stimulus-fading procedure in developing sexual arousal to

Table 3 Summary of Articles Included in Review

Category	Journal	Citation	Year	Relation to LGBTQ+ individuals
Experimental	JABA	Barlow & Agras	1973	Developed arousal to heterosexual stimuli in men who reportedly engaged in homosexual behavior
Experimental	JABA	Rekers & Lovaas	1974	Established gender-typical behaviors in a child who reportedly engaged in gender-nonconforming behav- iors
Commentary	JABA	Nordyke et al.	1977	Critically reviewed Rekers & Lovaas (1974)
Commentary	JABA	Winkler	1977	Critically reviewed Rekers & Lovaas (1974)
Commentary	JABA	Rekers	1977	Responded to Winkler (1977) and Nordyke et al. (1977)
Survey	The Psychological Record	Brady & Levitt	1965a	Determined that the history of homosexual experiences predicted homosexual arousal
Survey	The Psychological Record	Brady & Levitt	1965b	Determined individuals who reported homosexual experiences typically experienced a range of heterosexual encounters
Survey	The Psychological Record	Dancey	1990	Examined variables that could differentiate between a group of heterosexual females and lesbian women
Conceptual	Behavior and Social Issues	Malott	1996	Described a radical-behaviorist ac- count of the development of sexual preference and gender identity
Conceptual	Perspectives on Behavior Science	Snycerski et al.	2018	Used societal treatment of homosexuals as an example in demonstrating the utility of behavioral narratology
Call to action	BAP	Leland & Stockwell	2019	Provided information and tools to better work with transgender and gender-nonconforming individuals
Call to action	BAP	DeFelice & Diller	2019	Described the conceptual similarities between applied behavior analysis and intersexual feminism to help create more inclusive behavior-analytic practices

Note. LGBTQ+ = lesbian, gay, bisexual, transgender, and/or queer; JABA = Journal of Applied Behavior Analysis; BAP = Behavior Analysis in Practice.

heterosexual stimuli with three adult males (21–30 years old) who reportedly engaged in homosexual behavior. In the article, Barlow and Agras conceptualized homosexuality as a "sexual deviation" (p. 355) caused by faulty stimulus control. To correct this "deviation," Barlow and Agras attempted to increase sexual arousal in the presence of pictures of nude females by superimposing a picture of a nude female onto the picture of a nude male. The picture of the nude male used for each participant was one that produced a large penile response during baseline, whereas the female pictures used produced minimal penile responses during baseline. Once baseline penile responses were obtained, the selected female picture was superimposed onto the picture of the male and systematically faded in a series of 16 steps to replace the picture of the male. The results of the study showed that the sexual arousal in all three participants increased following the fading procedure and that two of the three participants reported heterosexual intercourse following the study.

Other important features of Barlow and Agras's (1973) study included the following: First, the authors specified that their goal was to increase heterosexual arousal, not reduce homosexual arousal. Throughout the study, homosexual arousal did not decrease along with the increase in heterosexual arousal. However, after the study ended, the authors reported that homosexual arousal did diminish with two of the participants. Second, the study was conducted with adult men who all evidently sought treatment and presumably consented to participate. Third, no overtly aversive procedures were used, leading the authors to declare that "aversive techniques may not always be necessary in the treatment of homosexuality" (Barlow & Agras, 1973, p. 365).

The second experimental study published in the reviewed journals was conducted by Rekers and Lovaas (1974). This paper was a case review of the treatment of a child described as a 4-year-old boy with "cross-gender identification" (Rekers & Lovaas, 1974, p. 174). The participant, Kraig, reportedly had a history of "cross-dressing" since the age of 2 and continually displayed "pronounced feminine mannerisms, gestures, and gait, as well as exaggerated feminine inflection and feminine content of speech" (Rekers & Lovaas, 1974, p. 174). The following rationale was provided to justify treating Kraig: First, Kraig's behavior reportedly led to social isolation and ridicule. Second, because the "problems" began before the age of 5, Kraig was at risk of "severe adjustment problems in adulthood" (Rekers & Lovaas, 1974, p. 174). To back this claim, research was cited that stated that most adult "transsexuals" and "transvestites" and some homosexuals report crossgender behaviors beginning in early childhood (Rekers & Lovaas, 1974, p. 174). Third, intervening at an early age was thought to produce more favorable results. Fourth, Kraig's parents were alarmed by his behavior.

