

**K. A. LATTAL: COLLECTOR, CURATOR,
AND HISTORIAN OF BEHAVIOR ANALYSIS**
*K. A. LATTAL: COLECCIONISTA, CURADOR,
E HISTORIADOR DEL ANÁLISIS DE LA CONDUCTA*

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Resumen

Se llevó a cabo una revisión bibliográfica centrada en la historia del análisis de la conducta realizada por Lattal y sus colegas. Se identificaron tres temas entrelazados: la historia de los aparatos, la investigación biográfica y un objetivo pedagógico subyacente. Dentro de estos temas, se evidenció que la investigación de Lattal en la historia del análisis de la conducta ha contribuido a la internacionalización del campo. La revisión bibliográfica se complementó con una entrevista semiestructurada con Lattal. En general, la amplitud de los temas dentro de la historia del análisis de la conducta realizada por Lattal y sus colegas abarca 11 categorías descritas por Guimarães y de Mello (2023), que pueden unificarse por su propósito pedagógico. Se concluye que el enfoque de Lattal en la investigación y la docencia integra consistentemente el contenido y el contexto histórico.

Palabras clave: historia del análisis de la conducta, pedagogía, instrumentos científicos, enseñanza

Abstract

A literature review was conducted focusing on the history of behavior analysis by Lattal and his colleagues. Three intertwined themes on the history of apparatus, biographical research, and an underlying pedagogical aim were identified. Within these themes, it was evident that the scholarship of Lattal within the history of behavior analysis has contributed to the internationalization of the field. The literature review was complemented with a semi-structured interview with Lattal. Overall, the breadth of topics within the history of behavior analysis by Lattal and colleagues spans 11 categories described by Guimarães and de Mello (2023) that may be unified with by their pedagogical purpose. It is concluded that Lattal's approach to research and teaching consistently integrates historical content and context.

Keywords: history of behavior analysis, pedagogy, scientific instruments, teaching

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Learning and teaching history helps individuals and societies understand their past, shape their present, and influence their future (Pickren & Rutherford, 2010; Smith, 2007). These goals and accomplishments align with the scholarship on the history of behavior analysis by Lattal, his history-oriented pedagogical approach, and role as a collector and curator of scientific instruments. Such a commitment to history embraced by Lattal fosters critical thinking by encouraging analysis and interpretation of various sources and perspectives; builds cultural awareness and a sense of scientific and professional identity and community; and promotes learning from mistakes and successes of the field to improve future decisions (Morris & Peterson, 2022; Santayana, 1905/2005–2006, p. 284, as cited by Morris, 2022).

It is imperative to learn the history of our field (Michael, 2004). A central purpose of learning and teaching the history of behavior analysis is “to improve the human and nonhuman condition” (Morris, 2022, p. 699). Morris noted that teaching foundations of behavior analysis in a historical context, makes them more accessible as they are concrete actions of philosophers and scientists. Such pedagogical approach exposes students to the lives of individuals from different times and places and contributes to moral understanding (Stearns, 1998). Furthermore, knowing the history of behavior analysis facilitates the acquisition of new knowledge in the field and affords awareness of the various complex relations between our professional and scientific repertoires (Michael, 2004, pp.93-94).

The present paper aims to address three inter-related goals, to: examine a selection of contributions by Lattal and colleagues to the history of behavior analysis; highlight Lattal’s role as collector and curator of scientific instruments; and, propose a pedagogical aim as unifying feature of the scholarship on the history of behavior analysis by Lattal and colleagues. To accomplish these goals, a literature review was conducted as described below.

Approach

To examine the contributions of Lattal and his colleagues to the history of behavior analysis, an advanced literature search was conducted using PubMed (February 23, 2024) entering “Lattal, KA” (as Author) and “history” (as Title). Literature on the topic of behavioral history and on conceptual and philosophical topics with a historical relevance (e.g., Diller & Lattal, 2008) were excluded from the review. The focus of the search and inclusion of literature for the review was primarily on work dedicated to the history of behavior analysis. From the PubMed search mentioned above, three publications were selected.

The literature search described above was complemented with the inspection of an updated version of Lattal's curriculum vitae (CV, K. A. Lattal, personal communication, May 1, 2024). More specifically, the titles of all publications listed on the CV were reviewed to assess whether the content was on the history of behavior analysis. Not every publication selected contained the word "history" on its title, so further examination of abstracts was required in cases when the content was not clearly within the boundaries of history of behavior analysis. My own history and memories of studying the work of Lattal (as a graduate student and collaborator) were also used to identify and include some of this literature into the review. Thus, I acknowledge that the present selection of research may not be exhaustive and the interpretation of the work is not bias-free given my own historical context and connection with Lattal (see Morris et al., 1990, p. 147).

