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CONTENTS

NOTE: Prior to Volume 16, Number 1 (Spring 2013) the *Journal of Behaviorology* went by the name of *Behaviorology Today*, which occasionally published fully peer-reviewed articles, explicitly so labeled. Beginning with Volume 15, Number 1, *all* new material receives full peer review. See the "Submission Guidelines" for details.

<i>Editorial</i>	2
<i>The Emergence and Expansion of Behaviorology in the Companion Animal Behavior Technology Field</i> JAMES O'HEARE	3
<i>Does Periodic Instant Messaging While Working Improve Productivity and Quality of work?</i> ANGELA LEBBON	7
<i>Syllabus Directory*</i>	16
<i>A Look at Pharmacotherapy for Treatment of Severe Behavior Disturbances</i> PHILIP R. JOHNSON	17
<i>Submission Guidelines</i>	26
<i>Editorial Review Board & Guest Reviewers / Back Issues & Donations</i>	27
<i>Visit www.behaviorology.org / Journal & Web Site Copyrights</i>	27
<i>TIBIA Memberships Costs & Criteria & Benefits</i>	28
<i>TIBIA Membership Cost Details (and Application Form)</i>	29
<i>TIBI / TIBIA Purposes</i>	30
<i>About Behaviorology, TIBI, and Journal of Behaviorology</i>	31
<i>Some TIBI Board Member Contacts</i>	32

* This issue does not contain any TIBI course syllabi. New syllabi, or updates of previous syllabi, may appear in future issues. (See the *Syllabus Directory* for details.)

Editorial

Philip R. Johnson

University of Arizona—Tucson

The TIBI 27th Behaviorology Anniversary Convention produced a number of papers; three of these papers appear in this issue of the *Journal of Behaviorology*. I served as action editor for two of the papers; Stephen Ledoux graciously served as action editor for the third paper, which I authored. I would like to extend my thanks to Stephen for encouraging me to publish my paper and for wearing the hat of action editor while continuing to fulfill his managing editor duties for this issue of *JoB* (i.e., layout, production, and distribution).

In the first paper, entitled *The Emergence and Expansion of Behaviorology in the Companion Animal Behavior Training Field*, James O’Heare provides a historical review of the contributions of behaviorological science to the field of companion animal training. Dr. O’Heare traces this history from its origins in the 1940s, with the work of Marian and Keller Breland and Bob Bailey, through the early twenty-first century, during which the field has experienced the development of new schools and professional organizations that emphasize contingency management approaches over agentially-focused approaches.

The second article is entitled *Does Periodic Instant Messaging While Working Improve Productivity and Quality of Work?* In it Angela Lebbon discusses the results of her study that examined the effects of social networking activity in the workplace. Specifically, Dr. Lebbon’s study examined the effects of instant messaging on work-related behavior. Interestingly, the results of this study indicate that there is little difference at work between people who receive and respond to periodic instant messages versus those workers who do not receive instant messages.

In the third article, which I entitled *A Look at Pharmacotherapy for Treatment of Severe Behavior Disturbances*, I provide a brief history of the practice of pharmacotherapy. Then I discuss the benefits and pitfalls of treating behavioral problems pharmacologically, talk about pharmacologic treatment for several populations, and provide a brief overview of behaviorological treatment interventions for conditions that are commonly treated with medications. My paper concludes with a set of recommendations regarding the use of pharmacologic treatment for severe behavior disturbances.

On a different note, it has been a pleasure serving as editor for volumes 15, 16, and 17 of this journal. My tenure as editor (a) began just at the journal’s transition

to becoming a fully peer-reviewed journal (as of the first issue of volume 15) and (b) included the TIBI-specified change in name from *Behaviorology Today* to the *Journal of Behaviorology*. For the past three years, I have had the good fortune to work with several talented reviewers from our Editorial Review Board (the TIBI Board of Directors) and our Guest Reviewers: Werner Matthijs, James O’Heare, and Susan Friedman. I would like to thank each of you for your time and assistance with reviewing articles that I sent your way as editor of *JoB*; I truly appreciate your contributions to the Journal. In addition, I want to single out, Stephen Ledoux, Lawrence Fraley, and John Ferreira for special thanks. The guidance, support, and encouragement that each of these individuals provided me is inestimable.

