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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, in January 2012, all material receives full peer review. See the "Submission Guidelines" for details.

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

Editorial

Bruce Hamm

Blackbird Academy of Childhood Education—Vancouver, BC, Canada

This issue of the *Journal of Behaviorology* consists of two articles concerned with relatively recent disciplinary and educational advancements in behaviorology. The first article is Part II of Ledoux and O’Heare’s two-part sequence concerning “Elements of the Ongoing History of the Behaviorology Discipline.” (Part I was published in the last issue of this journal, which was the Spring, 2018 issue.) While Part I described significant events in the behaviorology discipline spanning the years 1990 to 2015 (i.e., evolution of the organizational, conceptual, and educational areas of the discipline), Part II delves into developments in the same period beginning with (a) the creation of the first undergraduate program in behaviorology (offered at SUNY–Canton) and (b) advancements in the behaviorological contribution to companion animal training and curricula. The article continues with briefer examinations of topics such as certification and licensing, higher education curricula, and noteworthy print and non-print resources. The latter include both Ledoux’s 2012 monumental (if I may be so bold) “Behaviorism at 100” article—published in *American Scientist* with the longer peer-reviewed version published in this journal just months later—as well as the Prosocial Progress Foundation’s intermittently interesting documentary *Prosocial Progress: A Blueprint for Social Sustainability* (available free of charge on vimeo.com at: <http://vimeo.com/80155313>). Also, the PNET (Progressive Neural

Emotional Therapy) section of Ledoux and O’Heare’s article provides an instructive summary of progress in this compelling engineering area of our science.

The second article offers a step-by-step guide for planning and sequencing behaviorology courses into programs in post-secondary institutions, from A.A. (Associate of Arts) degrees to Ph.D. degrees, as well as several suggested methods for more easily meeting the needs of college administrators in these endeavors. Each course prescribed is outlined and additional resources are suggested. Based on the author’s actual 25 years of course and curriculum development experience, this paper serves as a valuable resource to behaviorologists poised to advance the science in higher education. Given the direct interconnections between this paper and the other paper in this issue, keeping them together was an easy way to enhance the benefits they can provide to readers.

As always, we suggest that readers consider their current activities and recognize the value to other readers of writing up a report and sending it in; our easy to follow journal “Submission Guidelines” are on page 31 in this issue. We always welcome manuscripts for possible publication, and our Editorial Board members are willing to provide as much manuscript development assistance as an author desires. We all have important things to say. Please do not hesitate to submit any completed or in-process manuscripts or contact me with questions about the publication process: brucehamm@me.com. ☺

Elements of the Ongoing History of the Behaviorology Discipline Part II

Stephen F. Ledoux*

State University of New York (SUNY)–Canton (emeritus)

James O’Heare*

Companion Animal Science Institute (CASI) Ottawa Canada

Abstract: Part I of this paper (i.e., Ledoux & O’Heare, 2018) began by describing the evolution of some organizations in the behaviorology discipline that occurred after the time frame covered in the historical document by Fraley and Ledoux (1992, i.e., after 1990). Then it discussed some conceptual and educational advances and opportunities occurring in that same time frame. Part II (a) completes the discussion of the BA–equivalent curricular component at SUNY–Canton, the first attempt at a functioning university educational program *with explicit behaviorology courses*, (b) reviews some behaviorological advances in the educational curricula for training companion animals, (c) lists some examples of behaviorological books and articles appearing since 1990, and (d) describes some further developments occurring also in this time frame. While each of the two Parts of this paper includes the references to works that each has cited, only Part II includes the Endnotes for both Parts.

SUNY–Canton’s behaviorology courses as part of a BA–equivalent curricular component. That variety of events (those reported at the end of Part I, in the section on “*Examples of the Expansion of Educational Opportunities*”; see Ledoux & O’Heare, 2018) seemed supportive of further curricular efforts. Hence Ledoux began developing additional behaviorology course proposals. As with the topics for some of the earlier approved courses, to improve the chances of success, some of the second seven courses also reflected one or another major, meaningful behaviorology application area. Most were also potentially useful not only to the college’s initial four–year Bachelor of Technology (BT) degrees but also to some future BT in “Behavior Technology” or in “(Green) Contingency Engineering.”

Instead, the first program option to occur was a Bachelor of Science degree in Human Services, which Ledoux helped design. In the approved program, after a 30–credit core (comprised mostly of ten entry level behaviorology, human service, psychology, and sociology courses) students could opt for “Track A” or “Track B” (see SUNY–Canton’s 2014–2015 Academic Catalog for details). Track A consisted of another 30 credits of additional human services, psychology, and sociology courses, all of which were explicit requirements. Track B consisted of another 30 credits of additional *behaviorology* courses, seven of which were explicit requirements while the student could select the remaining three from among a range of behaviorology elective courses.

*Address correspondence regarding this article to ledoux@canton.edu or jamesoheare@gmail.com

Note: Splitting this paper into two parts resulted in the references sometimes seeming out of order, because their citations were kept unchanged from the original paper. The two parts originally appeared as one in the *Third Edition of Origins and Components of Behaviorology* (see Ledoux & O’Heare, 2015) where this paper’s pages were previously occupied by David Feeney’s paper about on–line, real–time behaviorology applications. Feeney’s paper is still available; you can find it in the “first ten–years archive” at http://www.behaviorology.org/oldsite/origins_book_complete.htm on the www.behaviorology.org website as a PDF link with the label “On–line Therapy paper,” or see Feeney, 2002.

Key words: history, behaviorology, education, natural–science curricula

Before granting approval for this program, SUNY-Central required proposed programs from several SUNY units—including this one—to go by the label, “Applied Psychology.” This label grossly misrepresented this program. To graduate *from the program* under Track A, seven of the 20 courses that a student had to take were psychology courses. However, to graduate *from the program* under Track B, 12 of the 20 courses that a student had to take were behaviorology courses, and behaviorology is not any part of, nor any kind of, psychology. So, should the program label be “Applied behaviorology?” Certainly not, because the focus of the program was human services.

The behaviorology courses comprising the Track B graduation requirements include the early seven behaviorology courses [described in Part I of this paper] along with seven additional behaviorology courses, some of which arose from the needs of this curriculum. Here are brief descriptions of the second seven courses, using the BEHG designator:

❧ BEHG 310: *Companion Animal Behavior Training* (equivalent to TIBI’s BEHG 120: Non-Coercive Companion Animal Behavior Training [in 2016, updated to BEHG 330: Companion Animal Training; see *Journal of Behaviorology*, Volume 19, Number 2, for the 13 updated TIBI courses]). *Description*: This course applies behaviorology to companion animal behavior training. Topics include (a) the successful, non-coercive animal training practices, derived from basic principles, that are used by professional animal trainers around the world, and (b) how to teach the guardians of companion animals how to train their cats, dogs, birds, or horses. Generic application to training yet other species also receives attention.

❧ BEHG 380: *Introduction to Verbal Behavior Analysis and Applications* (equivalent to TIBI’s BEHG 355: Verbal Behavior I [in 2016, updated to BEHG 340: Introduction to Verbal Behavior]). *Description*: This course introduces students to the behaviorological analysis of language as verbal behavior, the historical context in which this analysis arose, and some applications of verbal behavior analysis especially with respect to enhancing the conditioning of verbal behavior for multi-language students or persons with developmental disabilities. Covered topics include such fundamental concepts as (a) differentiating verbal and non-verbal behavior, (b) the verbal community, (c) mediated reinforcement, (d) the basic verbal behavior relations called mands, tacts, intraverbals, codics, and duplcs (and the subtypes of these last two), (e) various extensions of these elementary verbal operants, (f) the most common variables of which verbal operants are a function, (g) some of the ways these variables combine in the multiple control of complex verbal behaviors, (h) response products, (i) point-to-point correspondence,

(j) formal similarity, (k) thematic and formal controls over verbal behavior, and (l) the ways the verbal community conditions verbal responding under the control of covert stimuli. The course includes reviews of B. F. Skinner’s 1957 classic book, *Verbal Behavior* [but uses Peterson & Ledoux, 2014; see Ledoux, 2015h].

❧ BEHG 385: *Advanced Behaviorology I* (equivalent to TIBI’s BEHG 365 under the same title [in 2016, updated to BEHG 512 under the same title]). *Description*: This first course of a two-course sequence covers in detail the variables of which the behavior of humans and other animals is a function, as discovered from the natural-science perspective and with the emphasis on increasingly complex human behavior. Included is not only a range of pertinent and accessible environment-behavior functional relations, but also the naturalistic philosophical foundations of the behaviorology discipline (the natural science and technology of environment-behavior relations) as well as the research methodology involved in discovering the independent variables in these relations and engineering them into sophisticated applications and interventions beneficial to humanity. Course topics also include (a) classifying behavior, (b) avoiding explanatory fictions and analytical fallacies, (c) experimentally manipulating independent variables of behavior, (d) measuring, recording, graphing, and interpreting behavior-related data, and (e) turning the experimentation-based prediction and control of behavior into beneficial engineering practices emphasizing antecedent and postcedent processes.

❧ BEHG 485: *Advanced Behaviorology II* (equivalent to TIBI’s BEHG 470 under the same title [in 2016, updated to BEHG 513 under the same title]). *Description*: This second course of a two-course sequence covers in detail *more of* the variables of which the behavior of humans and other animals is a function, with the emphasis on increasingly complex human behavior. Course topics include (a) stimulus equivalences relations, (b) reinforcement schedules plus adjunctive behavior, (c) aversive controls plus more effective alternatives, (d) applied behavior research plus behavioral objectives, (e) gradual change in both stimuli and responses, (f) some complex cases including values, rights, ethics, and morals, (g) verbal behavior and consciousness, (h) personhood and culture, (i) reality, and (j) intellectual evolution (biological and cultural).

❧ BEHG 415: *Behaviorological Thanatology and Dignified Dying* (equivalent to TIBI’s BEHG 410 under the same title [in 2016, updated to BEHG 455 under the same title]). *Description*: After reviewing the role that punishment and coercion play in prompting violence of all types throughout society (i.e., Sidman, 2001) this course focuses on replacing some subtle, residual violence, visited on society members suffering terminal illness, with scientifically informed practices that allow

retention of human dignity for all parties in these circumstances, but especially for the dying individual, during the social death, person death, and body death of the terminal-illness process. Which professional group (e.g., medical doctors or nurses, hospice personnel, funeral directors, or behaviorologists) might best organize these improvements and new practices is explored, along with some problematic medical ethics. The historical context, and social contingencies affecting new practices, are included in the consideration of how to move from old to new practices.

❖ BEHG 400: *Seminar in Applied Behavior Analysis* (no TIBI equivalent course). *Description:* This course considers the applications of behaviorological principles, techniques, and interventions occurring at the locations of the students' practicums, and includes the measurement and classification of the behaviors of concern at these locations, while providing training in two major repertoires that are needed for effectiveness in the work of contingency engineering: (a) training *about* the techniques, stemming from the laws of behavior, that are used to manage contingencies that solve behavior problems in applied settings, and (b) training *in the actual use*, or application, of these techniques as reported in the research literature and as experienced and practiced on the practicum site.

❖ BEHG 401: *Practicum in Applied Behavior Analysis* (no TIBI equivalent course). *Description:* In this course, which the student takes concurrently with BEHG 400, the student engages in 100–120 hours of supervised [by BCBAS] practicum, applying the relevant behaviorological disciplinary principles and practices, from the disciplinary applied research literature containing relevant interventions, to interventions with clients in the practicum setting.

All those behaviorology courses used textual resources (available in the *Addendum* to Appendix 3, in Ledoux, 2015f) that behaviorology course professors (all behaviorologists, all of whom have been, or are, members of TIBI) selected for use. The courses' subject matter is behaviorology, a subject matter that is the natural science of behavior (or, more explicitly, the natural science of environment–behavior relations) and not any kind of, nor any part of, psychology. These courses concern foundations and applications arising not only from local interests, and the actual contingencies at a particular institution, but also from the availability of behaviorology textbooks and related materials authored by behaviorologists.

Before retiring from SUNY–Canton in 2015 (and moving on to engage in other behaviorology and curriculum development efforts, with a different paycheck source) Ledoux oversaw this behaviorology program track, at this accredited college campus. This track resulted, in the first few years of the program, in

nearly two dozen students earning the *equivalent* of a strong, 12–course, 36–credit Bachelor of Arts (BA) degree in behaviorology as part of a 60–credit Bachelor of Science degree in an applied human services curriculum.

The behaviorology faculty (Ledoux and the three practicing behaviorologist adjuncts) were developing improvements to move the behaviorology program track forward along lines that served students, the discipline, and the local employers who hired the behaviorology graduates to provide services for local special-needs populations of autistic and developmentally disabled adults and children. These adjustments stalled, because—predictably, from reports elsewhere in Ledoux, 2015f, (e.g., see Fraley & Ledoux, 2015)—the several full-time psychology faculty in the subset of the department who were responsible for the curriculum simply voted down the single full-time behaviorology professor to get whatever they wanted in contradiction to what was demonstrably better for, and in many cases preferred by, the students and the local employers, who speak for the local special-needs populations who, of course, cannot speak for themselves. For example, they voted the behaviorology faculty line to go, not to hire a behaviorologist to continue teaching these courses and developing the program, but to hire a psychologist who, as a psychologist, would not be qualified to teach any of the 14 behaviorology courses on the books. Professionals from or in psychology, to the extent that their educational or professional conditioning continues to produce intellectual, academic, or teaching responses supportive of the fundamental secularly mystical agentialism at the required core of the traditional psychology discipline, are not competent, not qualified, not credentialable to teach behaviorology; their teaching of behaviorology courses is equivalent to astrologers teaching astronomy courses, creationists teaching biology courses, and so on. Consequently, the need arose to protect the behaviorology discipline from such ravages by moving, at the departmental level, to take the behaviorology courses off the campus books. Should circumstances change, and a couple of behaviorologists get hired, they can easily restore the courses and make appropriate improvements. (Many of the curricular improvements that the behaviorology faculty recommended, as of spring 2015, after 25 years of behaviorology curriculum development experience at SUNY–Canton, appear in the *Addendum* to Appendix 3, in Ledoux, 2015f.)