To review the literature selected, some aspects of the field of historiography were used to critically examine sources (Morris et al., 1990). Historiography is a field that guides the examination of texts to identify changes of a phenomenon (e.g., technology) over time, as well as how to reconstruct its history using reflection and contextualization (social, cultural, political) (Guimarães & de Mello, 2023). Morris et al. provided methodological guidance to behavior analysts conducting historiographical research by considering the provenance of sources selected (i.e. primary, secondary, tertiary), and the dimensions from which the research is conducted (i.e., internalist vs. externalist, great person vs. Zeitgeist, and presentist vs. historicist). Additionally, a guide adapted by Guimarães and de Mello (2023) was used to organize areas of study within the history of behavior analysis and will be further described below.

To supplement the literature review, a semi-structured interview was conducted with Lattal via Zoom. After reviewing the literature selected, I crafted six questions (see Appendix) based on selected literature. A semi-structured interview allowed the flexibility to elaborate themes that emerged from the literature review and to gain more nuanced perspective from Lattal on such themes (Adeoye-Olatunde & Olenik, 2021; McGrath et al., 2019). The interview was recorded its content embedded into the themes outlined below.

Findings

A total of 59 sources spanning the years of publication of 1936–2023 were identified and incorporated into the present literature review. Twenty-seven publications included Lattal as author between 1987–2023, were considered primary sources in this review. Out of these 27 publications, Lattal was the sole author of 15, and co-author of 12.

Twenty-four publications by Lattal and colleagues focused on the history of behavior analysis were reviewed (the other three were conceptual and methodological).

The remaining thirty two sources included 10 articles on the history of behavior analysis and its context, six books (e.g., philosophy of scientific instruments, history of human sciences, history of the United States), five articles on pedagogy (including teaching history of behavior analysis), three publications by B. F. Skinner, two websites, two methodological guides for research on history of behavior analysis (Guimarães & de Mello, 2023; Morris et al., 1990), two articles by curators of scientific instruments, two essays on the importance of studying history, and two methodological articles on semi-structured interviews.

The scholarship by Lattal and colleagues within the history of behavior analysis is not restricted to scientific instruments such as cumulative recorders (e.g., Lattal, 2004), it also includes the history of important texts in behavior analysis and psychology (e.g., Lattal & Rutherford, 2013) as well as pedagogical approaches to teaching history of behavior analysis (e.g., Lattal, 2022a). Perhaps not as well known to behavior analysts is that the work that Lattal within the history of behavior analysis also involves collecting and curating scientific instruments. As the selected literature was analyzed and synthesized in the context provided by additional sources and memories of working with Lattal, as well as a semi-structured interview with him, three intertwined themes emerged for the sections presented below.

Instrumentation and Researchers

The relation between research and technology is intimate (Lattal, 2008). In a special issue of the *Mexican Journal of Behavior Analysis (MJBA)* Lattal and Yoshioka (2017a) described the complex interrelations between a human and technology while conducting an experiment with non-human animals (see Figure 1, p. 179). Some of these interrelations involve designing and implementing contingencies and measurement systems for behaviors of interest. As co-editors of this special issue of *MJBA*, Lattal and Yoshioka explained how as part of an intimate relation, the human researcher is considered a central instrument to the research. Accordingly, these authors proposed that the human, as instrument, can also be refined.

The close connection between the human instrument and technology is dynamic and reciprocal, resulting in modifications in the human and non-human instruments to better accomplish the scientific goals at hand (Lattal & Yoshioka, 2017b). Relatedly, a system of measurement may be changed to increase its accuracy. Lattal and

Yoshioka elaborated on the multitude of influential variables on the performance of a human as a scientific instrument (e.g., physiological, social, environmental). One of such variables is the conceptual framework held by the researcher, which will affect their relation with technology. According to Lattal, a conceptual framework “it’s kind of a reciprocal relationship between the instruments and the investigator” (personal communication, August 12, 2024). Jenkins (1979) elaborated on such interplay between instrumentation and conceptual framework by stating that, “it is hard to overestimate the influence of experimental arrangements on the shape of a learning theory. The maze, runway, and puzzle box do not suggest shaping, which is the operationalization of response-selection by reinforcement” (p. 200). Interpreting the meaning of this quote, Lattal shared that Jenkins

(...) says is that the shape the instruments determines the shape of the conceptual framework, and that Skinner would have never come up with the idea of shaping if he hadn’t had a box. If you’re thinking about cognitive maps, then you need something to map, something that looks like a bunch of streets, you need a maze. The conceptual framework doesn’t come out of nothing, it probably comes out of the way that you are thinking about organizing how you are going to study the data (personal communication, August 12, 2024).