With that being said, it is now time for me to bow out as editor, and introduce James O’Heare as the new editor for volumes 18, 19, and 20 of *JoB*. Dr. O’Heare brings considerable experience and talent to the table (e.g., co-founder of the *International Association of Animal Behavior Consultants*, founder of the *Association of Animal Behavior Professionals*, and author of several books on behaviorological approaches to training animals, the most recent being O’Heare, 2014). I am sure that *JoB* will thrive under Dr. O’Heare’s capable editorship. Send him your letters to the editor, book reviews, and of course more articles that address issues relevant to the principles and practices of the discipline of behaviorology (see the Submission Guidelines on page 26).

Finally, I would like to remind everyone that the TIBI 28th Behaviorology Anniversary Convention has been scheduled for 5–7 June 2015 in Vancouver, BC. If you have suggestions, proposals, or questions regarding possible papers, posters, panel discussions, and so on, contact members Bruce Hamm or Katie Rinald, the Program and Site Coordinators, at Coast Behavior Analysts, 1019 Cambie Street, Vancouver BC V6B 5L7 (e-mail: katie@coastaba.ca or brucehamm@me.com). More information about the convention will appear on our website and in the next issue.☺

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The Emergence and Expansion of Behaviorology in the Companion Animal Behavior Technology Field

James O’Heare*

Abstract: Due to the value of behaviorology as the appropriate natural science that informs the field of companion animal training, a historical review of the most prominent contributions of behaviorological science to the field is in order. Long before being called behaviorology, the natural science of behavior began making its impact on companion animal training almost as early as it began making an impact in human behavior. In the early to mid 1940s, Marian and Keller Breland, and later Bob Bailey, were applying B. F. Skinner’s new natural science of behavior to nonhumans. After a slow start, the 1980s saw an explosion of popularity in applying the operant conditioning approach, enhancing added reinforcement, for training companion animals, an application pioneered by Karen Pryor and Ian Dunbar. The 1990s saw another revitalization with the work of Jean Donaldson. At the start of the twenty-first century, new professional associations and schools were forming, and these supported a less agential approach with less ethology and pathology, and more contingency management. Around this time, popularity in behavior science began to grow with contributions from Susan Friedman and Mary Burch. Currently, one school and one professional association are completely behaviorological in focus.✻

This paper provides a brief history of the most prominent contributions to the emergence and expansion of behaviorology into the field of companion animal training, along with the proliferation of added reinforcement-based methods. The coverage is restricted to *companion* animal training rather than the training of working, hunting, or service animals, or animal training for the commercial, entertainment, or manufacturing industries.

Foundations

In the early 1940s, B. F. Skinner explicated the radical behaviorist philosophy of science and the basic science and technology that it informed. At that time, dog training was mainly punitive and geared toward working dogs rather than companion animals. Edward Thorndike was developing a behaviorism focused solely on consequence-maintained behavior, and Ivan Pavlov was developing a respondent model of behavior (Moore, 2008). Skinner’s radical behaviorism, in contrast, recognized both forms of behavior and conditioning. The natural science community now refers to the independent natural science of behavior-controlling relations, and the radical behaviorist philosophy of science on which it is based, as behaviorology (see Ledoux, 2012a, 2012b.)

In the mid 1940s, Skinner, Marian Breland, and Keller Breland applied these newly elucidated principles of what was then called “operant psychology” to train pigeons for potential war missions in World War II (e.g., see Bailey, 2013; Skinner, 1960/1999). This was a time period during which the early natural scientists of behavior still shared their academic homes with psychologists. In 1943 Marion Breland began training animals for commercials and animal shows. By 1947 the Brelands’ company, *Animal Behavior Enterprises*, published a paper (1951) that elaborated on the application of operant conditioning principles to nonhuman animals. Perhaps the Brelands are best known for their 1961 publication of a paper entitled “The misbehavior of organisms,” in which they emphasized the importance of species-typical behavior patterns and tendencies, and the intrusion of phylogeny into ontogeny.