One final behaviorology curriculum development factor deserves mention, one which Ledoux could *not* use to enhance success. This factor involved being able to say that so-and-so college already offers explicitly *Behaviorology* courses and programs (approved as such). For awhile, and perhaps again soon, behaviorologists at other campuses *could*, and *can*, say that!

James O’Heare and CASI courses and curricula.

Additional developments resulted in the expansion of other, non–university, educational opportunities for studying behaviorology and its applications. As illustrated by the experiences of the second author, these occurred in an applied field that involved human contingencies focused on non–human behavior. Here is the story behind these developments.

James O’Heare studied psychology through the mid 1990s and early 2000s as it was the only higher education, behavior–related program of study both culturally familiar and available. However, while he worked through programs, the inadequacy of practices connected to and extended from psychological theories, due to the mystical nature of the discipline, left him dissatisfied. This contingency compelled him to quit dealing with psychology, and he renounced his psychology education as hopelessly irrelevant in explaining and controlling behavior. This contingency also led to his finding behavior analysis, which he studied as professional development, because no formal educational opportunities existed where he lived and worked. Well into that process, he encountered behaviorology and TIBI. O’Heare then began working through the TIBI courses at the undergraduate level, without an instructor, including most of the courses required for the Behavior Literacy Certificate (BLC), the Associate of Behaviorology Certificate (ABC), the Professional Studies in Behaviorology Certificate (PSBC), and the Baccalaureate Level Behaviorology Certificate (BLBC) as listed on the TIBI website (www.behaviorology.org). He then contacted TIBI about enrolling formally in coursework at the graduate level (as again, no university programs of study in behaviorology were available where O’Heare resided and worked). After in–person interviewing, testing, and review of previous experience and previous study products, O’Heare was assigned a TIBI faculty mentor and, over some years, satisfied requirements first for the Masters Level Behaviorology Certificate (MLBC) and then for the Doctoral Level Behaviorology Certificate (DLBC). O’Heare’s situation is somewhat unique in that his education is in behaviorology itself, through TIBI, rather than being secondary to other credentials. O’Heare was attracted to the defining features of behaviorology over behavior analysis both in that behaviorology was a full discipline rather than just a branch of another (incommensurable) discipline and that it was completely independent of psychology.

Throughout this time frame, O’Heare had been working as an animal trainer and behavior consultant, helping clients engineer contingencies to resolve problematic behaviors that other contingencies were inducing their companion animals to exhibit. He worked with clients and many different species of companion animals, first under the common medical–model

approach, then under the behavior analysis label, and eventually as a behaviorologist. After publishing, in the late 1990s, his first of several books, entitled *The Canine Separation Anxiety Workbook*, O’Heare began instructing on–line courses for professional animal trainers and behavior consultants, again, through this time frame, under the label of behavior analysis and eventually, upon completing formal education in the discipline, under the behaviorology label.

The Companion Animal Sciences Institute (CASI), which O’Heare founded, now provides a completely behaviorological set of courses and programs of study at the technologist level (i.e., basic professional proficiency, not full professional behaviorologist level). The courses have been approved for consideration toward certification and as continuing education units toward recertification educational requirements by the industry’s leading professional associations and certifying bodies. O’Heare also founded the Association of Animal Behavior Professionals (AABP). This professional association for behaviorologically oriented animal–behavior technologists provides certification and other benefits such as the only peer–reviewed journal for animal–behavior technologists, the *Journal of Animal Behavior Technology* (JABT). These expand the influence of behaviorology within this field.

O’Heare sees the expansion of behaviorology, as the primary informing basic natural science of behavior, as a priority. He presented a paper at the TIBI twenty–seventh Behaviorology Anniversary Conference in 2014 on the history of behaviorology within the companion animal behavior field, and published a short version of that paper in the following issue of the *Journal of Behaviorology* (O’Heare, 2014a). In a later article, O’Heare (2016) explicitly argues for more wide–spread adoption of behaviorology as the informing natural science of behavior in the companion animal behavior field, rather than psychology, ethology, or even behavior analysis.

Applied field appreciation and example. In a wide range of applied fields, contingencies continue to arise that compel practitioners in these fields to recognize and adopt behaviorology as the foundation natural science discipline informing their field. Again, taking advantage of the coincidences of history, an example of the growth of behaviorology in an applied field, an example that goes beyond the usual, expected, solely people–oriented examples, concerns the gradually increasing appreciation of behaviorology, since at least the middle of the twentieth century, in the companion animal behavior training field. In his short article on this development, O’Heare (2014a) discussed the history of the natural science of behavior application within this field as well as the trend toward non–coercive methods and the development and

expansion of professional organizations and educational opportunities within the field.

That history began in the mid 1940s (see O’Heare, 2014a, for details and full references). Skinner, Marian Breland, and Keller Breland applied these newly elucidated principles of what was then called “operant psychology” to train pigeons for missions in World War II. In 1943, Marion Breland began training animals for commercials and animal shows. By 1947, the Brelands’ company, *Animal Behavior Enterprises*, published a paper that elaborated on the application of operant conditioning principles to nonhuman animals. 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 married. In 1995, the Baileys began providing training classes in operant conditioning with chickens (their famous “chicken camp”).

The roots of *clicker training* (a term often used to refer not just to the use of a conditioned added reinforcer, but to the application of principles of operant conditioning as a whole) 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*, which explicitly refers to a “cricket,” which was the name of the toy clickers of the time.

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. 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. 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. Murray Sidman’s book *Coercion and its Fallout—Revised Edition* (2001) was also an important influence at this time on the added reinforcement movement.

Other opportunities developed over the years. In the mid 1990s, Jean Donaldson opened the *Academy of Dog Trainers* through the San Francisco SPCA. 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, *Animal Reinforcement Forum* (ARF) was popular among dog trainers, and contributed to a more behaviorological perspective on animal training at the time. Also in 1999 O’Heare 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 from a completely behaviorological perspective. Since then, numerous schools have opened their doors to promote added reinforcement–based 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). Friedman is among a number of other behaviorally oriented professionals that have begun to participate in the field. As of this writing, CASI is the only school operating in this field under the behaviorology label. Behavior Works operates under the behavior analysis label.

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 Association of Professional Dog Trainers (APDT; see www.apdt.com). The APDT functions solely as a professional association and does not certify members. The APDT is eclectic in terms of orientation. In 2001, the Certification Council for Professional Dog Trainers (CCPDT; see www.ccpdt.org) began providing certification based partly on invigilated exams. The CCPDT, which recently expanded to certifying behavior consultants as well as trainers, is also eclectic in terms of orientation. In 2004, Lynn Hoover and O’Heare co–founded the *International Association of Animal Behavior Consultants* (IAABC; see www.iaabc.org) to expand professional organization efforts into resolving problem behaviors, and into other species, as well as to vanguard an added reinforcement–based dedication. The IAABC is also eclectic in terms of orientation. In 2006, O’Heare 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 eclectic ethology–oriented approaches. The AABP provides certification for dog trainers and dog, cat, and parrot behavior technologists.

O’Heare became the first recognized behaviorologist (although not the first natural scientist of behavior) working with companion animals and their guardians as well as with fellow companion–animal professionals. On the basis of his increasing behaviorological competence, and his experience instructing multitudes of professional animal trainers and animal behavior technologists over the last couple of decades in the principles of behaviorology, he has published many books geared

toward professionals (e.g., O’Heare, 2014b, 2015a). This expansion of behaviorology into a nonhuman training field may assist the development, in this field, of formal regulation by licensure, as well as reduce the impact of scientifically uninformed competition from some traditionally dominant orientations, educational institutions, and professional associations. This increased attention to behaviorology may induce mutually beneficial activity such as increased TIBI membership and the development of a greater number of behaviorologists. As an example, due to the demand for more information about the basic science behind the effective companion animal behavior training practices that O’Heare’s books have generated, the Association of Professional Dog Trainers (APDT) invited Ledoux to present the keynote address, and several basic behaviorology seminars, at its annual convention in October 2015.

Educational opportunities summary

In every institution of higher education, factors already exist that affect the likelihood of success for efforts to develop dissemination opportunities for behaviorology and its applications across human concerns and even the concerns of members of other species. The only guarantee of failure is not to try. This section identified and addressed some supporting events which, when added to the local mix, could tip the balance in favor of further success. As readers include such factors in their dissemination efforts, successes should continue to accrue.

Related Developments Through Spring 2015

Breakthroughs supporting the development of the natural science of behavior as behaviorology also occurred in several other areas including certification, licensing, and publications. Here are some details.

Certification and Licensing Breakthroughs

On the national scene, separate Certification of professional practitioners of the natural science of behavior has been available for decades, although under the earlier label, behavior analysis (that is now confusingly, and inappropriately, claimed by psychologists to be a part of their discipline; see Fraley & Ledoux, 2015; Ledoux, 2014a). The certifying authority is the Behavior Analyst Certification Board (BACB) and it now provides separate certification of practitioners at the B.A., M.A., and Ph.D. levels.

More recently, and often with national certification as a prerequisite, an increasing number of individual states now license natural science of behavior practitioners, also at several levels. In most such states—New York is an example—these licensing laws exist separately

from the state’s licensing laws regarding the practice of psychology. These laws, of course, currently use the term *behavior analysis*, partly because that was the term under which efforts to pass these laws usually began, which not only was before the term *behaviorology* had come into official use, but which was also when the practices and interventions went by the label *Applied Behavior Analysis* (ABA) as is still, and appropriately, the case, as psychology has no legitimate claim on ABA. Nevertheless, the fact of separate licensing laws, for psychological practice and for behaviorological practice, recognizes that an independent discipline, separate from psychology, informs the interventions of practitioners of the natural science of behavior under any label; their practices and interventions are neither a part of, nor any kind of, psychology.

Expansion of Published Works

Progress also continues to accrue through the publication of more books and articles covering aspects of the natural science of environment–behavior relations. Here is a quite small sampling that covers a wide range of topics:

Books and textbooks. Between 1987 and 2015, a substantial list of behaviorology and natural science of behavior books continued to accumulate, at what seems like an accelerating rate. In **chronological** order of publication, a partial list of these books, mostly by behaviorology authors, and using only the latest editions, includes these (with some annotations):

❧ Engelmann: *War Against the School’s Academic Child Abuse* (1992).

❧ Latham: *The Power of Positive Parenting* (1994), a book with a set of study questions available [references for study–question books appear in a later section].

❧ Sidman: *Equivalence Relations and Behavior: A Research Story* (1994).

❧ Maurice: *Let Me Hear Your Voice* (1994), a book that provided a non–technical analysis of autism and its behavioral interventions.

❧ Maurice, Green, and Luce: *Behavioral Intervention for Young Children with Autism* (1996), a book with a set of study questions available.

❧ Watkins: *Project Follow Through: A Case Study of Contingencies Influencing Instructional Practices of the Educational Establishment* (1997), a book examining the way the education establishment has ignored Project Follow Through data, and resisted implementing the recommendations implied by the Project’s results.

❧ Wyatt: *The Millennium Man* (1997), a unique and non–technical novel that describes the significance of our natural science and its place in society, with a set of study questions available.

❧ Latham: *Keys to Classroom Management* (1998), a book with a set of study questions available.

❧ Sidman: *Coercion and Its Fallout* (2001), the revised edition of his original 1989 title, a book with a set of study questions available.

❧ Fraley: *General Behaviorology: The Natural Science of Human Behavior* (2008), a 1,600-page, three-course, graduate level text, with a set of study questions available.

❧ Fraley: *Dignified Dying—A Behaviorological Thanatology* (2012a), a book with a set of study questions available.

❧ The book that Ledoux assembled from a 1977 book: *Behaviorology Majors Make a Difference* (2013), a book of ten papers that mostly undergraduate students authored, based on their practicum work, and which contains its study questions.

❧ Fraley: *Behaviorological Rehabilitation and the Criminal Justice System* (2013), a book with a set of study questions available.

❧ O’Heare: *The Science and Technology of Dog Training* (2014b), a book with a set of study questions available.

❧ Ledoux: *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* (2014a), a book with a set of study questions available.

❧ Peterson and Ledoux: *An Introduction to Verbal Behavior—Second Edition* (2014), an updated book that Peterson had first published in 1978, a book with an included study program.

❧ O’Heare: *The Science and Technology of Animal Training* (2015a), a book with a set of study questions available.

❧ Ledoux: *Origins and Components of Behaviorology—Third Edition* (2015f), a book with a partial edition in 1992, the first edition in 1997, and the second edition in 2002 (and a book with a set of study questions available).

❧ [Plus Ledoux, 2017, 2018, and several more books by O’Heare; see BOOKS at www.behaviorology.org.]