Applying this broad reciprocation between instrumentation and conceptual framework, when asked about the origins of his own conceptual framework, Lattal responded:

I think that my conceptual framework was framed by the fact that my first assignment as a graduate student was to build my own Skinner box. And so, I was given a 4 by 8 ft piece of plywood, an aluminum work panel, a feeder, a response key, and some lights, and they said: “Build a box”. And so, I took it upon myself to figure out how to build a box. I had some help from people that had already built other boxes. But it was really an interesting assignment. That’s what I had to work with. When you start looking at behavior in a controlled environment and you start manipulating things, then you start thinking about how the environment really does play a major role in all of this. I think that is where my conceptual framework came from (personal communication, August 12, 2024).

The fascination of Lattal with the interplay between instrumentation and the conceptual framework of the investigator is clear and one of his subjects of scholarship. Although it is hard to identify a single point of origin when examining history, it can be said that the history of instrumentation in behavior analysis started with B. F. Skinner (Lattal

& Yoshioka, 2017a). Skinner borrowed and adapted from experimental physiology to design and create the cumulative recorder (Lattal, 2004). As Lattal noted, the history of the cumulative recorder: “is a history of striving to achieve an ever more accurate and precise picture of behavior in real time, the primary subject matter of the discipline” (p. 330).

Cumulative Recorders and Snap Leads

Within the study of the history of behavior analysis, Lattal has focused on the history of the cumulative recorder. While also noting and lamenting the decline in the use of cumulative recorders as Skinner (1976) did in his note titled “Farewell My LOVELY!” and similarly Kangas and Cassidy (2011) followed with their “Requiem for my lovely”, Lattal has been reconstructing the history of this treasured instrument. For example, Lattal (2021a) drew parallels between the decline of one the most popular cumulative recorders, the model C-3, and the Model T Ford, the subject of the original essay published in the *New Yorker* magazine by E. B. White (1936), which Skinner borrowed for his note in the *Journal of the Experimental Analysis of Behavior* (*JEAB*) in 1976. By the way, White was the co-author of *The Elements of Style* (Strunk & White, 1959), which Lattal routinely recommends to his students to teaching and learning writing.

A comprehensive history of the cumulative record and its various refinements was documented by Lattal (2004). To reconstruct the history and its nuances, Lattal examined the research as well as advertisements of cumulative recorders published in *JEAB* over the years. This history of the cumulative recorder began in the 1930s with the modified kymographs (i.e., an instrument in experimental physiology to measure variables such as blood pressure in real time) built by Skinner. It wasn’t until the 1950s and 1960s when the cumulative recorder was perfected and commercialized by several companies. Lattal acknowledged the demise of the cumulative recorder while recognizing its essential place in the history of the experimental analysis of behavior.

The interest and dedication of Lattal for the internationalization of behavior analysis is reflected in his collaborative work of tracing the history and use of instruments used in the laboratory in Japan. More specifically, Sakagami and Lattal (2016) described the history of an early operant conditioning chamber requested by Japanese researchers from B. F. Skinner and shipped to Japan by Harvard University instrument maker Ralph Gerbrands in 1952. Asano and Lattal (2008; 2012) also provided the historical context of an early cumulative recorder, sent to Japan via Skinner in 1952. Asano and Lattal noted how

such an early version of the cumulative record propelled commercial manufacturing of cumulative recorders in Japan. The study of the history of these instruments reveals the history of behavior analysis in Japan.