The intervention recommended by Rekers and Lovaas (1974) was implemented across settings and consisted of

multiple components. In the clinic setting, Kraig's mother was instructed to only reinforce play behaviors that involved "masculine-type" toys (e.g., plastic submachine gun) by providing attention and to place play behaviors that involved feminine toys (e.g., baby doll) on extinction by diverting attention (Rekers & Lovaas, 1974, p. 178). In the home setting, Kraig's mother was instructed to use a token economy system with response cost features. Through the token economy, Kraig earned tokens for helpful/desired behaviors unrelated to gender (e.g., brushing teeth, washing hands) and experienced an array of three possible punishers for engaging in feminine behavior. The punishers consisted of a loss of tokens, time-out (i.e., social isolation and removal from TV time), or physical punishment in the form of spanking by his father. The reported results of the experiment indicated that the targeted behaviors changed as intended and that the results maintained for at least the 26-month follow-up.

There are three other notable aspects of the Rekers and Lovaas (1974) study. The first is that when providing the rationale for the study, Rekers and Lovaas acknowledged that "society probably could afford to become more tolerant with individuals with sex-role deviations" (p. 174) but dismissed that notion as unrealistic. The second is that in the rationale, the alternative treatments for "transsexuals" were identified as "arrest, trial, and imprisonment" (Rekers & Lovaas, 1974, p. 174). The third notable aspect of this article was that multiple commentaries expressing concern were published in a behavior-analytic journal soon after (i.e., Nordyke et al., 1977; Winkler, 1977).

Commentaries

Three articles categorized as commentary were identified in this review. The commentary articles consisted of Winkler (1977), Nordyke et al. (1977), and Rekers (1977). The Winkler and Nordyke et al. papers were critical reviews of Rekers and Lovaas's (1974) research, previously described. Rekers (1977) was a response to the two critiques. All three of these papers were published in the same issue in the *Journal of Applied Behavior Analysis* in the order listed previously.

Although the Winkler (1977) and Nordyke et al. (1977) papers were both critical reviews of the same paper, they differed slightly in focus. Winkler primarily focused on concerns around the behavioral goals of the Rekers and Lovaas (1974) study. Winkler began by noting that Rekers and Lovaas defined "masculine aggression" (e.g., playing with items such as a dart gun, rubber knife, and handcuffs) as desirable behaviors (p. 549). In contrast, "maternal nurturance" (e.g., playing with baby dolls) was labeled as undesirable behaviors (Winkler, 1977, p. 549). The selection of these behaviors led Winkler to question whom Rekers and Lovaas paid the first allegiance to—the participant or prevailing social norms—because it was unclear as to whom the experimenters were prioritizing and

attempting to help. Although the issue of the first allegiance is not typically as dichotomous as in the Rekers and Lovaas paper, Winkler argued that Rekers and Lovaas violated their allegiance to the participant by prioritizing societal norms. Winkler then went a step further in this argument and specified that gender roles are arbitrary, and researchers should focus on helping clients achieve the maximal development of their individual potential. Later in the paper, Winkler even stated, when working with adolescents or adults with crossgender behavior, the goal should be to modify the parents' lack of acceptance and teach the child to modify the behavior of those who do not reinforce their cross-gender behavior.