Study question books. In addition to books like those, many behaviorology study guides (e.g., books of study questions) have become available for use with several of those books as basic textbooks. Again, in **chronological** order of publication, a partial list of these study question books, mostly by behaviorology authors, and using only the latest editions, includes these:

❧ Ledoux, Wyatt, & Bias: *Study Questions for W. Joseph Wyatt’s The Millennium Man* (1999).

❧ Ledoux: *Study Questions for Glenn Latham’s Keys to Classroom Management* (2000b).

❧ Ledoux: *Study Questions for Glenn Latham’s The Power of Positive Parenting* (2001b).

❧ Kopp: “Coercion and its Fallout” *Study Guide* (2001).

❧ Ledoux: *Study Questions for Maurice et al’s Behavioral Intervention for Young Children with Autism* (2003).

❧ Ledoux and several unrecorded authors: *Study Questions for Skinner’s Walden Two [1948]* (accumulated over the years 1976–2012); available for free reprinting [under “BOOKS” at www.behaviorology.org].

❧ O’Heare: *Study Questions for Fraley’s General Behaviorology* (2013).

❧ Ledoux: *Study Questions for Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* (2014b).

❧ O’Heare: *Study Questions for the Science and Technology of Dog Training* (2014c).

❧ Ledoux: *Study Questions for Origins and Components of Behaviorology—Third Edition* (2015g).

❧ O’Heare: *Study Questions for the Science and Technology of Animal Training* (2015b).

❧ Raymond: *Study Questions for Lawrence Fraley’s Dignified Dying—A Behaviorological Thanatology* (2015a).

❧ [Plus Raymond: *Study Questions for Lawrence Fraley’s Behaviorological Rehabilitation and the Criminal Justice System* (2015b).]

Some disciplinary articles. Some of the articles that appeared in natural science of behavior, and behaviorology, journals in the quarter century between 1987 and 2015 are particularly noteworthy, especially for the range of topics that they address. While this paper considers many of these in other sections, here is a list of a handful of others, in **chronological** order, and with their topics, if these are not obvious from the title, which enables scanning for topics of particular interest:

❧ Skinner: “The first baby tender” (1987), on correcting some misconceptions about the aircrif that have risen to the status of ridiculous urban myths.

❧ Eshleman and E. Vargas: “Promoting the behaviorological analysis of verbal behavior” (1988).

❧ Provided by Ledoux but actually an interview by McKeown: “August 1988 public radio interview of the organizers of the first behaviorology convention” (Ledoux, 1988/2013).

❧ J. Vargas: “Cognitive analysis of language and verbal behavior: Two separate fields” (1990).

❧ Cheney: “The source and control of behavior” (1991).

❧ Ulman: “The Ulman–Skinner letters” (1993), the exchange of letters that led to Skinner’s (1993) declaration of independence from psychology.

❧ Fraley: “Uncertainty about determinism: A critical review of challenges to the determinism of modern science” (1994).

❧ Baum: “Radical behaviorism and the concept of agency” (1995).

❧ Glenn and Madden: “Units of interaction, evolution, and replication: Organic and behavioral parallels” (1995).

❧ Fraley: “Verbal behavior in the measuring process” (1996).

✂ Fraley: “An academic home for a natural science” (1997).

✂ Fraley: “Pursuing and interpreting the implications of a natural philosophy and science with the values associated with other disciplines” (1998b).

✂ Fraley: “Adverse implications for university teaching concealed in economically driven policies” (1998d).

✂ Ulman: “Toward a more complete science of human behavior: Behaviorology plus institutional economics” (1998).

✂ Fraley: “Foundations for a natural science of philosophy” (1999).

✂ Fraley: “The strategic misdefining of the natural sciences within universities” (2000c).

✂ Fraley: “The discipline of behaviorology and the postulate of determinism” (2001b).

✂ Eshleman: “If telling were teaching” (2002), about the implications of behaviorology for instructional systems.

✂ Ledoux: “The future and behaviorology” (2004), a paper first presented at a conference in Iceland in honor of the 100th anniversary of B. F. Skinner’s birth on 20 March 1904.

✂ Thompson: “Climate change: The evidence and our options” (2010).

✂ Ferreira: “Progressive Neural Emotional Therapy (PNET): A behaviorological analysis” (2012).

✂ Fraley: “The evolution of a discipline and our next step” (2012b).

✂ Ledoux: “Behaviorism at 100 unabridged” (2012a, b), discussed in the next section.

✂ Johnson: “A behaviorological approach to management of neuroleptic-induced tardive dyskinesia: Progressive Neural Emotional Therapy (PNET)” (2012).

✂ E. Vargas: “The importance of form in Skinner’s analysis of verbal behavior and a further step” (2013).

✂ Ledoux: “Human multiple operant research equipment” (2013), about some twenty-first century equipment that behaviorological experimenters could use in continuing the research program described in Chapter 6 of Ledoux, 2014a.

✂ Ledoux, D. Hallatt, and T. Hallatt: “An interview on behaviorology supporting a sustainable society” (2014).

✂ Fraley: “Behaviorological science and the complexity of unfathomable variation” (2014).

✂ Johnson: “A look at pharmacotherapy for treatment of severe behavior disturbances” (2014).

✂ Ledoux: “Appendix 3 Addendum: Curricular Courses and Resources after 25 years (1990–2015)” (2015h).

The authors of this paper would have liked to summarize, in this paper, all of those articles for the contributions of each one to this disciplinary history; of course, the result would have turned this paper into a

book or two. For a book that approximates that kind of topical coverage, see Ledoux, 2014a.

Conclusions to be Drawn Thus Far

So far, this report emphasized developments in professional organizations, conceptual advances, educational opportunities, certification and licensing, and publications, all based on the independent natural-science status of behaviorology. These developments provide supportive parameters bearing on the question of concrete disciplinary directions, particularly the direction involving further efforts to establish behaviorology curricula, departments, and research programs at all levels of higher education institutions.

Progress in Other Areas

Progress has also occurred in several other areas. These include (a) a centenary article for behaviorism, (b) other behaviorological curricula, (c) the continuing saga of the behavior analysis label, (d) Progressive Neural Emotional Therapy and pharmacotherapy concerns, (e) the availability of media products related to the discipline, and (f) developments among European natural scientists of behavior.

A centenary article for behaviorism. The message that the natural science of behavior, with its philosophy of science of *Radical Behaviorism*, has existed for over 100 years reached a large professional audience in 2012. B. F. Skinner had published his article, “Behaviorism at fifty,” in 1963. As 2012 approached, which was behaviorism’s one-hundredth year, the need arose for a report to the contemporary professional audience of natural scientists and engineers regarding the developments during behaviorism’s second 50 years. So Ledoux wrote his article, “Behaviorism at 100,” which the journal, *American Scientist* (one of the largest distribution, natural science journals in the country, and also celebrating its one-hundredth year in 2012) published in the first issue of its one-hundredth volume (Ledoux, 2012a; additional details appear in the longer, peer-reviewed version, “Behaviorism at 100 unabridged” in Ledoux, 2012b, and in Chapter 1 of Ledoux, 2014a).

Sharing the most salient point with his readers, the long-time *American Scientist* Editor, David Schoonmaker, placed this statement before the article began: “Over its second 50 years, the study of behavior evolved to become a discipline, independent of psychology” (*American Scientist*, 100 [1], p. 60). The Editor also introduced this article with excerpts, on pages 54–59, from an older article, one which he listed as an “*American Scientist* Centennial Classic 1957.” The excerpts came from Skinner’s 1957 *American Scientist* article, “The experimental analysis of behavior.” (Skinner’s complete 1957 paper was also available online along with Ledoux’s paper.) A few

months later, the peer-reviewed version of the paper included the philosophical material that the Editor had accepted but set aside at the last moment to make more room for the Skinner article excerpts. (*American Scientist* posted the unabridged version of Ledoux's paper online along with the original version.)

Other behaviorological curricula. The actual numbers and locations of courses and curricula covering behaviorological content are difficult to track. In addition to SUNY-Canton and TIBI offerings, numerous programs exist, particularly programs preparing students, often at the M.A. level but occasionally also at the Ph.D. level, for certification or licensure as natural science of behavior professionals arranging contingency interventions in applied areas (e.g., special needs populations). Confusingly—to the general public as well as their own students—most of these programs remain housed in units of another discipline with requirements that these students master some coursework supportive of secularly mystical agential accounts for behavior. Sadly, such coursework displaces additional scientific coursework. If/when these program become independent of other, incomensurable disciplines, the professional repertoires of these students could be scientifically expanded.

One example of that kind of scientific expansion, and a major breakthrough in efforts to secure the future of behaviorological science, appears in an independent program at the University of North Texas (UNT). Sigrid Glenn organized this program prior to 1987 when the current, formal and official usage of the term *behaviorology* began. The term at that time for the natural science of behavior was *behavior analysis*, and the program carried this label. (Professor Glenn also contributed at the 1987 meeting where a group of behavior analysts formally organized the natural science of behavior independently under the behaviorology label; see Highlights, 2013. Also, see Ledoux, 2015f, p. 172) Due to the demands of the cultural marketplace for increasing numbers of applied specialists in behaviorological science, the UNT program grew into both undergraduate and graduate programs in a department under the same label. This made UNT not only likely the first university campus with a department under a label explicitly for the natural science of behavior, but also one of the very few universities at that time where students either could study behavior through a natural science discipline in a department on one part of the university campus, or they could study behavior through a secularly mystical discipline in a different department on another part of the university campus (i.e., UNT's traditional psychology department; see Fraley, 1997, 1998c).

The “behavior analysis” label. Resolution of the status of the “behavior analysis” label progresses more slowly. The directions that prevailing contingencies favor

are not entirely clear. We (Ledoux and O’Heare) would personally have welcomed a day when that label stood free and clear of any claims or connotations other than as a potential name for the independent natural science of behavior informed by the philosophy of radical behaviorism. However, the possibility of such a day is likely gone forever, given that psychology also claims this label, due to the period during which these disciplines coexisted in shared departments with a shared history (see Ledoux, 2012b & 2015i). At present, and for at least the foreseeable future, the best tact (Peterson & Ledoux, 2014) for the natural *science* of behavior would seem to us to be *behaviorology*. If a movement emerges within behavior analysis to separate from psychology completely and openly as a comprehensive discipline informed by the philosophy of radical behaviorism, no need would exist for two separate disciplinary labels (behavior analysis and behaviorology).

Of course a place for both labels remains possible, with *behaviorology* referring to the basic science of behavior while *behavior analysis* refers to the professional practices of contingency engineering in the applied fields (e.g., behavioral safety, behavioral medicine, Applied Behavior Analysis, and other service delivery). The editions of *Origins and Components of Behaviorology* have documented much of the historical foundation that might bring behaviorological professionals to this kind of point.

PNET and pharmacotherapy concerns. After decades researching the parameters and benefits of a particular intervention protocol, John Ferreira brought *Progressive Neural Emotional Therapy* (PNET) to the attention of behaviorologists (Ferreira, 2012). Then, across two related articles, Philip Johnson first extended PNET into the particular area of interventions helpful to persons experiencing neuroleptic-induced tardive dyskinesia (Johnson, 2012) and then he expanded his analysis into general concerns over pharmaceuticals as treatments of behavior problems (Johnson, 2014).

PNET involves the refined and standardized practice of what people once inadequately described as a kind of relaxation training, and which now one might better describe as successive muscular-emotional reconditioning. This practice counters the negative effects of anxiety and stress, which are emotional and physical factors long associated with numerous neuro-emotional maladaptive behaviors.

Many types of therapies boast a broad array of tactics to calm and relax clients as part of interventions for their problems. Past researchers examined which therapy components helped and which did not. The outcomes, however, were inconsistent. Different client-problem combinations responded to different combinations of components, leaving the meaning and value of “relaxation

training” unclear in general as well as for particular clients. Some factors in that inconsistency include both the range of non-scientific descriptions of the relaxation process and the range of different relaxation-training procedures and components.

To address those concerns, Ferreira and his associates worked for decades developing a *standardized* set of relaxation-training protocols (e.g., see Ferreira, 2012). These efforts resulted in PNET, which grounds a standardized relaxation-therapy protocol in natural-science laws of behavior. By *standardizing* the principal protocols, PNET reduces or eliminates anxiety as a response to stress *for essentially all clients*, including those without clinical problems, because every client gets the full training; in this sense all clients need, and get, all parts of the procedure, even if some clients get more parts than they need. Most improvement occurs during the intervention training procedures, with further improvement occurring after the training for those clients who continue to practice the PNET procedures. Indeed, the research indicates that we could all benefit from some PNET training. As part of such training, PNET conditions the client in the skill of providing the relaxation cues, the stimuli that evoke and elicit relaxation, as a function of the usual stimuli that induce stress or anxiety. In other words the occurrence of stress or anxiety outside the therapy setting then successfully evokes the client’s responses of providing the cues that produce relaxation, and the client relaxes, gaining the attendant physical, behavioral, and even medical benefits.

Behaviorological therapists have used the PNET passive cue-controlled progressive-relaxation protocol “across a wide range of populations varying in diagnoses, gender, age, ethnicity, medical conditions, physical disabilities, and intellectual impairments” (Ferreira, 2012, p. 5). PNET provides a particularly valuable tool for addressing not only functional behavior problems but also physical health problems (see Ledoux, 2014a).

Increase in available media products. In recent years some explicitly behaviorology related media products have become available. Among these are a CD, a DVD, and eBook versions of Ledoux, 2014a [& 2017].