Lattal also conducted research on the provenance of pieces of hardware used in the laboratory. For example, in another international collaboration, Escobar and Lattal (2014) traced the history of the snap lead, a Nu-Way snap connector soldered to a wire at each end, used to program electromechanical control panels on relay racks which in turn, controlled instruments such as operant chambers. According to Escobar and Lattal, snap leads originated from early snap fasteners used for clothing in the eighteenth century. After several adaptations for using in electrical devices, snap leads made their way to operant conditioning laboratories. Prior to the use of snap leads to program electromechanical control panels, relays and modules were soldered together with wire, which made for a rigid arrangement (Escobar & Lattal, 2014). The development of the snap lead allowed for fast changes of programming, making them align with an empirical-inductive approach to study behavior.

Collecting and Curating Beyond Cumulative Records

Lattal not only has documented the history of various instruments and hardware as mentioned above, he has acquired various instruments and displayed virtually in the Behavioral Apparatus Museum, within The Aubrey Daniels Institute². The museum has five virtual rooms with photographs and descriptions of apparatuses organized by environments, observation and measurement, presenting stimuli, arranging consequences, and responses. Lattal's work as a collector and curator of instruments used in the operant laboratory and other artifacts related to the history of behavior analysis, is not as well known. The following four lines of Lattal's CV reflect such a role,

Curator of an extensive collection of rare and obsolete behavioral research apparatus consisting of over 500 museum-quality pieces, some of which are displayed at a virtual museum I created, with the support of a small grant from the American Psychological Society, for the Aubrey Daniels Institute, <http://aubreydanielsinstitute.org> (personal communication, May 1, 2024).

These lines of Lattal's CV refer to a long dedication to the examination, preservation, scholarship, and pedagogy of scientific instruments. Lattal has accomplished what Baird (2004) stated had not

2.-<https://www.aubreydaniels.com/about/aubrey-daniels-institute/behavioral-apparatus-museum>

been done in science, which is to put into words a full description of the apparatus in action. With clear, precise, and engaging language Lattal filled this void in the scientific literature of our field. More specifically, detailing the movement of the paper in a cumulative recorder, as well as the deflection of the pen, among other aspects of the functioning of various instruments in behavior are topics of his study (e.g., Lattal, 2004).

In his CV, Lattal uses the term curator to describe part of his professional and scientific activities. Using the terms collector and historian in the present paper is aimed to describe the breadth of Lattal's research repertoire. These terms also are meant to convey that to Lattal, conducting research within the history of instruments involves interacting with them, and even organizing a collection for display.

What makes one a collector, curator, and historian of behavior analysis? Lattal shared that some of the behaviors involved in these endeavors are traveling to museums or to interview persons related to the subject of study, collaborating with other behavior analysts and experts in other fields such history of psychology, consulting with curators and museum and library employees, examining documents from archives, among others (Lattal, 2004 see footnote, p. 329; Lattal, 2023, see footnote, p. 377). Thus, although there is great value in learning about history from published works, knowledge and perspective about history derives also from interacting with others (and listening to their stories) who may not be in the academy (Dunbar-Ortiz, 2014, p. xi; Himeline, 2022). Lattal's work serves as a model to continue the necessary labor of documenting the history of behavior analysis.

During an interview with Lattal, he shared that his collection started with cumulative recorders in the 1990s. When asking Lattal how he acquired the artifacts for his collection, he replied: "I just noticed that people were throwing out stuff, and I thought, wait, if all this stuff is going to be thrown out, there is going to be no record of it at all" (personal communication, August 12, 2024). His interest in pursuing research on the history of cumulative recorders was ignited by discovering their link with kymographs. He was able to learn more about kymographs in the British Science Museum during a sabbatical leave in London³.

Lattal's collection includes other types of instruments such as chicken box used in Animal Behavior Enterprises (The University of

3.-While in London, Lattal procured some old cumulative recorders that were going to be thrown out. Michael Perone, who was visiting Lattal in London during that time, was instrumental in transporting those cumulative recorders for Lattal's collection to the United States (K. A. Lattal, personal communication, August 12, 2024).

Akron, *Cummings Center for the History of Psychology*)⁴, and at least one air crib displayed in the room dedicated to environments in the virtual Behavioral Apparatus Museum⁵. The air crib was built by Skinner (1945) to provide a sterilized and quiet environment for one of his newborn daughters. Although his goals and results of raising a healthy child and aiding his wife with child care were accomplished as well of at least 50 other children, the commercialization of the aircrew failed due to misunderstandings of the public that have been corrected (Joyce & Faye, 2010; Skinner-Buzan, 2004). Among Lattal's collection and within the virtual museum, there are also teaching machines, which were hardware developed in the 1920s to optimize instruction in the classroom (Benjamin, 1988; Skinner, 1958). One of the biggest contributions to his collection, "a real treasure", came from Bea Barrett (see LeBlanc et al., 2023, pp. 5-8). Upon her retirement Barrett called Lattal and said: "I have to get everything out of my lab; do you want it?" (K. A. Lattal, personal communication, August 12, 2024).