The Nordyke et al. (1977) paper continued along the same lines as the Winkler (1977) paper but focused more on disputing the reported reasons that Rekers and Lovaas (1974) treated the participant (all four listed in the description of the Rekers and Lovaas paper in the previous section). Nordyke et al. quickly dismissed the first three pieces of rationale by arguing that the justification is predicated on the participant's current and future happiness, which was not measured. The fourth piece of rationale related to the family's preference is addressed in the same manner as in Winkler by questioning the first allegiance of the researchers. After arguing against the rationale, Nordyke et al. also brought up concerns with the methodology and stated that the use of punishment might have violated the client's right to the least intrusive therapeutic interventions possible. Finally, Nordyke et al. concluded the paper by questioning Rekers and Lovaas's description of the feminine sex role as one associated with "flirtations" and "slovenly seductive eyes" (p. 556). Nordyke et al. pointed out that many women do not share these traits and that the experimenters had a narrow view of sex roles.

The final of the three commentary papers was the Rekers (1977) response to the Winkler (1977) and Nordyke et al. (1977) critiques. Rekers's primary rebuttal was that the two critiques were based on "unvalidated assumptions" that society supported feminine behavior in boys and that views of gender identification would change to be more accepting in the future (p. 560). Rekers took exception to Winkler's suggestion that the primary goal of a therapist working with LGBTQ+ individuals is to assist their transition, calling it unethical and unprofessional (Rekers, 1977, p. 566). Additional arguments presented throughout the paper included that the interventions used by Rekers and Lovaas (1974) were "benign procedures legally appropriate for parent-child relations" (Rekers, 1977, p. 564) and that the goal of the intervention was merely to "expand the behavior repertoire" (Rekers, 1977, p. 565).

Surveys

The three survey articles identified in this review were Brady and Levitt (1965a), Brady and Levitt (1965b), and Dancey

(1990). Both of Brady and Levitt's studies used survey methodology to assess correlations between sexual preference and sexual history in male college students. Brady and Levitt (1965b) found that a history of reported homosexual experiences predicted higher reported levels of sexual arousal upon viewing a photograph of a partially clothed man. Brady and Levitt (1965a) also found that, within that same sample, participants who reported engaging in homosexual experiences likely also reported a history of a range of heterosexual encounters in addition to homosexual experiences.

The last survey publication identified in this review was the Dancey (1990) paper. Dancey examined whether specific variables would differentiate between a group of heterosexual females and lesbian women. These variables included personality factors such as warmth, dominance, and openness. Variables related to perceived attitudes and behaviors of caregivers (e.g., sex-role enforcement, maternal and paternal positivity, female standards) were also included in the study analyses. No significant differences in these variables were found between the two groups. The author suggested that these results support the line of reasoning that the etiology of sexual orientation in women may differ from individual to individual rather than there being common variables that would be associated with lesbian women but not heterosexual women and vice versa.

Conceptual Papers

Many articles included in this review provided some conceptualization of LGBTQ+ preference, orientation, and so forth, but only two of the articles were solely conceptual. The first article was Malott's 1996 paper that attempted to provide a radical-behaviorist account of the development of sexual preference and gender identity. The basic argument presented was that behavioral history and behavioral principles could explain sexual preference and gender identity. However, Malott carefully pointed out that his conceptualization does not imply that sexuality is a choice or that it can easily be reconditioned as many may assume (see Haldeman, 2002). Referring to the term "preschool fatalism" (p. 130), Malott explained that behaviors and values learned before a certain age (i.e., preschool) are almost impossible to influence. Therefore, although Malott argued against the genetic/biological basis for sexuality/gender, he did not necessarily do so to imply that LGBTQ+ individuals' behaviors can or should be reconditioned/retrained. In the end, Malott argued for helping LGBTQ+ individuals and working toward a more tolerant society.