The CD presents the approximately half-hour radio-broadcast program of the 1988 interview of the organizers of the first behaviorology convention. Just before this first convention—which Ledoux organized for *The International Behaviorology Association* (TIBA) at Clarkson University in Potsdam, NY, on 9–11 August 1988—Pat McKeown, a senior reporter for the local public radio station (WSLU North Country Public Radio 89.5 FM in Canton NY, ten miles from Potsdam) suggested that she interview the convention organizers for a special edition of her Evening Report. The organizers (i.e.,

Lawrence Fraley, Stephen Ledoux, Ernest Vargas, and Julie Vargas) agreed, and Ms. McKeown spent over 90 minutes interviewing them as a group. The interviewees addressed a number of questions pertaining to radical behaviorism and the scientific study of human behavior, including some corrections of continuing professional misconceptions regarding the aircrib that Julie Vargas’s father, B. F. Skinner, built in the 1940s. (For a copy of the CD, contact TIBI under MEDIA at www.behaviorology.org and for a transcript, see Ledoux, 1988/2013; for more about the aircrib, see Skinner, 1987; or see Ledoux & Cheney, 1987.)

The DVD, entitled “Behaviorology and education for green engineering and sustainable living,” presents the two-hours or so of video that Dale Hallatt, of the Prosocial Progress Foundation (PPF) in the United Kingdom, recorded when he interviewed Stephen Ledoux in October 2013. Working for PPF, Mr. Hallatt and his brother, Thomas Hallatt, had provided Ledoux with 22 questions in preparation for his interview as part of a larger project on an environmentally supportive documentary film entitled *Prosocial Progress: A Blueprint for Social Sustainability*. The whole project involved a group of eight geographically dispersed interviewees. Selecting this project under *Films* at www.prosocialprogress.org (or at this link: <http://vimeo.com/80155313>) shows that this group also featured other behaviorologists including Julie Vargas, Zuilma Gabriela, Sigurðardóttir and Janet Twyman. In general, the range of questions for each interviewee centered on the relevance of the natural science of behavior—under old or new labels—to various aspects and areas of prosocial change. The questions that Hallatt asked Ledoux focused on the nature of behaviorology and its contributions to contingency arrangements that could increase the scientifically informed, prosocial activities of citizens, particularly with respect to solving global problems. The cooperation of PPF, TIBI, and ABCs (a publisher of mainly behaviorology texts) initially resulted in this interview DVD appearing as a fundraising activity. (For a copy of the DVD, contact TIBI under MEDIA at www.behaviorology.org and for a transcript of the prepared answers to the interview questions, see Ledoux, Hallatt, & Hallatt, 2014.)

Ongoing European developments. Even as we (Ledoux & O’Heare) began writing this paper, many in the European community of natural scientists of behavior were considering the question of the future of the discipline on their part of the planet. While contingencies compelled the participation—as TIBI members—of some of them decades ago explicitly under the behaviorology label (beginning, for example, with Werner Matthijs in Belgium; see Fraley & Ledoux, 1992/2015, p. 54–56) related contingencies have only recently brought about

a substantial, open and public increase in considering the disciplinary directions for this natural science in Europe. As a result the *European Journal of Behavior Analysis* (EJOBA) took the major step of devoting a whole issue—volume 15, number 1, in 2014—to discussions of the question “The future of behavior analysis—part of psychology, or a separate discipline?”

In that issue, after an introductory editorial by Per Holth, the journal reprinted both Jerome Ulman’s “The Ulman–Skinner letters” (from 1993, *Behaviorology*, 1, 47–54) and B. F. Skinner’s “A world of our own” (from 1993, *Behaviorology*, 1, 1–5) to set the discussion stage. (Given the importance of the topic, readers should go to the journal issue itself for all the references.) Authors were supposed to address their comments in the context of these introductory materials. While only some complied, the whole issue is worth reading. Some 20 authors provided 19 short articles on the stated topic, and Jerome Ulman provided a reply to each article.

The various directions of those discussions show substantial similarity with previous discussions on the topic that appeared in a variety of other journals (much of which was reported in Fraley & Ledoux, 2015). The views that the EJOBA authors expressed ranged from those who argued for maintaining what they saw as current, familiar disciplinary arrangements, to others who argued that the question was moot due not only to many historical developments (some of which this paper mentions) but also to professional developments with respect to certification and licensing, which have always been separate from psychology. The question is moot, because the natural science of behavior already exists separate from and independent of psychology, with that happening originally under the behavior analysis label but, with psychology claiming the behavior analysis label, it has happened most saliently under the behaviorology label. Perhaps the material in this behaviorology history paper (originally as Ledoux & O’Heare, 2015) and book (Ledoux, 2015f) and related, especially recent, books (e.g., Fraley, 2008, and Ledoux, 2014a, which was designed as an introduction to Fraley, 2008) would be helpful to such continuing discussions.

Future Historical Behaviorology Developments

Thus far, this paper has addressed historical disciplinary developments that occurred through 2015, some of which anticipated later developments. Perhaps, given the requisite space for more properly crafted historical accounts, the next iteration of this expanding history will appear in a separate volume [and perhaps by other authors].

Endnotes (Parts I & II)

Many of the disciplinary developments that this paper covers originally appeared in articles in TIBI’s published literature. After TIBI published eight issues of its magazine/newsletter across four years (1998–2001), the name changed from *TIBI News Time* (TNT, which featured volumes, 1–4, with no ISSN) to *Behaviorology Today* (starting with volume 5, ISSN 1536–6669). The name change coincided with the 2002 publication of the *Second Edition* of *Origins and Components of Behaviorology*, which included the earliest version of this paper as the Afterword at the end of the book. The two issues per year under both names contained mostly minimally peer-reviewed (although occasionally fully peer-reviewed) professional papers as well as newsletter materials. To maintain most of TIBI’s then print-published legacy under one title/ISSN, all of the main papers and relevant administrative/newsletter materials in those first four volumes of TNT reappeared in volume 5, the first volume under the new *Behaviorology Today* name. The Spring 2002 issue (volume 5, number 1) included the *Table of Contents* from each of the eight previous issues so that any items not republished could still be found (both online at www.behaviorology.org as well as offline).

Major disciplinary developments continued to occur in the years from 2003 to 2015. This paper now also covers most of these developments, many of which also appeared in articles in the journal that TIBI still publishes, but with some additional considerations. For example, *Behaviorology Today* became fully peer-reviewed as of volume 15 in 2012, and the name changed, as of volume 16 in 2013, to *Journal of Behaviorology* (ISSN 2331–0774). Readers wishing to track continuing developments in the behaviorology discipline should follow not only the contents of the continuing volumes of *Journal of Behaviorology* but also watch for the appearance of new behaviorology books and media (as announced on www.behaviorology.org). Developments beyond 2015 become the focus of future updates of this paper... The authors thanks David Feeney, Lawrence Fraley, and Glenn Latham (the original founders, with Ledoux, of TIBI) for reviewing the parts of this paper that appeared as the Afterword at the end of the *Second Edition*, which covered up to 2002.✧

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Visit BOOKS at www.behaviorology.org

At www.behaviorology.org TIBI provides information on as many behaviorology resources as possible, including books and audio/visual materials, as well as electronic versions of back issues of *Journal of Behaviorology* and its predecessor *Behaviorology Today*. Some recently described books are (a) *Science Works on Human Behavior* by Stephen Ledoux, (b) two *Study Question* books by Lisa Ramond (AKA Lisa Brothers) on Lawrence Fraley's *Dignified Dying* book and his *Rehabilitation* book, (c) *What Causes Human Behavior—Stars, Selves, or Contingencies?* by Stephen Ledoux, and (d) several behaviorological books about companion animal training by James O'Heare. Check out them all!

Syllabus Directory*

The most recent issue of *Journal of Behaviorology* that features a Syllabus Directory contains two lists of TIBI's current course syllabi. These lists show where to find the most up-to-date versions of these syllabi in number, title, and content. The first list organizes the syllabi by numerical course number. The second list organizes the syllabi by the chronological volume, number, and pages where you can find each course syllabus.

Each of these syllabi contain only information explicit to a particular course. You will find all the relevant generic information in the article, *General Parameters & Procedures for Courses from The International Behaviorology Institute*, in *Journal of Behaviorology*, Volume 18, Number 2 (Spring, 2015) pp. 3–6.

Current Syllabi by Course Number

- BEHG 100: *Child Rearing Principles and Practices*;
Volume 19, Number 2 (Fall 2016) 3–5.
- BEHG 110: *Introduction to Behaviorology Terminology*;
Volume 20, Number 1 (Spring, 2017) 19–21.
- BEHG 210: *Introduction to Behaviorology I*;
Volume 19, Number 2 (Fall 2016) 6–8.
- BEHG 211: *Introduction to Behaviorology II*;
Volume 19, Number 2 (Fall 2016) 9–12.
- BEHG 330: *Companion Animal Training*;
Volume 19, Number 2 (Fall 2016) 13–15.
- BEHG 340: *Introduction to Verbal Behavior*;
Volume 19, Number 2 (Fall 2016) 16–18.
- BEHG 350: *Behaviorology Philosophy and History*;
Volume 20, Number 1 (Spring, 2017) 22–24.
- BEHG 405: *Basic Autism Intervention Methods*;
Volume 19, Number 2 (Fall 2016) 19–21.
- BEHG 425: *Classroom Management and Preventing School Violence*;
Volume 19, Number 2 (Fall 2016) 22–24.
- BEHG 430: *Resolving Problem Animal Behavior*;
Volume 20, Number 1 (Spring, 2017) 25–28.
- BEHG 435: *Performance Management and Preventing Workplace Violence*;
Volume 19, Number 2 (Fall 2016) 25–27.
- BEHG 455: *Behaviorological Thanatology and Dignified Dying*;
Volume 19, Number 2 (Fall 2016) 28–31.
- BEHG 465: *Behaviorological Rehabilitation*;
Volume 19, Number 2 (Fall 2016) 32–34.

- BEHG 480: *Green Contingency Engineering*;
Volume 20, Number 1 (Spring, 2017) 29–31.
- BEHG 512: *Advanced Behaviorology I*;
Volume 19, Number 2 (Fall 2016) 35–37.
- BEHG 513: *Advanced Behaviorology II*;
Volume 19, Number 2 (Fall 2016) 38–40.
- BEHG 541: *Advanced Verbal Behavior*;
Volume 19, Number 2 (Fall 2016) 41–43.✿

Current Syllabi by Volume & Number

- BEHG 100: *Child Rearing Principles and Practices*;
Volume 19, Number 2 (Fall 2016) 3–5.
- BEHG 210: *Introduction to Behaviorology I*;
Volume 19, Number 2 (Fall 2016) 6–8.
- BEHG 211: *Introduction to Behaviorology II*;
Volume 19, Number 2 (Fall 2016) 9–12.
- BEHG 330: *Companion Animal Training*;
Volume 19, Number 2 (Fall 2016) 13–15.
- BEHG 340: *Introduction to Verbal Behavior*;
Volume 19, Number 2 (Fall 2016) 16–18.
- BEHG 405: *Basic Autism Intervention Methods*;
Volume 19, Number 2 (Fall 2016) 19–21.
- BEHG 425: *Classroom Management and Preventing School Violence*;
Volume 19, Number 2 (Fall 2016) 22–24.
- BEHG 435: *Performance Management and Preventing Workplace Violence*;
Volume 19, Number 2 (Fall 2016) 25–27.
- BEHG 455: *Behaviorological Thanatology and Dignified Dying*;
Volume 19, Number 2 (Fall 2016) 28–31.
- BEHG 465: *Behaviorological Rehabilitation*;
Volume 19, Number 2 (Fall 2016) 32–34.
- BEHG 512: *Advanced Behaviorology I*;
Volume 19, Number 2 (Fall 2016) 35–37.
- BEHG 513: *Advanced Behaviorology II*;
Volume 19, Number 2 (Fall 2016) 38–40.
- BEHG 541: *Advanced Verbal Behavior*;
Volume 19, Number 2 (Fall 2016) 41–43.
- BEHG 110: *Introduction to Behaviorology Terminology*;
Volume 20, Number 1 (Spring, 2017) 19–21.
- BEHG 350: *Behaviorology Philosophy and History*;
Volume 20, Number 1 (Spring, 2017) 22–24.
- BEHG 430: *Resolving Problem Animal Behavior*;
Volume 20, Number 1 (Spring, 2017) 25–28.
- BEHG 480: *Green Contingency Engineering*;
Volume 20, Number 1 (Spring, 2017) 29–31.✿

*All of these TIBI course syllabi were either updated in 2016 or new in 2017. Many have older version appearing in earlier issues under different course numbers; see the *Syllabus Directory* in Volume 18, Number 1 (Spring 2015) for details.

More Assistance in Developing Behaviorology Courses and Programs

Stephen F. Ledoux*

SUNY-Canton (retired)

Abstract: The “more” in the title refers to this paper providing some further ideas or experiences, beyond those covered in a paper by Ledoux and O’Heare (2015/2018) that might assist those coming into positions where developing behaviorology curricula for their programs, colleagues, or departments might be possible or even expected. The paper covers explicit courses and resources, and a series of *coordinated* programs (A.A., B.A., M.A., Ph.D.) and considerations, based on the author’s 25 years of behaviorology curriculum development experience (see Ledoux, 2015a).