Curators are researchers of the history of what they are curating. In the case of Lattal, it is evident that his historical research entails the behaviors mentioned above as well as several types of research (e.g., archival, historiographical). Similarly, curators of scientific instruments outside of behavior analysis, Taub (2019) and Warner (1990) revealed the varied behaviors involved in being a curator. For example, Taub, while in the Whipple Museum of the History of Science, followed the inquiry initiated by Warner in the Smithsonian Institution, dedicated to examining the history of the term *instrument* in science. To do this, these authors examined the changes of the term over the years on the Oxford English Dictionary, while noting that the historical context of creation and function are part of the definition of a scientific instrument. Accordingly, Holland (2002) stated that: "Historic scientific instruments provide a point of access for understanding the history of science" (Introduction, Para 1).

Biographical History

In 2016, Lattal received an award for the international dissemination of behavior analysis by the *Society for the Advancement of Behavior Analysis*⁶. Relatedly, Lattal served as editor for English language submissions for the *MJBA* from 1996–2000, 2011–2019, and in its Board of Editors from 2001–2011 (CV, K. A. Lattal, personal communication, May 1, 2024). As mentioned earlier, the work in these

4.- <https://www.uakron.edu/chp/abe/the-iq-zoo/animal-behavior-enterprises.dot>

5.- <https://www.aubreydaniels.com/about/aubrey-daniels-institute/behavioral-apparatus-museum/environments>

6.- <https://saba.abainternational.org/awards/international-dissemination-of-behavior-analysis/kennon-andy-lattal/>

international collaborations includes topics within the biographical history of great persons in behavior analysis (Guimarães & de Mello, 2023; Morris et al., 1990). For example, with Rogelio Escobar, a behavior analyst and scholar at the National Autonomous University of Mexico, Lattal published the work on snap leads mentioned earlier and also work dedicated to the impressive career of a not-so-well-known behavior analyst, Ben Wyckoff (Escobar & Lattal, 2011). Escobar and Lattal revealed that aside from his work on observing responses, Wyckoff conducted work within applied behavior analysis and engaged behavior analysis in social justice movements.

With Alexandra Rutherford, an expert in the history of psychology from York University in Canada, Lattal co-edited a special issue of the *MJBA* dedicated to the legacy of Watson's influential 1913 article "Psychology as the behaviorist views it" (Lattal & Rutherford, 2013). Using a contextualistic approach Lattal and Rutherford re-examined this text by Watson and its impact over the years on behavior analysis. While focusing on Watson, a contextual approach included aspects of the Zeitgeist that contribute to such text as a manifesto of the time and where it stands in more contemporary times. Another analysis of a historical text was Lattal's (1998) review of Edward L. Thorndike's monograph *Animal Intelligence* which advanced an experimental and objective, compared to an anecdotal and introspective, approach to behavioral research. Lattal analyzed Thorndike's monograph in light contemporary issues of research methodology to study behavior, the law of effect, and relations between human and non-human behavior.

Lattal has also written about Nathan H. Azrin (Lattal, 2013), Fred S. Keller (Lattal, 2009), Hayne Reese (Lattal 2022a, b), and Murray Sidman (Lattal, 2021b) to recognize their legacy in behavior analysis. Lattal (1992) edited a special issue of *American Psychologist* dedicated to B. F. Skinner titled *Reflections on B. F. Skinner and Psychology*. Lattal et al. also co-edited a volume of *JEAB* dedicated to the work of Murray Sidman (McIlvane et al., 2021). Generally, in these retrospective pieces, Lattal takes a perspective that spans from the past to more present times, highlighting the impact of a legacy of work to present and future behavior analysts.

While serving as editor of *JEAB*, Lattal (2002) introduced a volume dedicated to the legacy of the Harvard Pigeon Lab. In the introduction to such tribute, Lattal described the reciprocal relations between the work from the Harvard Pigeon Lab and *JEAB*. Although this case may not fit the category of biographical history, it contains history of the individuals who worked in the Harvard Pigeon Lab who also served as editors of *JEAB*. This type of research has been categorized as institutional history (Guimarães & de Mello, 2023). The history of

publications in *JEAB* have been foundation for much (not all) of Lattal's research in the history of behavior analysis. More specifically, Lattal (2008) reflected on 50 years of publications in *JEAB* in his article titled "*JEAB at 50: Coevolution of Research and Technology*". Similarly, and likening journals to institutions, Lattal (1999) reflected and assessed the position of the *MJBA* on its 25th anniversary.