The second article that was categorized as conceptual in this review was Snycerski et al.'s 2018 paper focused on demonstrating the utility of behavioral narratology as a valid behavioral approach to analyzing complex behaviors. Behavioral narratology is defined by Snycerski et al. as a

systematic behavioral analysis of narratives (e.g., identifying motivating operations and relational frames in commonly held beliefs of a people in a given culture) for the purposes of improving our understanding of human behavior and to inform related interventions. One of the complex behaviors highlighted in the paper as an example was the societal treatment of homosexuals. Therefore, the primary purpose of the paper was not focused on LGBTQ+ individuals but rather brought up the topic as an example of an overarching conceptual framework. In the analysis of the societal treatment of gay people, Snycerski et al. pointed out the harmful interventions that had historically been aimed at LGBTQ+ communities and asserted that cultural narratives (i.e., a story or statement about a topic that members of society perpetuate) are at least partially to blame for the ongoing poor treatment of those groups. To remediate the continued mistreatment of LGBTQ+ individuals, the authors advocated for addressing the current narrative to help improve public policy and the behavior of society for better treatment of LGBTQ+ communities.

Calls to Action

Two call-to-action papers were identified in this review: Leland and Stockwell (2019) and DeFelice and Diller (2019). Leland and Stockwell's paper primarily focused on providing behavior analysts with the information and tools to help facilitate support and affirming practices for transgender and gender-nonconforming (TGNC) individuals. TGNCaffirming practices are defined in the paper as "those that allow TGNC people to access valued reinforcers and resources at similar rates to those of their cisgender peers, while minimizing coercive contingencies" (Leland & Stockwell, 2019, p. 817). Furthermore, the authors outlined several barriers that TGNC individuals face, provided terms and definitions related to affirming practices with these groups, and presented a self-assessment tool to help practitioners become aware of personal biases. The self-assessment tool provided by the authors is designed to identify observable behaviors that could be targeted for change. For example, several questions on the self-assessment target use of pronouns.

The second call-to-action paper was written by DeFelice and Diller (2019). The primary objective of this paper was to describe the conceptual similarities between applied behavior analysis and intersectional feminism to create a framework for more inclusive practice. LGBTQ+ people were mentioned to demonstrate these conceptual similarities. For the example, the authors provided a brief history of abusive interventions aimed at LGBTQ+ individuals and then contrasted these interventions with recent studies helping individuals with developmental disabilities learn skills to avoid high-risk sexual situations. The latter studies are considered to be in alignment with the feminist perspective, whereas the former are considered harmful.

Representation of Groups

One variable assessed during this review was the difference in representation or treatment of groups under the LGBTQ+ umbrella. The data suggest the two groups discussed the most were gay and transgender individuals. Of the two experimental studies included in this review, one focused on gay participants and the other focused on a participant who engaged in transgender behavior (i.e., behavior consistent with a gender that is different in some way from the individual's sex assigned at birth; Leland & Stockwell, 2019, p. 817). Three commentaries were written in response to one study (i.e., Rekers & Lovaas, 1974). These commentaries discussed LGBTQ+ groups relatively broadly. Of the three survey studies, two focused on gay men, whereas one focused on lesbian women. The rest of the articles were call-to-action or conceptual papers that may have targeted one group over the rest but generally alluded to all subgroups of the LGBTQ+ umbrella at some point. Therefore, little difference in representation exists.

Date of Publication

The years between 1973 and 1977 were the busiest for behavior-analytic publications involving LGBTQ+ groups. During that period, both experimental studies and all three commentaries were published. Before that activity, two articles were published that focused on survey research (Brady & Levitt, 1965a, 1965b). Following the papers published between 1973 and 1977, a 17-year hiatus occurred that was broken by Dancey's (1990) survey, which attempted to find variables that would distinguish between self-defined heterosexual women and self-defined lesbians. After Dancey's publication, Malott published his conceptual paper in 1996. A 12year break followed until Snycerski et al. (2018) included the societal treatment of LGBTQ+ individuals as an example for their conceptualization of a behavioral framework. Then, Leland and Stockwell (2019) and DeFelice and Diller (2019) published their calls to action.