A paper on behaviorology curricula in higher education, which was first published in 1990 (see Ledoux, 2015b), covered courses conceived without reference to the actual contingencies of any particular program, department, or institution. Using a more coordinated set of course numbers, this paper presents the set of courses that the author had put in place at the State University of New York (SUNY) at Canton where he was employed for over 30 years, with 20 or more students having completed 12 or more of these courses, in the several years up to 2015, before graduating and getting jobs—or going to graduate school—in this field. As described here, this set includes some adjustments that were anticipated or were about to be implemented as of 2015. Before retiring from SUNY-Canton in 2015, the author oversaw this behaviorology program track, at this accredited college campus. This track resulted in students earning the *equivalent* of a strong, 12-course, 36-credit major for a Bachelor of Arts degree in behaviorology. Officially, however, their 36 behaviorology credits were part of a 60-credit Bachelor of Science degree in an applied human-services curriculum.

Before granting approval for that program, the central administration for all the SUNY campuses required programs from several campuses—including this one—to go by a label that inherently misrepresented this program. Another paper (Ledoux & O’Heare, 2015/2018) well covers many of the circumstances surrounding the development and implementation of the behaviorology courses and program at SUNY-

Canton. Together, that paper and this one provide many suggestions that can ease the task, at least initially, for other faculty in the position to develop or extend behaviorology course and program options. This is a necessary task if this basic science is to provide to humanity the full range of its potential contingency-engineering applications, from behavioral interventions for persons with Autism Spectrum Disorder, usually under the label *Applied Behavior Analysis*, to the behavioral components of solutions to global problems (see Ledoux, 2014, 2017, 2018).

Curricular Courses and Resources from 25 Years of Experience (1990–2015)

The courses and textual resources described here represent where the SUNY-Canton program track was most likely headed had the behaviorology faculty (the author and three practicing behaviorologist adjuncts) had the opportunity to make adjustments and move the program forward along lines that served students, the discipline, and the local employers who hired the behaviorology graduates to provide services for local populations of adults and children with autism and developmental disabilities. The adjustments happened later, or not at all, because—predictably, from reports elsewhere in Ledoux, 2015c—the several psychology faculty simply voted down the single full-time

*Address correspondence regarding this article to ledoux@canton.edu.

behaviorology professor to get whatever they wanted in contradiction to what the institutional data showed to be demonstrably better for, and in many cases preferred by, the students and the local employers, who speak for the local special-needs populations who, in most cases, cannot speak for themselves.

Thus, a first step for budding behaviorology curricula developers would be to move their programs and departments to independence outside of psychology units, and even outside social science units, and preferably into natural-science units, to avoid such problems. For example, the budgeted position for the behaviorology faculty member went, upon his retirement, not to hire a behaviorologist to continue teaching these courses and developing the program, but to hire a psychologist who, as a psychologist, would not be qualified to teach any of the 14 behaviorology courses on the books. Professionals from or in psychology, to the extent that their educational or professional conditioning continues to produce intellectual, academic, or teaching responses supportive of the fundamental, secularly mystical agentialism at the required core of the traditional psychology discipline, are not competent—not qualified—to teach behaviorology; their teaching of behaviorology courses is equivalent to astrologers teaching astronomy courses, creationists teaching biology courses, and so on. Consequently, the need arose to protect the behaviorology discipline from such ravages by moving, at the departmental level, to take the behaviorology courses off the campus books. Should circumstances change, and a couple of behaviorologists get hired, then they can easily restore the courses and make improvements like those presented here.

Meanwhile, this listing of behaviorology courses and textual resources includes references—some of which have annotations—for the behaviorology books, and behaviorological science books, that behaviorology course professors selected for use in the behaviorology programs and courses that SUNY offered and that The International Behaviorology Institute (TIBI) offers (see O’Heare, 2018). These courses have been or are taught by behaviorologists (all of whom have been or are, members of TIBI). And the subject matter of these courses is behaviorology, a subject matter that is the natural science of behavior (or, more explicitly, the natural science of environment-behavior relations) and not any kind of, nor any part of, psychology. (Note that while the articles, from the disciplinary literature, that also get used in these courses, are *not* included in this list, all of the books of study questions that are used in these courses are included, and appear with an asterisk after the related textbook.)

Courses, Descriptions, and Behaviorology Textual Resources

These courses concern foundations and applications arising not only from local interests but also from the availability of textbooks and related materials authored by behaviorologists. Course numbers reflect content levels (i.e., 100s and 200s for lower-level undergraduate courses, 300s and 400s for upper-level undergraduate courses, and 500s and 600s for graduate courses) although some courses, especially 400-level courses, could qualify for graduate-course status with appropriate additions and simple renumbering, such as 330 becoming 530, and 425 becoming 525 or 625. The courses themselves arose from the actual contingencies at a particular institution; the extent to which those contingencies constrain the wide applicability of these courses to other programs, departments, or institutions, is not known. However, since the description, and typical texts, of these courses may still help other curriculum developers, who likely share similar contingencies, here is a semi-sequence of basic behaviorology courses that reflect the planned improvements to the sequence from the author’s college’s undergraduate behaviorology track (with prerequisites/corequisites in parentheses):

Required courses: This strong 36-credit BA major requires 12 courses, of which two courses would be behaviorology electives. Wherever courses are equivalent, TIBI’s courses and the courses listed in this paper share the same course numbers. Here are the ten required courses:

✧ BEHG-100: Child Rearing Principles and Practices (previously: Parenting Knowledge and Skills). *Description:* This course provides students of any age and interest (such as child care or parenting) with the scientific contributions of behaviorology that can instill or enhance the knowledge and skills for caring for children in effective, pro-active, non-coercive, positive, and loving ways. Behavior management related skills for application in everyday public and personal situations involving children are included. (Prereq: None.) Relevant Textual Resources: Latham (1994) *The Power of Positive Parenting* (and study questions: Ledoux, 2001).

✧ BEHG-110: Introduction to Behaviorology Terminology. *Description:* This course introduces students to the basic technical vocabulary of the discipline of behaviorology by *mainly conditioning terminology responses* emphasizing its laboratory research methods and its experimentally derived principles, concepts, and practices. Methods include laboratory single-subject designs, equipment, and measurement protocols. Principles include the antecedent and postcedent relations between behavior and its controlling variables (e.g., respondent and operant conditioning, evocative and function-altering stimulus controls, added and

subtracted reinforcement and punishment, extinction, and simple reinforcement schedules). Concepts include a range of processes involved in environment–behavior relationships (e.g., emotions and feelings, stimulus and response generalization, overt and covert stimuli and responses, generalized and coincidental reinforcers, superstitious behavior, escape and avoidance, and establishing operations such as deprivation and satiation). Practices include various components of interventions that change and expand behavior repertoires through contingency engineering (e.g., differential reinforcement, shaping, fading, chaining, modeling and imitation, and time out). (Prereq: None.) Relevant Textual Resources: Holland & Skinner (1961) *The Analysis of Behavior* (preferably a newer version with terminology updated, along the lines that led to Peterson & Ledoux, 2014, using Shuler & Ledoux, 2017).

❧ BEHG-210: Introduction to Behaviorology I (previously: Introduction to the Science and Technology of Behavior). *Description*: Going beyond basic terminology responses, this course, the first of a two–course sequence, begins to provide both major and non–major students with an initial introduction to various interrelated components of behaviorology (e.g., the interrelations between and among the antecedent and postcedent variables controlling behavior, the range of processes involved in environment–behavior relationships, and the various components of interventions that change and expand behavior repertoires through contingency engineering). These interrelated components, including relations with physiology, emphasize or elaborate basic research methods, fundamental principles, and elementary practices, as well as historical and philosophical perspectives and trends. (Prereq/Coreq: BEHG-110: Introduction to Behaviorology Terminology.) Relevant Textual Resources: Part I of Ledoux (2014) *Running Out of Time—Introducing Behaviorology to Help Solve Global Problem* (and study questions: Ledoux, 2014) or Part I of Ledoux (2017) *What Causes Human Behavior—Stars, Selves, or Contingencies?* (and study questions if available).

❧ BEHG-211: Introduction to Behaviorology II (previously: Applied Science and Technology of Behavior). *Description*: Still going beyond basic terminology responses, this course, the second of a two–course sequence, and the minimum prerequisite of most higher level behaviorology courses, continues to provide both major and non–major students with further initial introduction to more of the interrelated components of the behaviorology discipline. The areas covered, some through standard, natural–science repetitious expansion, include general applications of the principles and practices of behaviorology focusing on a range of problem prevention and intervention

techniques and considerations (e.g., differential reinforcement, shaping, chaining, fading, schedules, and problems with aversive controls) in a range of settings, along with an introduction to advanced topics such as equivalence relations, the values–rights–ethics–morals continuum, verbal behavior, consciousness, personhood, life, death, and reality. (Prereq: BEHG-210: Introduction to Behaviorology I.) Relevant Textual Resources: (a) Part II of Ledoux (2014) *Running Out of Time—Introducing Behaviorology to Help Solve Global Problem* (and study questions: Ledoux, 2014) or Part II of Ledoux (2017) *What Causes Human Behavior—Stars, Selves, or Contingencies?* (and study questions if available), and (b) Ledoux (2012) *Behaviorology Majors Make a Difference*.

❧ BEHG-330: Companion Animal Behavior Training. *Description*: This course applies behaviorology in the field of companion animal behavior training. Topics include (a) the successful, non–coercive animal training practices, derived from basic principles, that are used by professional animal trainers around the world, and (b) how to teach the guardians of companion animals how to train their “pets.” After reviewing basic principles and the significance of species differences, relevant practices are differentially applied to effective behavior training of four representative companion animal species: cats, dogs, birds, and horses. The generic application of these practices to training yet other species also receives attention. (Includes a companion animal response chaining project.) (Prereq/Coreq: BEHG-210: Introduction to Behaviorology I.) Relevant Textual Resources: O’Heare (2015) *The Science and Technology of Animal Training* (and study questions: O’Heare, 2015).

❧ BEHG-340: Introduction to Verbal Behavior Analysis. *Description*: This course introduces students to (a) the behaviorological analysis of language as verbal behavior, (b) the historical context in which this analysis arose, and (c) some applications of verbal behavior analysis especially with respect to enhancing the conditioning of verbal behavior for multi–language students or persons with developmental disabilities. Covered topics include such fundamental concepts as (a) differentiating verbal and non–verbal behavior, (b) the verbal community, (c) mediated reinforcement, (d) the basic verbal behavior relations called mands, tacts, intraverbals, codics, and duplcs (and the subtypes of these last two), (e) various extensions of these elementary verbal operants, (f) the most common variables of which verbal operants are a function, (g) some of the ways these variables combine in the multiple control of complex verbal behaviors, (h) response products, (i) point–to–point correspondence, (j) formal similarity, (k) thematic and formal controls over verbal behavior, and (l) the ways the verbal community conditions verbal responding under the control of covert stimuli. The course includes reviews of B. F. Skinner’s

1957 classic book, *Verbal Behavior* (a book that should comprise a more advanced course). (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Peterson & Ledoux (2014) *An Introduction to Verbal Behavior—Second Edition* (which contains its study questions).

❖ BEHG-350: Behaviorology Philosophy and History. *Description*: This course provides an in-depth treatment both of (a) the history of the emergence of behaviorology as a discipline during the 1900s, and of (b) the philosophy of science not only of the natural sciences in general (i.e., naturalism) but also of this discipline in particular (i.e., radical behaviorism) and tracing the development of this philosophy since the early 1900s, comparing and contrasting it with other philosophies of the times, examining its role in the emergence of the behaviorology discipline, and considering its implications for experimental and applied work at the individual and cultural levels. (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Appropriate parts of Ledoux (2015) *Origins and Components of Behaviorology—Third Edition* (and study questions: Ledoux, 2015) along with Skinner (1974) *About Behaviorism*.

❖ BEHG-460: Functional Behavior Assessment and Ethics. *Description* (by Christopher Cryer, BCBA, LBA): This course covers professional ethics and the component parts of, procedures for, and completion and implementation of comprehensive Functional Behavior Assessments (FBAS), one of the principle practices developed by behaviorological practitioners and used as well by many others in related applied fields. Course coverage includes the variety of techniques and strategies, from the natural science of behavior, behaviorology, that this kind of assessment incorporates both (a) to discover the accessible causes of specified behaviors of concern that occur to particular clients or consumers in particular settings, and (b) to identify likely interventions to improve these behaviors. The course also covers (c) the many ways in which FBA takes into account biological and environmental—including social—factors that evoke, sustain, or alter the behavior of concern, which leads to, and organizes, the most directly related intervention components, and (d) the effective use of this type of assessment with several different populations (e.g., with autism and developmental disabilities, mental health and aging clients and consumers, and school-based children) along with (e) the federal and state legal requirements for the use of FBAS. (Includes a personal change project.) (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Cryer & O’Heare (in progress) *Functional Behavior Assessment and Ethics* (which contains its study questions).

❖ BEHG-470: Basic Behaviorology Laboratory Research. *Description*: In this course the student at least assists in the ongoing work of a current laboratory research experiment, and may also conduct experimental research that contributes to the project. The student first becomes familiar with the background experiments and issues of the project, the current work of the project, and some of the potential directions of the project. (Includes a peer change project.) (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Appropriate laboratory research articles from *Journal of Behaviorology* (previously *Behaviorology Today*) and the natural science of behavior literature.