Pedagogy as a Unifying Goal

The wide range of topics within the history of behavior analysis covered by Lattal and colleagues may be amalgamated by its pedagogical purpose. An overarching goal in the literature reviewed above is teaching the history of behavior analysis and psychology. Actually, Lattal (2022) provided a framework to incorporate history of behavior analysis into courses on the experimental analysis of behavior (EAB), learning, and history of psychology. According to Lattal, integrating historical information into these courses sets the occasion to show the origins of present research; it "provides students a perspective on and a framework for considering the contemporary state of science" (p. 752). Furthermore, Lattal concluded: "Helping students appreciate the events and people responsible for shaping the science by teaching something of the history of EAB strengthens the present science and helps ensure its future" (p. 753).

The pedagogical aim of Lattal's scholarship on the history of behavior analysis is also made explicit in the first paragraph of his article titled "*A Tale of Two Rats: The Backstory of a Clever Cartoon*":

"Cartoons have an important place in teaching, whether the students are 20-year-olds taking a conventional college-level course, trainees for important caregiving positions, employees in major industries, or parents striving to help their children with learning and adjustment. Cartoons can distill complex ideas to a few strokes of the pen and an equally few well-chosen words. As such, they allow teachers to connect with their students with the subject matter in unique ways that are easily relatable to everyday life. Cartoons also inject humor into what for some is deadly dull stuff, perhaps increasing interest and awareness" (Lattal, 2023, p. 378).

In this article, Lattal tells the history of a cartoon that appears in many psychology textbooks and has been a well-known pedagogical tool to describe research in an operant laboratory; specifically, how the process of shaping behavior is dynamic and reciprocal. The caption of the original cartoon showing one rat talking to another while pressing a lever in an operant chamber, reads: "Boy, do we have this guy conditioned. Every time I press the bar down he drops a pellet in". In a

prior publication, Lattal (2020) revealed the origins of the cartoon for the Harvard University humor magazine *The Jester of Columbia*, by students who had taken the Keller and Schoenfeld introductory course, which included a laboratory component.

Content-relevant cartoons have been effective tools to complement teaching not only in psychology (Sadowski et al., 1994) but in other disciplines such as physics and across instructional levels (Khalid et al., 2010). According to Khalid et al., teachers expressed that teaching with cartoons seems to stimulate students' imagination and creativity, and contributes to an overall positive environment. Such findings are in line with Lattal's (2023) observations on how humor instilled by cartoons may promote interest and awareness in students.

The evident purpose of teaching in Lattal's scholarship on the history of behavior analysis also transpires in Gleeson and Lattal's (1987) examination of the (in)accurate use of the term Carneau and Carneaux to refer to the breed of pigeons frequently used in operant research published in *JEAB* and other outlets. To do this, Gleeson and Lattal addressed the use of the terms throughout time in the pertinent literature and analyzed specific volumes of *JEAB* and other journals that published operant conditioning research with pigeons. In line with dedicating scholarship to the use of terms, Lattal et al. (2017) also reviewed the literature to address and revise the definition of the concept of resurgence. In refining the definition of resurgence, Lattal et al. examined its history while allowing flexibility to avoid constraining the phenomenon.

The Lattal laboratory, briefly mentioned at the beginning of this paper, is an active pedagogical setting and a place where students become independent researchers. The pedagogical value of collecting and using a variety of instruments (old and new) sets the occasion to learn about the history of behavior analysis. Lattal is highly engaged in each individual student's work, promotes interactions with scientific instruments and between students in the laboratory which allow for the emergence of mentoring networks. A cohort model whereby students serve as teachers and guides of other students, instill confidence, trust, collaborations, and independence. Related to teaching, Lattal stated:

It seems to me a natural part of teaching is to understand the methods that we use to define the concepts that give us the ideas about the research that we're going to pursue. That, in turn, of course, affects the instruments that we use and so it's the interesting broad reciprocation between instruments, scientists, and concepts that continues to spiral upward and onward (K. A. Lattal, personal communication, August 12, 2024).