The Brelands began working with Bob Bailey, a zoologist from the University of California at Los Angeles and the Navy’s Director of Training, on a project called *Dolphins at Sea*. After Keller Breland’s death in 1965, Marion Breland and Bob Bailey maintained Animal Behavior Enterprises, and in 1976, they were married (Burch & Bailey, 1999). They retired *Animal Behavior Enterprises* in 1990. In 1995 the Bailey’s began providing training classes in operant conditioning with chickens

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that has generally been referred to as “chicken camp.” Marion Breland Bailey died in 2001, and Bob Bailey continues to provide the chicken camps (Bailey, 2013).

Contemporary Animal Trainers and the “Positive” Reinforcement Movement

In 1981 Ian Dunbar, a veterinarian and pioneer in added reinforcement-based dog training, opened *Sirius Puppy Training* in Berkeley, California, the first dog training classes designed specifically for puppies, and utilizing prompts and added reinforcement consequences rather than coercion (Dunbar, 1996). In a sense, Dunbar’s 1981 book, *How to Teach a New Dog Old Tricks*, began a trend toward more added reinforcement-based methods. (Previously called “positive” reinforcement, the switch to the less confusing “added” reinforcement first appeared in print in 1997; see Ledoux, 1997; also see Ledoux, 2014, pp. 147–160.)

That trend grew in popularity, particularly with other pioneering trainers such as Karen Pryor, whose 1984 book *Don’t Shoot the Dog*, paved the way for Jean Donaldson’s 1996 book, *The Culture Clash*, which caused an explosion of popularity in their added reinforcement-based training methods. Earlier, when Dunbar’s 1981 book appeared, general audiences still saw the principles of behavior as derived from the “learning theory” of psychology; however, even by the time of Pryor’s 1984 book, these principles of behavior were increasingly acknowledged as deriving from the natural science of behavior, at that time typically called behavior analysis. The fact that this natural science of behavior was not appropriately called part of psychology remained unclear until the end of the 1980s (see Fraley & Ledoux, 2002, for a detailed discussion of this transition).

Karen Pryor’s 1984 book enhanced the trend toward added reinforcement-based training, and led to a popular and still growing movement commonly known as *clicker training*. Cast in the vernacular, this training makes a minimum of technical details accessible for successful applications to companion animal training, especially for companion animal guardians. However, this success comes at the price of allowing the agentialism inherent in the vernacular to go unchallenged. Such a price undermines the scientific analysis upon which the success is based. To avoid this the companion animal training field needs better education about the underlying natural science in practitioner training. This trend is happening, as we will see.

The roots of *clicker training* can be found at least as early as the 1950s. For example, in 1951 Skinner published the article, “How to teach animals,” in *Scientific American* (Skinner, 1951/1999) which explicitly refers to a “cricket,”

which was the name of the toy clickers of the time. Currently many *clicker training* manuals are available (for starters, see Pryor, 1999, 2001).

Publication of *How Dogs Learn* by Mary Burch and Jon Bailey in 1999 was another milestone since this was the most behavioral publication to date. While the authors had for some time already shed the “learning theory” of psychology, this book still introduced the principles and practices that it covered as thoroughly deriving from the then current discipline of behavior analysis. This was far more systematic and clear than the older melding of “operant psychology” with dog training folk wisdom. It demonstrated that there could be a science of behavior rather than simply a folk wisdom approach to training.

Murray Sidman’s book *Coercion and its Fallout* (2001) was also an important influence at this time on the added reinforcement movement. This book carefully detailed the dangers inherent in aversive control across all levels of interaction throughout society. These levels cover from companion animal behavior, through interpersonal relations, child rearing, education, business and industrial and organizational relations, and so on, to the behavior of international relations. The point for us is the risks of escape, avoidance, and countercoercion that occur when coercion and punishment are part of animal training.

In 1999 Eddie Fernandez founded the University of North Texas *Organization for Reinforcement Contingencies with Animals* (ORCA) which was focused on zoo animals, but its online forum called *Animal Reinforcement Forum* (ARF) was popular among dog trainers, and contributed to a more behavior-analytic perspective on animal training at the time.