❖ BEHG-480: Green Contingency Engineering. *Description*: After covering the role of coercion in prompting many levels of violence throughout society, from interpersonal and family interactions, through educational and workplace situations, to international and cultural relations—violence that interferes with problem solutions—and while emphasizing non-coercive policies across all levels of society in solving problems, this course probes the range of actual and potential behaviorological applications to the behavior components of a wide range of global problems and solutions, starting with solutions reported in the natural science of behavior literature, and proceeding to design, and if possible test, not only extensions to such solutions but also new solutions to accessible aspects of as yet unaddressed planetary or cultural problems. The focus is on improving cultures and the potential for human and planetary survival. (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Sidman (2001) *Coercion and its Fallout—Revised Edition* (and study questions: Kopp, 2001) and Skinner (1948) *Walden Two* (and study questions: Ledoux et al, 1976–2012) and Wyatt (1997) *The Millennium Man* (and study questions: Ledoux, Wyatt, & Bias, 1999) and appropriate articles from the natural science of behavior literature.

Elective courses: Of the 12 courses that the BA requires, two would be behaviorology electives. The two needed elective courses can come from courses like these courses:

❖ BEHG-405: Basic Autism Intervention Methods. *Description*: This course provides students with many basic contingency engineering practices and skills that they need for successful interventions with individuals with autism and other developmental disabilities. Topics include (a) the evaluation of different approaches for relative effectiveness, (b) effective training curricula and programs, (c) a range of home-based and center-based settings, (d) the different roles of professionals, para-professionals, and school systems involved in autism intervention efforts, (e) the organizational and legal supports available to children with autism

and their families, (f) the roles of different autism treatment team members, (g) the organizational and legal interactions between families with children with autism and their local schools, and (h) some answers to the most common questions asked by parents of children with autism. Examination of actual autism training curricula, programs, practices, data sheets, and case histories are integral parts of the course. (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Maurice, Green, & Luce (1996) *Behavioral Intervention for Young Children with Autism* (and study questions: Ledoux, 2003) and Maurice (1994) *Let Me Hear Your Voice*, and NYS Department of Health Early Intervention Program (1999 [Publication No. 4216]) *Clinical Practice Guideline Quick Reference Guide (for Parents and Professionals): Autism/Pervasive Developmental Disorders*.

❧ BEHG-425: Classroom Management and Preventing School Violence. *Description:* This course covers the application of behaviorology to non-coercive classroom management skills and their relation to preventing school violence. After reviewing the role that punishment and coercion play in prompting violence of all types throughout society (i.e., Sidman, 2001) the course focuses on the use of effective, non-coercive behaviorological skills for classroom management that school teachers and staff can personally implement—especially in the classroom but also in the cafeteria and gym, and on the bus and playground—to reduce and prevent the occurrence of all kinds and levels of school violence while also enhancing the effectiveness of instruction. These skills replace the unscientific emphasis on coercive “discipline” practices thereby *preventing* the violence that such practices may themselves induce. Then the course focuses on the various recommended school-wide policies and procedures for *detering* the actual occurrence of school violence in situations where violence has become likely. (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Latham (1998) *Keys to Classroom Management* (and study questions: Ledoux, 2000) and Zinna (1999) *After Columbine* (and study questions: Ledoux, 2000).

❧ BEHG-435: Performance Management and Preventing Workplace Violence. *Description:* This course covers the application of behaviorology to non-coercive workplace management skills and their relation to preventing workplace violence. After reviewing the role that punishment and coercion play in prompting violence of all types throughout society (i.e., Sidman, 2001) the course focuses on the effectiveness of the non-coercive skills that performance management applies in the full range of workplace settings to replace the unscientific emphasis on coercive management practices thereby *preventing* the violence such practices may themselves

induce. Then the course focuses on comparing, applying, and evaluating various recommended policies and procedures for *detering* the actual occurrence of workplace violence in all the usual workplaces (e.g., industrial, manufacturing, organizational, marketing, financial, institutional, or retail business settings). (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Daniels and Daniels (2004) *Performance Management (Fourth Edition)* along with Mountain States Employers Council and Nicoletti-Flater Associates (1994) *Violence Goes to Work* (or more recent editions).

❧ BEHG-445: Behavioral Medicine and PNET. *Description:* [The development of a course on this important topic is awaiting the arrival of an appropriately qualified and interested behaviorology faculty member.] (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Appropriate articles from the natural science of behavior literature, including articles on PNET (Progressive Neural Emotional Therapy) from *Journal of Behaviorology* (previously *Behaviorology Today*).

❧ BEHG-455: Behaviorological Thanatology and Dignified Dying. *Description:* After reviewing the role that punishment and coercion play in prompting violence of all types throughout society (i.e., Sidman, 2001) this course focuses on replacing some subtle, residual violence, visited on society members suffering terminal illness, with scientifically informed practices that allow retention of human dignity for all parties in these circumstances, but especially for the dying individual, during the social death, person death, and body death of the terminal-illness process. Answering the question of how we can improve end-of-life interactions between the dying and society, between the increasing numbers of the terminally ill and their survivors, between ourselves and our loved ones in these difficult times, is an integral course component, as is a range of scientifically grounded alternative, proactive, dignity maintaining practices. Which professional group might best organize these improvements and new practices (e.g., medical doctors or nurses, hospice personnel, funeral directors, behaviorologists, or teams with these skill sets) is explored, along with some problematic medical ethics. The historical context, and social contingencies affecting new practices, are included in the consideration of how to move from old to new practices. (Prereq: BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Fraley (2012) *Dignified Dying—A Behaviorological Thanatology* (and study questions: Raymond, 2015).

❧ BEHG-465: Behaviorological Rehabilitation. *Description:* This course provides students with the application of behaviorological considerations to help improve human interactions and success rates in institutional rehabilitation settings such as prisons. After

reviewing the problems provoked by the sometimes unnecessary coercion that too often informs many practices in such settings (i.e., Sidman, 2001) the course examines the value of replacing the unscientific emphasis on coercive practices with effective, comprehensive, and systematic science-based practices for more successful rehabilitation of both adult and youth offenders. The course takes a data-based orientation to the general design and management of correctional institutions, and the training and professionalism of staff in those settings, all as integral course components. (Prereq: BEHG-2II: Introduction to Behaviorology II.) Relevant Textual Resources: Cohen & Filipczak (1989) *A New Learning Environment*, and Fraley (2013) *Behaviorological Rehabilitation and the Criminal Justice System* (and study questions: Raymond, 2015).

☞ BEHG-475: Behaviorology Intervention Seminar and Practicum. *Description:* In this course, in addition to participating in a two-hour seminar each week of the semester, the student assists with ongoing contingency engineering work, for a six-hour practicum each week of the semester, in a field settings such as a clinic, school, or other institution or agency. The course considers the applications of behaviorological principles and techniques occurring at the locations of the students' practicums, and includes the measurement and classification of the behaviors of concern at these locations, while providing training in two major repertoires needed for effectiveness in the work of contingency engineering: (a) training *about* the techniques, stemming from the laws of behavior, that are used to generate, maintain, increase, and decrease behavior in applied settings, and (b) training *in the actual use*, or application, of these techniques as reported in the research literature and as experienced and practiced on site. May repeat once for credit. (Prereq: BEHG-2II: Introduction to Behaviorology II, with BEHG-405: Basic Autism Intervention Methods *recommended!*) Relevant Textual Resources: Appropriate articles from the natural science of behavior literature.

☞ BEHG-485: Behaviorology Teaching Seminar and Practicum. *Description:* In this course, in addition to participating in a two-hour seminar each week of the semester, the student assists with ongoing educational contingency engineering, for a six-hour practicum each week of the semester, by helping teach a regular behaviorology course offering. Integral course components include the interaction between instructional design and human behavior from the vantage points of (a) the theoretical, historical, and philosophical aspects of the facts of teaching, including the reasons for effective and ineffective methods, the role of technology in teaching, and the teaching of thinking, emotions, creativity, and discipline, and (b) the practical aspects of teaching, including the management of the student's environment,

the measurement and evaluation of techniques of educational contingency engineering, and the expansion of the student's behavior repertoire as a function of teaching. The student participates in the preparation and testing of teaching materials, designs a course, and experiences lecturing, tutoring, and PSI—*Personalized System of Instruction*—sessions, while addressing self pacing, and systematic mastery and fluency, in instructional design. (Prereq: BEHG-2II: Introduction to Behaviorology II, the course which the student will help teach, and at least one other upper level behaviorology course.) Relevant Textual Resources: Appropriate articles from the natural science of behavior literature.

Example Sequence of Undergraduate Program Courses by Semester

This sample sequence uses some of the courses already described. While other sequences could address various shifts in emphasis (e.g., a sequence explicitly designed to guarantee fulfilling course requirements for a professional certification) here is one way to sequence a four-year behaviorology Bachelor of Arts degree program:

Semester 1. Fall, first year:

☞ BEHG-100: Child Rearing Principles and Practices.

Semester 2. Spring, first year:

☞ BEHG-110: Introduction to Behaviorology Terminology.

Semester 3. Fall, second year:

☞ BEHG-210: Introduction to Behaviorology I.

Semester 4. Spring, second year:

☞ BEHG-2II: Introduction to Behaviorology II.

Semester 5. Fall, third year:

☞ BEHG-330: Companion Animal Behavior Training.

☞ BEHG-340: Introduction to Verbal Behavior Analysis.

Semester 6. Spring, third year:

☞ BEHG-350: Behaviorology Philosophy and History.

☞ BEHG-460: Functional Behavior Assessment and Ethics.

Semester 7. Fall, fourth year:

☞ BEHG-470: Basic Behaviorology Laboratory Research.

☞ BEHG-4XX: (Elective).

Semester 8. Spring, fourth year:

☞ BEHG-480: Green Contingency Engineering.

☞ BEHG-4XX: (Elective).

A Sample Sequence for Undergraduate Transfer Students

While few students actually follow specified sequences, this sample sequence shows a way to sequence a four-year behaviorology Bachelor of Arts degree program for transfer students who need to fit the program into their second two years of college:

Semester 5. Fall, third year:

☞ BEHG-110: Introduction to Behaviorology Terminology.

☞ BEHG-210: Introduction to Behaviorology I.

☞ BEHG-330: Companion Animal Behavior Training.

Semester 6. Spring, third year:

- ❧ BEHG-100: Child Rearing Principles and Practices.
- ❧ BEHG-211: Introduction to Behaviorology II.
- ❧ BEHG-350: Behaviorology Philosophy and History.

Semester 7. Fall, fourth year:

- ❧ BEHG-340: Introduction to Verbal Behavior Analysis.
- ❧ BEHG-470: Basic Behaviorology Laboratory Research.
- ❧ BEHG-4XX: (Elective).

Semester 8. Spring, fourth year:

- ❧ BEHG-460: Functional Behavior Assessment and Ethics.
- ❧ BEHG-480: Green Contingency Engineering.
- ❧ BEHG-4XX: (Elective).

A Possible Behaviorology Bachelor of Science Degree

Faculty can arrange a four-year behaviorology Bachelor of Science degree program by requiring eight more courses (i.e., 24 more credits). These can be some combination of previously mentioned or new behaviorology electives, and other natural-science courses (e.g., physics, chemistry, biology, physiology, astronomy, geology) for a total of 60 credits.

Behaviorology Courses Relevant to Other Curricula

Here are some courses that may also fit some needs of other college curricula (with particularly relevant curricula listed in parentheses after the course title):

- ❧ BEHG-100: Child Rearing Principles and Practices (Early Childhood, Education).
- ❧ BEHG-330: Companion Animal Behavior Training (Veterinary Science).
- ❧ BEHG-425: Classroom Management and Preventing School Violence (Education).
- ❧ BEHG-435: Performance Management and Preventing Workplace Violence (Business, Management).
- ❧ BEHG-455: Behaviorological Thanatology and Dignified Dying (Mortuary Science).
- ❧ BEHG-465: Behaviorological Rehabilitation (Criminal Justice).
- ❧ BEHG-480: Green Contingency Engineering (Sustainability Engineering).
- ❧ BEHG-485: Behaviorology Teaching Seminar and Practicum (Education).

Graduate Programs: M.A.

The paper on higher-education behaviorology curricula (Ledoux, 2015b) already provided a good starting point for considering graduate curricula. In or after 2015, any graduate curriculum producing repertoires sufficient for *teaching* behaviorology should involve at least a 30-credit, one-year master's degree that includes a 3-6 credit research thesis, and courses—and textual resources—like these:

First Semester. Here are the courses that would fit the first term of an M.A.:

- ❧ BEHG-512: Advanced Behaviorology Science I (Ledoux's 2014 *Running Out of Time—Introducing Behaviorology to Help Solve Global Problem*, Part I [and study questions: Ledoux, 2014] or Fraley's 2008 *General Behaviorology—The Natural Science of Human Behavior*, Part I and part of Part II [and study questions: O'Heare, 2013]).
- ❧ BEHG-520: Advanced Behaviorology Applications I.
- ❧ BEHG-541: Advanced Verbal Behavior (Skinner's 1957 *Verbal Behavior* and appropriate articles from the natural science of behavior literature).
- ❧ BEHG-571: Behaviorology Laboratory Research (which prepares the student for the thesis research and writing).
- ❧ BEHG-5XX: (Elective [e.g., Contingency Engineering and Sustainable living]).