Journal Representation

The Journal of Applied Behavior Analysis published the most articles related to the topic of this review. The two experimental studies, along with the three commentary papers focused on the Rekers and Lovaas (1974) experiment, were all published in the Journal of Applied Behavior Analysis. As described in the previous section, all of these articles were published between 1973 and 1977. Since that time, the Journal of Applied Behavior Analysis has not published anything related to LGBTQ+ groups, whether supportive, neutral, or harmful. Behavior Analysis in Practice has published two papers (DeFelice & Diller, 2019; Leland & Stockwell, 2019), both

of which were published in 2019 in a special issue focused on diversity and inclusion. Both of these articles marked a step forward toward developing inclusive and supportive behavior-analytic practices. *The Psychological Record* has published three papers related to this topic, all of which were survey research related to history and sexual preference. Finally, *Behavior and Social Issues* and *Perspectives on Behavior Science* have each published a single article, both of which were conceptual.

Discussion

This review identified several important findings for behavior analysts. The first and most straightforward finding was that very few articles have been published in behavior-analytic journals that pertain to LGBTQ+ individuals. Only 12 articles were identified across all reviewed journals. In comparison, a quick search for "autism" as a keyword in a single journal included in this review (i.e., the Journal of Applied Behavior Analysis) produces 642 results. Although this difference in research attention can be explained by more available financial funding to behavior analysts for autism research, the disparity still highlights larger society's failure to value qualityof-life improvements of LGBTQ+ individuals. Additionally, it could be argued that a low number of published articles related to LGBTQ+ people is a sign that behavior analysts contributed little to the overall mistreatment of LGBTO+ individuals by mental health practitioners and researchers. However, the failure to publish or do anything to aid or support the LGBTQ+ community is still a failure by omission rather than commission.

The second finding of this review is that two experimental studies that attempted to change sexual preference or gender identity have been published in behavior-analytic journals. Although the methodology used in these studies may have differed from mainstream conversion therapies, their goals were the same. The first experimental study used stimulus fading to develop heterosexual arousal in three adult homosexual males (Barlow & Agras, 1973). When compared to the Rekers and Lovaas (1974) paper or other studies targeting sexual preference, the Barlow and Agras (1973) paper may not seem as problematic. For example, Barlow and Agras were focused only on increasing heterosexual arousal instead of decreasing homosexual arousal. By targeting the increase in heterosexuality, Barlow and Agras were able to avoid overtly aversive techniques to decrease homosexuality. Although this approach may have seemed progressive in comparison, the attempt to replace homosexual arousal with heterosexual arousal implied a higher value on heterosexual arousal and by extension on heterosexual people. In doing so, this study may have avoided overt harm to the participants by withholding aversive procedures but likely contributed to long-term damage to the LGBTQ+ community by perpetuating the perception that those groups are less acceptable than their heterosexual/cisgender peers.

A second discussion point of the Barlow and Agras (1973) study was their inclusion of only adult participants who sought treatment and were capable of providing informed consent. This aspect of the article may have seemed progressive, especially when compared to studies that included children who cannot advocate for themselves. However, the context and the environment under which the consent was obtained must be considered. As many of the other articles described, LGBTQ+ individuals faced enormous societal pressures to conform to heterosexual/cisgender expectations (Nordyke et al., 1977; Rekers & Lovaas, 1974; Winkler, 1977). These pressures likely contributed to the fact that each participant in the Barlow and Agras study was reported to have suffered from depression and alcohol/drug abuse (pp. 355-356). Therefore, it can be argued that Barlow and Agras further contributed to the struggles of their participants by further exposing them to therapies to change their sexual preference instead of providing affirming practices.

The only other experimental study identified in this review was the Rekers and Lovaas (1974) article that targeted a child who engaged in transgender behavior. Several issues emerged in the Rekers and Lovaas paper, including their conceptualization of masculinity and femininity, their use of aversive procedures, and their inclusion of a child as the participant of the study. The experimenters attempted to soften their stance by acknowledging that "society could afford to become more tolerant" and argued that the alternatives to their treatment were "arrest, trial, and imprisonment" (Rekers & Lovaas, 1974, p. 174). However, in merely stating that society could be more tolerant while attempting to change the genderpresentation behaviors in a child, Rekers and Lovaas were sending a message that transgender behaviors can and should be changed. Targeting LGBTQ+ individuals for behavior change further perpetuates attitudes that their behaviors can and should be changed to improve society.