Academic Programs of Study Involving Principles of Operant Conditioning

In the mid 1990s, Jean Donaldson opened the *Academy of Dog Trainers* through the San Francisco SPCA. This was a six-week intensive dog trainer development course using added reinforcement-based methods. The Academy of Dog Trainers is now separate from the SPCA and provides a much more in-depth program of study (see www.academyfordogtrainers.com)

In 1999 the author opened the *Companion Animal Sciences Institute* (CASI; see www.CASInstitute.com). This two-year intensive distance study program involves training in academic and hands-on animal training repertoires focusing on added reinforcement-based methods. The program gradually shifted to a more behavior analytic, and eventually a behaviorological, orientation. Since then, numerous schools have opened their doors to promote added reinforcement methods in animal training, including *The Karen Pryor Academy*

(see www.karenpryoracademy.com), Pat Miller's *Peaceable Paws* (see www.peaceablepaws.com) and, most notably, Susan G. Friedman's *Behavior Works* (see www.behaviorworks.org).

Professor Friedman is among a number of other behaviorally oriented professionals that have begun to participate in the field. As a professor teaching out of Utah State University, Logan, she began teaching a behavior analytic telecourse (i.e., online and offline as well as teleconferencing) called *Living and Learning with Parrots* in 2001 and, in 2007, she began providing a course called *Living and Learning with Animals* for a professional audience, through her company *Behavior Works* (Friedman, personal communication, 10 October 2013).

Even earlier, Stephen F. Ledoux, a professor of behaviorology, began in 1998 teaching a dozen basic natural science and application courses in behaviorology explicitly, including a course in non-coercive companion animal behavior training, at the State University of New York at Canton as well as through The International Behaviorology Institute (TIBI, at www.behaviorology.org).

Professional Associations and Certifying Bodies

In 1993 Ian Dunbar founded the first professional association for dog trainers—the *Association of Pet Dog Trainers*, which later underwent a name change to the *Association of Professional Dog Trainers* (APDT; see www.apdt.com). The APDT functions solely as a professional association and does not certify members.

In 2001 the *Certification Council for Professional Dog Trainers* (CCPDT; see www.ccpdt.org) began providing certification based partly on invigilated exams. The CCPDT has recently expanded to certifying behavior consultants as well as trainers.

In 2004 Lynn Hoover and the author co-founded the *International Association of Animal Behavior Consultants* (IAABC; see www.iaabc.org) to expand professional organization effort into resolving problem behaviors, and into other species, as well as to vanguard an added reinforcement-based dedication. The IAABC provides certification in dog, cat, and parrot behavior consulting. Many consider the IAABC to be the premier professional association globally.

In 2006 the author founded the more niche *Association of Animal Behavior Professionals* (AABP; see www.AssociationofAnimalBehaviorProfessionals.com) in order to promote specifically a strong dedication to added reinforcement-based methods and the systematic application of behaviorological principles rather than the

then dominant medical model and ethology-oriented approaches. The AABP provides certification for dog trainers and dog, cat, and parrot behavior technologists.

Behaviorology Per Se

Currently, the author may be the only animal behavior technologist operating under the behaviorology label although there are behavior analysts with a strong natural science orientation working in the animal behavior field under that label. Behaviorology is distinguished from behavior analysis both by being a name (for the natural science of behavior) that lacks any historical connection to psychology, and by being a full discipline, completely separate from, and independent of, psychology organizationally as well as philosophically. However, again, just as in human focused fields, there are behavior analytic professionals, such as Susan G. Friedman, operating from a strongly natural science orientation, who could operate under the behaviorology label were contingencies to provide the requisite evocative stimuli.