Second Semester. Here are the courses that would fit the second term of an M.A.:

- ❧ BEHG-513: Advanced Behaviorology Science II (Ledoux's 2014 *Running Out of Time—Introducing Behaviorology to Help Solve Global Problem*, Part II [and study questions: Ledoux, 2014] or Fraley's 2008 *General Behaviorology—The Natural Science of Human Behavior*, the rest of Part II and Part III [and study questions: O'Heare, 2013]).
- ❧ BEHG-521: Advanced Behaviorology Applications II.
- ❧ BEHG-5XX: (Elective [e.g., BEHG-575: Behaviorology Applications Practicum, which assures that the student can manage contingencies effectively]).
- ❧ [BEHG-5XX: Another elective, if the Thesis is only 3-credits.]
- ❧ BEHG-600: Thesis (3-6 credits).

Sample graduate course descriptions and resources.

As a sample, here are the descriptions and resources for two graduate behaviorology courses worth requiring:

- ❧ BEHG-512: Advanced Behaviorology Science I. *Description:* This first course of a two-course sequence covers in detail the variables of which the behavior of humans and other animals is a function, as discovered from the natural-science perspective and with the emphasis on increasingly complex human behavior. Included is not only a range of pertinent and accessible environment-behavior functional relations, but also the naturalistic philosophical foundations of the behaviorology discipline (the natural science and technology of environment-behavior relations) as well as the research methodology involved in discovering the independent variables in these relations and engineering them into sophisticated applications and interventions beneficial to humanity. Additional course topics include (a) classifying behavior, (b) avoiding explanatory fictions and analytical fallacies, (c) experimentally manipulating independent variables of behavior, (d) measuring, recording, graphing, and

interpreting behavior-related data, and (e) turning the experimentation-based prediction and control of behavior into beneficial behavior engineering practices emphasizing antecedent and postcedent processes. (Prereq: at least BEHG-211: Introduction to Behaviorology II.) Relevant Textual Resources: Ledoux's 2014 *Running Out of Time—Introducing Behaviorology to Help Solve Global Problem*, Part I (and study questions: Ledoux, 2014) or Fraley's 2008 *General Behaviorology—The Natural Science of Human Behavior*, Part I and part of Part II (and study questions: O'Heare, 2013).

✧ BEHG-513: Advanced Behaviorology Science II. *Description:* This second course of a two-course sequence covers in detail *more of* the basic variables of which the behavior of humans and other animals is a function, as discovered from the natural-science perspective and with the emphasis on increasingly complex human behavior. Included is not only *more of* the range of pertinent and accessible environment-behavior functional relations, but also *more of* the naturalistic philosophical foundations of the behaviorology discipline as well as the research methodology involved in discovering the independent variables in these relations and engineering them into sophisticated applications and interventions beneficial to humanity. Course topics also include (a) stimulus equivalences, (b) reinforcement schedules plus adjunctive behavior, (c) aversive controls plus more effective alternatives, (d) applied behavior research plus behavioral objectives, (e) gradual change in both stimuli and responses, (f) some complex cases including values, rights, ethics, and morals, (g) verbal behavior and consciousness, (h) personhood and culture, (i) reality, and (j) intellectual evolution (biological and cultural). (Prereq: BEHG-512: Advanced Behaviorology Science I.) Relevant Textual Resources: Ledoux's 2014 *Running Out of Time—Introducing Behaviorology to Help Solve Global Problem*, Part II (and study questions: Ledoux, 2014) or Fraley's 2008 *General Behaviorology—The Natural Science of Human Behavior*, the rest of Part II and Part III [and study questions: O'Heare, 2013].

Graduate Programs: Ph.D.

Faculty can arrange a behaviorology ph.d. program (particularly in the basic science of behaviorology, *The Experimental Analysis of Behavior*) by requiring ten more (30 credits of) graduate behaviorology courses beyond the behaviorology m.a. degree along with 48 more credits, over at least two years, with at least 36 of these 48 credits in behaviorology laboratory research and 12 of these 48 credits in behaviorology teaching. A 12-credit dissertation would cap this effort for a total of 120 graduate credits.

Conclusion

Whether or not any college or university, or which ones, can overcome the continued cultural, anti-science and inherent institutional resistance to installing properly labeled behaviorology programs and departments, and when, is a question that may inexorably be linked to the future of humanity. Fraley and Ledoux described this connection in a paper decades ago (in 1992; see Fraley & Ledoux, 2015; also see Ledoux, 2014, 2017, & 2018, as well as the "Wanted Poster" at the end of Ledoux, 2015c).

Annotated Text Resources

Note: Study Question books appear immediately under their associated texts. Watch for announcements of availability for "in progress" and additional books in NEWS at www.behaviorology.org (with details there, under BOOKS).

Cryer, C. & O'Heare, J. (in progress). *Functional Behavior Assessment and Ethics*. Ottawa, CANADA: BehaveTech Publishing. (This book contains its study questions).

Cohen, H. & Filipczak, J. (1989). *A New Learning Environment*. Boston, MA: Authors Cooperative. This book applies behaviorological science at a youth penal rehabilitation institution.

*(Study Questions... in progress.)

Daniels, A. C. & Daniels, J. E. (2004). *Performance Management (Fourth Edition)*. Tucker, GA: Performance Management Publications. This book applies behaviorological science in business and industry.

*(Study Questions... in progress.)

Fraley, L. E. (2008). *General Behaviorology: The Natural Science of Human Behavior*. Canton, NY: ABCs. This is the 1,600-page, 30-chapter, graduate-level textbook that systematically and comprehensively presents most of the major facets of the separate, independent, natural science discipline of behaviorology. (In a ph.d. program, this text would likely work best if covered across three courses, instead of the two courses as in the one-year m.a. program described here.)

*O'Heare, J. (2013). *Study Questions for Fraley's General Behaviorology*. Ottawa, CANADA: BehaveTech Publishing.

- Fraley, L. E. (2012). *Dignified Dying—A Behaviorological Thanatology*. Canton, NY: ABCs.
- *Raymond, L. (2015). *Study Questions for Lawrence Fraley's Dignified Dying—A Behaviorological Thanatology*. Canton, NY: ABCs.
- Fraley, L. E. (2013). *Behaviorological Rehabilitation and the Criminal Justice System*. Canton, NY: ABCs.
- *Raymond, L. (2015). *Study Questions for Lawrence Fraley's Behaviorological Rehabilitation and the Criminal Justice System*. Canton, NY: ABCs.
- Holland, J. G. & Skinner, B. F. (1961). *The Analysis of Behavior*. New York: McGraw-Hill. This book is the original comprehensively programmed text; the authors successfully applied the laws of behavior that it teaches to its design and use. (The B. F. Skinner Foundation now holds the copyright.) For best results, use it in conjunction with this article: Shuler, M. & Ledoux S. (2017). Behaviorology terminology adjustments for *The Analysis of Behavior* by Holland and Skinner. *Journal of Behaviorology*, 20 (1), 3–15.
- Latham, G. I. (1994). *The Power of Positive Parenting*. Logan, UT: P & T ink.
- *Ledoux, S. F. (2001). *Study Questions for Glenn Latham's The Power of Positive Parenting*. Canton, NY: ABCs.
- Latham, G. I. (1998). *Keys to Classroom Management*. Logan, UT: P & T ink.
- *Ledoux, S. F. (2000). *Study Questions for Glenn Latham's Keys to Classroom Management*. Canton, NY: ABCs.
- Ledoux, S. F. (Assembler, from a 1978 book). (2012). *Behaviorology Majors Make a Difference*. Canton, NY: ABCs. (This book contains its study questions).
- Ledoux, S. F. (2014). *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems*. Ottawa, CANADA: BehaveTech Publishing.
- *Ledoux, S. F. (2014). *Study Questions for Running Out of Time—Introducing Behaviorology to Help Solve Global Problems*. Canton, NY: ABCs.
- Ledoux, S. F. (2015). *Origins and Components of Behaviorology—Third Edition*. Ottawa, CANADA: BehaveTech Publishing.
- *Ledoux, S. F. (2015). *Study Questions for Origins and Components of Behaviorology—Third Edition*. Canton, NY: ABCs.
- Ledoux, S. F. (2017). *What Causes Human Behavior—Stars, Selves, or Contingencies?* Ottawa, CANADA: BehaveTech Publishing.
- Maurice, C., Green, G., & Luce, S. C. (Eds.). (1996). *Behavioral Intervention for Young Children with Autism*. Austin, TX: Pro-Ed.
- *Ledoux, S. F. (2003). *Study Questions for Maurice et al's Behavioral Intervention for Young Children with Autism*. Canton, NY: ABCs.
- Maurice, C. (1994). *Let Me Hear Your Voice*. New York: Ballantine Books.
- Mountain States Employers Council (MSEC) & Nicoletti-Flater Associates. (1994). *Violence Goes to Work*. Denver, CO: MSEC.
- NYS Department of Health Early Intervention Program. (1999 [Publication No. 4216]). *Clinical Practice Guideline Quick Reference Guide (for Parents and Professionals): Autism / Pervasive Developmental Disorders*. Albany, NY: New York State Department of Health. Download/print a copy of this small book (from <http://www.health.state.ny.us/publications/4216.pdf>).
- O'Heare, J. (2015). *The Science and Technology of Animal Training*. Ottawa, CANADA: BehaveTech Publishing.
- *O'Heare, J. (2015). *Study Questions for The Science and Technology of Animal Training*. Ottawa, CANADA: BehaveTech Publishing.
- Peterson, N. & Ledoux, S. F. (2014). *An Introduction to Verbal Behavior—Second Edition*. Canton, NY: ABCs. Peterson originally published the first edition of this book in 1978.
- Sidman, M. (2001). *Coercion and its Fallout—Revised Edition*. Boston, MA: Authors Cooperative.
- *Kopp, J. (2001). *Coercion and its Fallout Study Guide*. Boston, MA: Authors Cooperative.
- Skinner, B. F. (1948). *Walden Two*. New York: Macmillan. (In 1976 Macmillan issued a new edition with Skinner's introductory essay, "Walden Two Revisited.")
- *Ledoux, S. F. & several unrecorded other authors. (1976–2012). *Study Questions for Skinner's Walden Two*. Canton, NY: ABCs (available for free reprinting; see BOOKS at www.behaviorology.org).

- Skinner, B. F. (1974). *About Behaviorism*. New York: Knopf.
- Wyatt, W. J. (1997). *The Millennium Man*. Hurricane, WV: Third Millennium Press.
- *Ledoux, S. F., Wyatt, W. J., & Bias, E. F. (1999). *Study Questions for W. Joseph Wyatt's The Millennium Man*. Canton, NY: ABCs
- Zinna, K. A. (1999). *After Columbine*. Silverthorne, CO: Spectra Publishing.
- *Ledoux, S. F. (2000). *Study Questions for Kelly Zinna's After Columbine*. Canton, NY: ABCs.✧
- Ledoux, S. F. (2015c). *Origins and Components of Behaviorology—Third Edition*. Ottawa, CANADA: BehaveTech Publishing.
- Ledoux, S. F. (2017). *What Causes Human Behavior—Stars, Selves, or Contingencies?* Ottawa, CANADA: BehaveTech Publishing.
- Ledoux, S. F. (2018). *Science Works on Human Behavior*. Ottawa, CANADA: BehaveTech Publishing (a book of diverse readings).
- Ledoux, S. F. & O’Heare, J. (2015/2018). Elements of the ongoing history of the behaviorology discipline. In S. F. Ledoux. *Origins and Components of Behaviorology—Third Edition* (pp. 259–296). Ottawa, CANADA: BehaveTech Publishing. Reprinted (2018) in two parts: Part I in *Journal of Behaviorology*, 21 (1), 13–26; Part II in *Journal of Behaviorology*, 21 (2), 3–16.
- O’Heare, J. (2018). The International Behaviorology Institute certificate programs. *Journal of Behaviorology*, 21 (1), 3–12.
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Quote by B. F. Skinner on the Misunderstood Value of Behavior Science

In *About Behaviorism* Skinner wrote: “Those who say that a science of behavior is oversimplified and naïve usually show an oversimplified and naïve knowledge of the science, and those who claim that what it has to say is either trivial or already well known are usually unfamiliar with its actual accomplishments.”

(From the email that Julie Vargas sent on 2017 November 18 announcing that the “Issue III, 2017” issue of *Operants* is available).

NOTE: This issue of *Operants* is available from the B. F. Skinner Foundation (at www.bfskinner.org) and contains the article by Joe Morrow explaining the appropriateness of considering the label, Behavioral Materialism, as a reasonable replacement for the label, Radical Behaviorism.

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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.

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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 and 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 uncommitted to any particular, formal "style"), and (c) should come from a Word-format document 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. *Work all footnote material into the text.* 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).

Note: Authors' views need not coincide with official positions of TIBI, and authors retain copyrights.☺

TIBIA Membership Costs & Criteria & Benefits

The intrinsic value of TIBIA membership rests on giving the member status as a contributing part of an organization helping to extend and disseminate the findings and applications of the natural science of behavior, behaviorology, for the benefit of humanity. The levels of TIBIA membership include one “free” level and four paid levels, which have increasing amounts of basic benefits. The four annual paid membership levels are Student, Affiliate, Associate, and Advocate. The Student and Affiliate are non-voting categories, and the Associate and Advocate are voting categories. All new members are admitted provisionally to TIBIA at the appropriate membership level. Advocate members consider each provisional member and then vote on whether to elect each provisional member to the full status of her or his membership level or to accept the provisional member at a different membership level. Here are all the membership levels and their criteria and basic benefits (with dues details under *TIBIA Membership Cost Details* on the application-form page):

Free-online membership. Online visitors receive access (a) to past *Behaviorology Today* and *Journal of Behaviorology* articles and issues, (b) to accumulating news items, (c) to Institute information regarding TIBI Certificates and course syllabi, (d) to selected links of other organizations, and (e) to other science and organization features.