Although both experimental articles reported success in affecting the participants' behavior, questions remain about the long-term effects and harm of the treatments used. More recent work has found that there are a number of harms to the individual related to the use of conversion therapy, including self-blame, depression, anxiety, guilt, suicidality, decreased self-esteem, increased alienation, loneliness, social isolation, increased negative feelings toward the family of origin, and increased sexual dysfunction (see Haldeman, 1994; Serovich et al., 2008; Shidlo & Schroeder, 2002; Smith et al., 2004; Tozer & McClanahan, 1999). In fact, in 2009, the American Psychological Association Task Force on Appropriate Therapeutic Responses to Sexual Orientation concluded that there is insufficient evidence that conversion/reparative therapies are effective in changing a person's sexual orientation,

and there is evidence that such therapy is harmful (American Psychological Association, 2009).

A third important finding of this review is that the critical responses decrying the Rekers and Lovaas (1974) study were published in behavior-analytic journals. Three years after the publication of the Rekers and Lovaas study, two critiques were published outlining many of the issues in the study. Although publication of the Rekers and Lovaas paper in behavior-analytic journals makes behavior analysts complicit in the overall plight of the LGBTQ+ community, the relatively immediate responses by Winkler (1977) and Nordyke et al. (1977) should be seen as the field self-correcting and attempting to repair the wrongdoing. Whether by coincidence or as a result of the critiques, no other experimental studies attempting to change LGBTQ+ behaviors have been published in behavior-analytic journals.

Finally, the last major finding is that following the experimental and commentary papers in the 1970s, very few studies published in behavior-analytic journals have mentioned LGBTQ+ groups. In the 1990s, Dancey (1990) conducted a survey to compare self-defined heterosexual and lesbian women, and Malott (1996) published his conceptualization of the development of sexual preference and gender identity. Both the articles published in the 1990s included language that does not align with today's standards. For example, when describing the survey results, Dancey appears to refer to heterosexuality and lesbianism as a choice. However, Dancey is not making a point of lesbianism being a choice in the article, so it appears to be a case of outdated language/terms. Similarly, Malott used some outdated terms and concepts but was careful to specify that his conceptualization does not imply that sexual preference or gender identity can or should be changed. Therefore, the overall tone and focus of the studies at this time marked another step forward for the field.

After the two articles published in the 1990s, another significant break occurred between articles referring to LGBTQ+ groups. In 2018, Snycerski et al. included LGBTQ+ groups as an example in their conceptualization that appeared to be written in support of the LGBTQ+ community in tone and content. Then, in 2019, two important calls to action were published in a special issue of *Behavior Analysis in Practice* (DeFelice & Diller, 2019; Leland & Stockwell, 2019). These calls to action provided behavior analysts with information, tools, and resources to better serve LGBTQ+ groups.

Limitations

This article includes many limitations. First, the method used in this review could have missed articles relevant to the history of the treatment of LGBTQ+ individuals in behavior analysis. By only reviewing journals featured on the ABAI and BACB websites, papers published in non-behavior-analytic journals would not be included. Additionally, papers published in

journals that are behavior analytic but are not listed on either ABAI's or the BACB's website would also be missed. This review excluded those publications to establish an objective criterion for determining what articles should be considered behavior analytic. Given this is a historical review, it is worth noting that when the field was early in its development, there were additional journals in which behavior analysts published. However, it is not possible to know the history of every journal that may have published behavior analytic content at some point. In order to ensure all articles were clearly associated with behavior analysis, the more restricted approach was needed Future research could extend the review to other journals by establishing a different criterion for inclusion (e.g., agreement among behavior analysts as to which journals are behavior analytic).