As a training program for animal training professionals, CASI instructs from a behaviorology orientation, introducing the discipline to dozens of new trainers and behavior technologists each year, and Behavior Works continues to generate interest in a natural science approach to behavior under the behavior analysis label. These trainers work from the increasing number of books that are specifically behaviorological, including these current titles: *General Behaviorology: The Natural Science of Human Behavior* (Fralely, 2008), *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems*. (Ledoux, 2014), *The Science and Technology of Dog Training* (O'Heare, 2014a), *Changing Problem Behavior Second Edition* (O'Heare, 2014b), and *The Science and Technology of Animal Training* (O'Heare, 2014c). To support successful study, most of these titles have a companion book of study questions.

The use of those books introduces many more people to the discipline of behaviorology in ways that support all applied behavior fields and the dissemination of the principles derived from a natural science of behavior. On that basis, the addition of behaviorology to the companion animal behavior training field provides the foundation for a bright future in this field.✻

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Submission Guidelines

Journal of Behaviorology (previously known as *Behaviorology Today*) is the fully peer-reviewed Journal of TIBI (*The International Behaviorology Institute*) and is published in the spring and fall of each year.

To submit items, contact the Editor (Volumes 18, 19, 20):

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Considerations

The Journal entertains experimental or applied research papers and theoretical or conceptual or literature review articles (all of which will have at least three reviewers) as well as book reviews, on terms, in response, and program descriptions (two reviewers) plus letters, memorials, etc. The members of the TIBI Board of Directors constitute the basic Editorial Review Board (ERB) on which others can serve as members or guests. Authors will not be identified to reviewers and reviewers will not be identified to authors, except when they opt to sign their reviews. (Some reviewers prefer to sign, usually in acknowledgement of the additional assistance that they are prepared to offer the author.) Each reviewer will provide constructive feedback as well as a recommendation: accept, or accept with revisions, or revise and resubmit, or reject.

Based on the set of reviewer recommendations and comments, the Editor will convey the feedback and summary decision to the author(s). With assistance from members of the ERB, the Editor will also provide authors with guidance to shape the best manuscripts possible in a reasonable time frame.

All accepted pieces must contribute to the behaviorology discipline (e.g., by relating to or clarifying or expanding some part of the discipline such as the philosophical, conceptual, theoretical, experimental, applied, or interdisciplinary aspects). Accepted pieces must also be crafted in ways that convey as much consistency as possible with the principles, concepts, practices, philosophy, and terminology of the discipline.

Research paper authors (a) must obtain any necessary permissions or approvals from the Human-Subjects

Review Committee of their affiliated campus or agency, and (b) must comply with the usual ethical standards relating to all research and experimental subjects. All authors are required to disclose for publication any possible conflicts of interest. Also, congruent with past practice, exclusions of important or relevant content for length reduction will be resisted as much as possible.

Mechanics

Authors are encouraged to contact the editor to discuss their manuscript prior to submission to answer questions and clarify procedures and processes. Initially, a paper should be submitted to the editor by email as a PDF attachment.

The email will contain a cover letter. This letter should describe the article, and the work or history behind it, and will include the author name(s), affiliation(s), addresses, phone numbers, paper title, footnotes (e.g., acknowledgements, disclosures, and email or other contact information for publication) as well as comprehensive contact information on up to six suggestions for possible reviewers.

The PDF document (a) should have *only* the author’s name in the file name (which the Editor will record with the assigned manuscript number while replacing the name *with* the number in the file name before sending the manuscript PDF file out to reviewers), (b) should *use the standard style exemplified by papers in past issues* of the journal (as TIBI is unconnected with any particular, formal “style”), and (c) should be set in 12 point type on 24 point leading (i.e., double spaced) with 1.25 inch side margins and 0.75 inch top and bottom margins, excluding the title header and page-number footer (i.e., all text parts of the piece—including tables, figures, photos, etc.—fit in text blocks that are 6.0 inches wide and 9.5 inches tall, with the title header just above this block and the page-number footer just below this block). These measurements are for US letter size paper; for other paper sizes, the text block size and top margin remain the same while the other margins will change as needed. The text parts of the paper start with the title, then an abstract, and a list of “Key Words” for indexing purposes, followed by the body of the piece plus references and figures or tables. Upon acceptance, papers should be provided to the editor as a Word-format document along with a new PDF of the Word file (to verify the accuracy of content transfers during page-layout operations).

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