\$20 Behaviorology Student membership (requires completed paper application, co-signed by department chair or advisor, and annual dues payment). Admission to TIBIA in the Student membership category is open to all undergraduate or graduate students in behaviorology or in an acceptably appropriate area. Benefits include *all* those from the previous membership level plus these: (a) a subscription to—and thus immediate postal delivery of—each new paper-printed issue of *Journal of Behaviorology* (ISSN 1536-6669), (b) access to special organizational activities (e.g., invitations to attend and participate in, and present at, TIBI conferences, conventions, workshops, etc.) and (c) access to available TIBIA member contact information.

\$40 Affiliate membership (requires completed paper application and annual dues payment). Admission to TIBIA in the Affiliate membership category is open to all who wish to follow disciplinary developments, maintain

contact with the organization, receive its publications, and participate in its activities, but who are neither students nor professional behaviorologists. Benefits include *all* those from the previous levels plus these: Access both to additional activity options at the interface of their interests and behaviorology, and to advanced membership levels for those acquiring the additional qualifications that come from pursuing behaviorology academic training. On the basis of having earned an appropriate degree or TIBI Certificate, Affiliate members may apply for, or be invited to, Associate membership.

\$60 Associate membership (requires completed paper application and annual dues payment). This level is only available to qualifying individuals. Admission to TIBIA in the Associate membership category is open to all who are not students, who *document a behaviorological repertoire at or above the masters level* (such as by attaining a masters-level TIBI Certificate or a masters degree in behaviorology or in an accepted area) and who maintain a good record—often typical of “early-career” professionals—of professional activities or accomplishments of a behaviorological nature that support the integrity of the organized, independent discipline of behaviorology including its organizational manifestations such as TIBI and TIBIA. Benefits include *all* those from the previous levels plus TIBIA voting rights, and access to contributing by accepting appointment to a TIBIA or TIBI position of interest. On the basis of documenting a behaviorological repertoire at the doctoral level, an Associate member may apply for, or be invited to, Advocate membership.

\$80 Advocate membership (requires completed paper application and annual dues payment). This level is only available to qualifying individuals. Admission to TIBIA in the Advocate membership category is open to all who are not students, who *document a behaviorological repertoire at the doctoral level* (such as by attaining a doctoral-level TIBI Certificate or a doctoral degree in behaviorology or in an accepted area), who maintain a good record of professional activities or accomplishments of a behaviorological nature, and who demonstrate a significant history—usually typical for experienced professionals—of work supporting the integrity of the organized, independent discipline of behaviorology including its organizational manifestations such as TIBI and TIBIA. Benefits include *all* those from the previous levels plus access to contributing by accepting election to a TIBIA or TIBI position of interest.☺

TIBIA Membership Cost Details

Establishing the annual dues structure for the different membership categories takes partially into account, by means of percentages of annual income, the differences in income levels and currency values among the world's various countries and economies. Thus, the annual dues for each membership (or other) category are:

| CATEGORY | DUES (in US dollars)* |
|----------------|---|
| Student member | The lesser of 0.1% of annual income, or \$20.00 |

| | |
|------------------|---|
| Affiliate member | The lesser of 0.2% of annual income, or \$40.00 |
| Associate member | The lesser of 0.3% of annual income, or \$60.00 |
| Advocate member | The lesser of 0.4% of annual income, or \$80.00 |

Member of Board of Directors:
The lesser of 0.6% of annual income, or \$300.00

*Minimums: \$20 Board Member; \$10 others

(Retired Associate, Advocate, or Board Members:
... 50% less)

TIBIA MEMBERSHIP APPLICATION FORM

(FOR CONTRIBUTIONS, A FORM ENSURES ACKNOWLEDGEMENT BUT IS NOT REQUIRED.)

Copy and complete this form (please type or print)—for membership, contributions, back issues, or subscriptions—and send it with your check (made payable to TIBIA in US dollars) to the TIBIA treasurer at this address:

Mr. Chris Cryer
TIBIA Treasurer
406 North Meadow Drive
Ogdensburg NY 13669
USA

Check if applies:
Contribution:
Subscriptions*:
Back issues:**
✻ Vol. __, # __
✻ Vol. __, # __

Name: _____

Membership (category): _____

Office Address: _____

Amount enclosed: us\$ _____

Home Address: _____

Office Phone #: _____

Home Phone #: _____

FAX #: _____

CHECK PREFERRED MAILING ADDRESS:

E-mail: _____

Office: Home:

Degree/Institution:*** _____

Sign & Date: _____

*Subscriptions are US\$40 annually, the same as affiliate membership.

**Back issues: US\$20 each.

***For Student Membership:

I verify that the above person is enrolled as a student at: _____

Name & Signature of advisor or Dept. Chair: _____

TIBI/TIBIA Purposes*

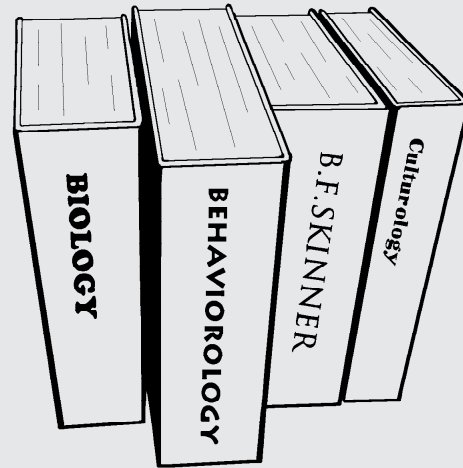
T_I**B**_I, as a non-profit educational corporation, is dedicated to many concerns. TIBI is dedicated to teaching behaviorology, especially to those who do not have university behaviorology departments or programs available to them. TIBI is also dedicated to expanding and disseminating the behaviorological literature at least through the fully peer-reviewed *Journal of Behaviorology* (originally called *TIBI News Time* and then *Behaviorology Today*) with editors being appointed by the TIBI Board of Directors, usually from among the TIBIA Advocate members. TIBI is a professional organization also dedicated to organizing behaviorological scientists and practitioners into an association (The International Behaviorology Institute Association—TIBIA) so they can engage in coordinated activities that carry out the purposes of TIBI/TIBIA. These activities include (a) encouraging and assisting members to host visiting scholars who are studying behaviorology as well as holding conventions and conferences; (b) enabling TIBI faculty to arrange or provide training for behaviorology students; and (c) providing TIBI certificates to students who successfully complete specified behaviorology curriculum requirements). And TIBI is a professional organization dedicated to representing and developing the philosophical, conceptual, analytical, experimental, and technological components of the discipline of behaviorology, the comprehensive natural science discipline of the functional relations between behavior and independent variables including determinants from the environment, both socio-cultural and physical, as well as determinants from the biological history of the species. Therefore, recognizing that behaviorology's principles and contributions are generally relevant to all cultures and species, the purposes of TIBI and TIBIA are:

A. to foster the philosophy of science known as radical behaviorism;

- B. to nurture experimental and applied research analyzing the effects of physical, biological, behavioral, and cultural variables on the behavior of organisms, with selection by consequences being an important causal mode relating these variables at the different levels of organization in the life sciences;
- C. to extend technological application of behaviorological research results to areas of human concern;
- D. to interpret, consistent with scientific foundations, complex behavioral relations;
- E. to support methodologies relevant to the scientific analysis, interpretation, and change of both behavior and its relations with other events;
- F. to sustain scientific study in diverse specialized areas of behaviorological phenomena;
- G. to integrate the concepts, data, and technologies of the discipline's various sub-fields;
- H. to develop a verbal community of behaviorologists;
- I. to assist programs and departments of behaviorology to teach the philosophical foundations, scientific analyses and methodologies, and technological extensions of the discipline;
- J. to promote a scientific "Behavior Literacy" graduation requirement of appropriate content and depth at all levels of educational institutions from kindergarten through university;
- K. to encourage the full use of behaviorology as the essential scientific foundation for behavior related work within all fields of human affairs;
- L. to cooperate on mutually important concerns with other humanistic and scientific disciplines and technological fields where their members pursue interests overlapping those of behaviorologists; and
- M. to communicate to the general public the importance of the behaviorological perspective for the development, well-being, and survival of humankind.

*Adapted from the 2017-updated TIBI By-Laws. ☺

ABOUT
BEHAVIOROLOGY,
TIBI, AND
Journal of Behaviorology



BEHAVIOROLOGY IS AN INDEPENDENTLY ORGANIZED DISCIPLINE FEATURING THE NATURAL SCIENCE OF BEHAVIOR. BEHAVIOROLOGISTS STUDY THE FUNCTIONAL RELATIONS BETWEEN BEHAVIOR AND ITS INDEPENDENT VARIABLES IN THE BEHAVIOR–DETERMINING ENVIRONMENT. BEHAVIOROLOGICAL ACCOUNTS ARE BASED ON THE BEHAVIORAL CAPACITY OF THE SPECIES, THE PERSONAL HISTORY OF THE BEHAVING ORGANISM, AND THE CURRENT PHYSICAL AND SOCIAL ENVIRONMENT IN WHICH BEHAVIOR OCCURS. BEHAVIOROLOGISTS DISCOVER THE NATURAL LAWS GOVERNING BEHAVIOR. THEY THEN DEVELOP BENEFICIAL BEHAVIOROLOGICAL–ENGINEERING TECHNOLOGIES APPLICABLE TO BEHAVIOR–RELATED CONCERNS IN ALL FIELDS INCLUDING CHILD REARING, EDUCATION, EMPLOYMENT, ENTERTAINMENT, GOVERNMENT, LAW, MARKETING, MEDICINE, AND SELF–MANAGEMENT.

BEHAVIOROLOGY FEATURES STRICTLY NATURAL ACCOUNTS FOR BEHAVIORAL EVENTS. IN THIS WAY BEHAVIOROLOGY DIFFERS FROM DISCIPLINES THAT ENTERTAIN FUNDAMENTALLY SUPERSTITIOUS ASSUMPTIONS ABOUT HUMANS AND THEIR BEHAVIOR. BEHAVIOROLOGY EXCLUDES THE MYSTICAL NOTION OF A RATHER SPONTANEOUS ORIGINATION OF BEHAVIOR BY THE WILLFUL ACTION OF ETHEREAL, BODY–DWELLING AGENTS CONNOTED BY SUCH TERMS AS *mind*, *psyche*, *self*, *muse*, OR EVEN PRONOUNS LIKE *I*, *me*, AND *you*.

AS PART OF THE ORGANIZATIONAL STRUCTURE OF THE INDEPENDENT NATURAL SCIENCE OF BEHAVIOR, *The International Behaviorology Institute* (TIBI), A NON–PROFIT ORGANIZATION, EXISTS (A) TO ARRANGE PROFESSIONAL ACTIVITIES FOR BEHAVIOROLOGISTS AND SUPPORTIVE OTHERS, AND (B) TO FOCUS BEHAVIOROLOGICAL PHILOSOPHY AND SCIENCE ON A BROAD RANGE OF CULTURAL CONCERNS. AND *Journal of Behaviorology* IS THE REFERRED JOURNAL OF THE INSTITUTE. JOURNAL AUTHORS WRITE ON THE FULL RANGE OF DISCIPLINARY TOPICS INCLUDING HISTORY, PHILOSOPHY, CONCEPTS, PRINCIPLES, AND EXPERIMENTAL AND APPLIED RESEARCH. JOIN US AND SUPPORT BRINGING THE BENEFITS OF BEHAVIOROLOGY TO HUMANITY. (CONTRIBUTIONS TO TIBI OR TIBIA—THE PROFESSIONAL ORGANIZATION ARM OF TIBI—ARE TAX DEDUCTIBLE.)☺

SOME TIBI BOARD MEMBER CONTACTS:

Chris Cryer, M.A., BCBA, LBA (TIBI Treasurer)
St. Lawrence NYSARC
Canton NY USA
ccryer@slnysarc.org

John B. Ferreira, Ph.D., LPC
Ess-Plus Behavioral Counseling (Retired)
Tucson AZ USA
jbf721@aol.com

Lawrence E. Fraley, Ed.D.
Professor (Retired)
West Virginia University at Morgantown USA
lfraley@citlink.net

Bruce Hamm, M.A., BCBA (JoB Editor)
Director, Blackbird Academy of Childhood Education
Vancouver BC CANADA
brucehamm@me.com

Stephen F. Ledoux, Ph.D. (JoB Co-Managing Editor*)
Professor Emeritus, SUNY-Canton USA
ledoux@canton.edu

Werner Matthijs, M.A.
Team Coördinator van de Toegepaste Gedragsologie
Universitair Psychiatrisch Centrum Sint Kamillus,
Bierbeek Belgium (Retired)
werner-matthijs@hotmail.com

James O’Heare, DLBC (TIBI Board Chair)
Companion Animal Sciences Institute
Ottawa, Ontario CANADA
jamesoheare@gmail.com

Katie Rinald, M.A., BCBA
Blackbird Academy of Childhood Education
Vancouver BC CANADA
katierinald@gmail.com

***Mike Shuler** (JoB Co-Managing Editor)
Engineer (Retired)
Peru IN USA
shuler@comcast.net

Journal of Behaviorology

Bruce Hamm, BCBA, Editor
2639 Trinity Street
Vancouver BC V5K 1E5
CANADA