Another variable that could have led to omitted articles was the terms used in the search. "Gender" and "sexual" were chosen after pilot reviews revealed that this combination of terms captured all articles found under other term combinations. Because most terms referring to LGBTQ+ individuals derive from or include "gender" and "sexual" in some way, the use of those terms appeared to produce thorough results. However, terminology describing LGBTQ+ individuals has repeatedly changed in research and common use, so articles may have been missed if they did not include terms related to "gender" and "sexual."

A second limitation of this study was that papers might have been included that should not be considered behavior analytic. As previously stated, any experimental research targeting socially invalid behaviors would not meet the full criteria for Baer et al.'s (1968) seven dimensions of behavior analysis. This would likely preclude both experimental studies included in this review. Additionally, it could be argued that any article that is not experimental or conceptual can be difficult to evaluate in terms of behavior-analytic content. For example, although behavior analysts use survey methodologies to conduct research, there is nothing inherently behavioral about survey research. Therefore, a majority of the papers included in this review could be questioned in terms of behavior-analytic content.

Conclusion

The purpose of this article was not to judge previous behavior analysts or their work by present-day standards or create guilt; nor was it to compare the field of behavior analysis to other fields regarding treatment and support of LGBTQ+ people. Rather, the purpose was to review the historical treatment of LGBTQ+ individuals by behavior analysts to better understand our history as a way of informing current ethical practices.

The conclusions of this review were ultimately that, like many subfields of psychology, behavior analysts did participate in harmful experiments in an attempt to change sexual preference and gender identity. Two such studies were published in behavior-analytic journals. Although this history is disappointing, it is something the field must acknowledge and confront. Following the example of the behavior analysts who immediately published the critical reviews of the Rekers and Lovaas (1974) study, behavior analysts must continue to be aware of research and practice that involve marginalized groups such as the LGBTQ+ community and to advocate for them. One important area of advocacy involves the promotion of interventions targeting socially valid concerns identified by the groups concerned with the intervention. By promoting and supporting socially valid interventions, behavior analysts can help prevent the use of controversial practices that harm clients and the reputation of the field (see Kirkham, 2017). Most recently, this advocacy approach has been evidenced by behavior analysts in the special issue of Behavior Analysis in *Practice* and must continue as a focus of the field.

As Leland and Stockwell (2019) described in their paper, an important first step toward providing support and assistance to the LGBTQ+ community is using affirming practices. Although the definition of affirming practices provided by Leland and Stockwell is specifically aimed at TGNC people, it can be adapted to include the LGBTQ+ community at large. For example, a working definition of affirming practices for the LGBTQ+ community could be "those that allow LGBTQ+ people to access valued reinforcers and resources at rates similar to those of their heterosexual/cisgender peers, while minimizing coercive contingencies." To successfully adopt and use affirming practices, behavior analysts may first benefit from guidance by way of Leland and Stockwell's self-assessment or other means of identifying biases and learning to overcome them.

The LGBTQ+ community faces a disproportionate number of obstacles and challenges that behavior analysts can help alleviate through research and practice. Such obstacles include, but are not limited to, the following: workplace discrimination/harassment (Brewster et al., 2014); difficulties accessing quality health care (Fredriksen-Goldsen et al., 2013); safety in schools (Formby, 2015; Russell et al., 2010); housing/homelessness (Matthews et al., 2019); access to gender-inclusive restrooms, locker rooms, and other similar facilities (Barnett et al., 2018; Seelman, 2014); and higher levels of unemployment (Conron et al., 2014). In 1953, B. F. Skinner called society to action with this statement: "The methods of science have been enormously successful wherever they have been tried. Let us then apply them to human affairs" (p. 5). There is no doubt that behavior analysis is a strong science that can help alleviate socially significant issues. Therefore, in keeping with Skinner's statement and building on the recent calls to action published in Behavior Analysis in Practice, behavior analysts must not only acknowledge the historical treatment of LGBTQ+ individuals but also create affirming practices and address issues faced by the LGBTQ+ community.

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Declarations

Conflict of Interest The authors declare they have no conflicts of interest.

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