Concluding Remarks

To organize the areas of study within the history of behavior analysis, Guimarães and de Mello (2023) proposed 11 thematic categories: biographical, conceptual, institutional, disciplines, research topics, methods, apparatus, events, social processes, texts, and debates. Although each category emphasizes a focus, a work may include more than one category. Accordingly, Guimarães and de Mello proposed ways to identify a primary (and secondary, etc.) area of focus by examining the presence of a word in the title, keywords, abstract, and throughout the text.

The guide adapted by Guimarães and de Mello (2023) is useful to organize and appreciate the breadth of topics covered by Lattal and colleagues within the history of behavior analysis. The literature reviewed above spans the 11 categories proposed by Guimarães and de Mello. The first three sections above dedicated to the theme of instrumentation are primarily focused on the history of apparatus. Accordingly, Lattal and collaborators focused on the creation, uses, and adaptations of the physical objects, and their corresponding social context.

Lattal and colleagues have also contributed to the category of biographical history (Guimarães & de Mello, 2023). Additionally, the themes of conceptual history (e.g., Lattal et al., 2017), institutional history (e.g., Lattal, 2002), and history of texts (e.g., Lattal & Rutherford, 2013) have been covered. As Guimarães and de Mello (2023) noted, a work may address more than one theme. Such convergence of themes is evident in much of the work reviewed here. For example, Lattal (2008) reviewed and reflected on *JEAB* as an institution, while also addressing historical aspects of research topics methods and procedures (e.g., shaping and autoshaping, p. 132), and events in behavior analysis (e.g., the first experiment in *JEAB*, in 1966, to use an experiment controlled by a computer, p. 131). The history of social processes and debates are also present in the literature on history of behavior analysis by Lattal and colleagues (e.g., discussion of the Modernist era when Watson published his manifesto, Lattal & Rutherford, 2013, p. 2).

Although I have strived to remain focused on the literature on the history of behavior analysis, in my experience studying the work (within and beyond history) of Lattal, no matter the area of study, his approach to research and teaching consistently integrates history. Thus, I see pedagogy as a unifying factor of the scholarship on history of behavior analysis by Lattal and colleagues. For Lattal, the topic of history has been a deliberate area of research and foundational to other types of his conceptual, basic, applied, and translational research.

Examining the scholarship on the history of behavior analysis by Lattal and colleagues shows how behavior analysts can have a broad repertoire of research. Actually, to Lattal, conducting historical research in behavior analysis,

(...) is all observation and verification. You can't just take what people tell you at face value. You do have to go and somehow verify that what they are saying is the way that it really was, or an approximation of what it really was. I've always been really comfortable conducting this type of research. It's all part of exploration, and following themes, and that's the stuff we do in the laboratory. It seems to me it's the same process with historical research, it's just more fun (K. A. Lattal, personal communication, August 12, 2024).

Though the selection process and inclusion criteria for this review may not have resulted in an exhaustive selection of works dedicated to the history of behavior analysis by Lattal, it is hoped that the review presented in this paper is representative of breadth of research within this area. Diligence, patience, curiosity, openness, and flexibility drive Lattal to address such wide range of topics within the history of behavior analysis and psychology. The guide proposed by Guimarães and de Mello (2023) was meant to organize rather than restrict research within the history of behavior analysis. Accordingly, categories or themes of research within the history of behavior analysis remain to be created as work on the history of our field is to be continued (Morris et al., 1990). Lattal has provided impactful examples of scholarship to build cultural awareness, a sense of scientific and professional identity and community, learn and acknowledge the foundations, dynamism, and complexity of our field. It is exciting to see what will come out next on his productive research agenda, as Lattal is always onto something new. Such broadness and flexibility are integral to Lattal's (2024) approach to research and pedagogy and reflected on the perspective of his own approach to pedagogy:

It has evolved, which is to say that it's been shaped by its effects. Certain things have an impact on people, and tend to be repeated. Other kinds of things that I may think may are very important at the moment seem have little impact and they disappear into the dustbin of history [laughs]. An so it goes, you know. There is very little intentionality into any of my patterns of behavior, I see my behavior having been shaped by its effects on my students. What you see is the product of many years of shaping, of differential reinforcement, which is shaping. Of not only of the way that I think about the world, but of the way that I teach other people about the way that I think about the world, which is all I can do.

It's fun to think about this stuff (personal communication, August 12, 2024).

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