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**N**OTE: 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***

**James O’Heare**

*Companion Animal Sciences Institute*

(Action Editor for this issue)

This issue of the *Journal of Behaviorology* contains an article that Stephen Ledoux drafted through consultations with TIBI Board members. The Board passed the longer version that had details that were unneeded for appearance here. The other article is by Lawrence Fraley.

Ledoux’s *An Applied Behaviorology Credential (ABC) for Interested BCBA’s* is an excellent contribution to the behaviorological community as it provides a way to bridge the gap between behaviorology and behavior analysis. This contribution has gone through extensive peer review since it was vetted significantly prior to undergoing the *Journal of Behaviorology* peer-review process, and it is my hope that a great many behavior analysts take advantage of this credential.

Fraley’s article, *Why the Delays in Advancing the Natural Science of Behavior*, poses an excellent question indeed, and I hope it prompts readers to find creative ways to help advance the natural science of behavior. It is another important and timely contribution from one of those who have already gone well beyond their “fair share” of contributing to behaviorology.

In anticipation, another article by Fraley, *Cultural Seduction Considered via The Natural Science of Behavior*, has passed peer review and will appear in the next issue of *Journal of Behaviorology*. This article contributes to the discussion of behaviorology’s place in the cultural community. In particular, it draws attention to the distinction between a naturalist and a mystical set of philosophical assumptions, yet another thought-provoking contribution to the behaviorological discussion. Of interest to me personally is the discussion on human exploitation of other species. The cultural seduction of religion is another extremely important topic as well. This detailed discussion is a major contribution to understanding the repertoire evolution within social communities. Watch for it.

I hope the reader will find the articles in this issue as fascinating and useful as I did.

James O’Heare, DLBC  
Action Editor ☺

## *An Applied Behaviorology Credential (ABC) for Interested BCBAs\**

*Abstract:* Drafted after discussion among past TIBI Chairs, this document discusses the effects, and how to improve them, of some contingencies that have shaped educational programs, particularly MA/MS degrees, for people studying to become professional Applied Behavior Analysts with Board Certified Behavior Analyst (BCBA) certification from the Behavior Analyst Certification Board (BACB). Some of these contingencies have pushed some of these programs to emphasize the minimum of content coverage that can meet BACB task and hours requirements and get the students through the BACB exam to earn them the BCBA certification. Meanwhile, other programs, most faculty, and some stakeholder professional organizations, have increasingly stressed that the required training for BCBA status constitutes minimum training for professional Applied Behavior Analysts. Recognizing that improvements in academic training programs generally accrue slowly and so are of limited help when time is of the essence (e.g., time to expand the science and its contingency engineering to help also solve global problems in the recognized, required time frame) TIBI has organized, and now offers (with some details provided here) a credential program through which interested BCBAs can expand on their basic educational programs for their benefit and the benefit of their clients, their profession, and society. TIBI calls this inexpensive and basically online, ten-course program an *Applied Behaviorology Credential for BCBAs* (i.e., an ABC for BCBAs). Some courses in some BCBA MA/MS programs qualify as equivalent to some courses in this credential program thereby reducing the number of courses some BCBAs need to earn this credential.

Concerning The International Behaviorology Institute (TIBI) and Board Certified Behavior Analysts (BCBAs), the original draft of this paper occurred after discussions among past TIBI Chairs. The TIBI Board passed the paper in establishing an *Applied Behaviorology Credential for BCBAs* (i.e., an ABC for BCBAs). The comments of reviewers have led to some beneficial changes in the paper for this version produced for publication in the *Journal of Behaviorology*.

As in the original paper, this paper contains two parts and two appendices. The first part features some reasons for the considered credential. The second part offers an overview of the required courses and their mechanics. Of the two appendices, one provides the credential courses'

descriptive information, while the other provides some applicable TIBI policies and procedures.

### **Some Reasons for an Applied Behaviorology Credential for BCBAs**

The natural science of behavior is a comprehensive discipline. It contains a full complement of experimental, applied, theoretical, practical, historical and philosophy-of-science components interlaced across the range of principles, methods, concepts, interventions, extensions, elaborations, implications, and interpretations that are all related to both basic and applied research as well as

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\*This document was drafted for the TIBI Board by Stephen F. Ledoux. The TIBI Board passed the original version of this document as part of a motion at its 2020 annual meeting. The motion read "Move that the TIBI Board both accepts the attached proposal... for TIBI to offer an 'Applied Behaviorology Credential (ABC) for BCBAs,' and authorizes action to implement it (e.g., appointing a TIBI Equivalency Committee [TEC] to consider potential equivalent courses...)." Improvements based on further peer review have made the present version more appropriate for journal appearance where it provides information more widely about the credential that it describes.

Address correspondence regarding this paper to any TIBI Board member; find email addresses on the CONTACT page at [www.behaviorology.org](http://www.behaviorology.org) (e.g., [ledoux@canton.edu](mailto:ledoux@canton.edu)) where the BOOKS and JOURNAL pages also provide details on many of the references plus many other related resources.

*Key words:* Education, credentials, behaviorology, The Experimental Analysis of Behavior (TEAB), Applied Behavior Analysis (ABA), professional practice.

practice in a wide range of socially and culturally valuable areas. The members of TIBI, and others, call this discipline “behaviorology.” Society expects, and has a right to expect—as in all other science/engineering disciplines—that all post-graduate scientists and practitioners, regardless of whether they emphasize basic research or application research, or practice, have a substantive familiarity with all components of their discipline.

While all components of the natural science of behavior originated in “The Experimental Analysis of Behavior” that B. F. Skinner’s research initiated, we generally use the discipline’s current overall name, “behaviorology,” to emphasize the experimental-science component, even though it includes the applied-science component. Behaviorologists originally engaged and supported an earlier name, “behavior analysis.” The failure, however, of efforts to change psychology—within whose walls behavior analysts originally worked—into a natural science, and traditional psychologists’ claim that natural-science “behavior analysis” was a part of traditional, non-natural science psychology, reduced the viability of this option (see Fraley & Ledoux, 1992/2015).

Meanwhile we often call the applied-science component simply “applied behaviorology” although several other names are in common use; all of them reflect the inclusion of the experimental-science components as the foundation of applied, practical work. Some other names for the applied-science component include Applied Behavior Analysis (ABA) and contingency engineering.

A professional stance, commonly conditioned in behaviorology courses and programs, both in and beyond TIBI, holds that practitioners should presume that their professional repertoire achieves full initial adequacy only when they have basically covered all parts of the experimental-science and applied-science components. An examination of the topics that this credential’s courses cover reveals many topics that remain essential parts of the natural science of behavior that make only irregular appearances among the topics covered in some BCBA programs. This provides the most fundamental reason for TIBI’s offering of this *Applied Behaviorology Credential for BCBAs* (ABC for BCBAs); this credential makes these topics easily and systematically available, within their full, original context, to interested BCBAs.

While most of this paper provides details about the ABC for BCBAs, the status of this *credential* as a coursework-based—not exam-based—credential raises a question. Why *not* a Board, and an Exam, for a *certification* like a “Board Certified Applied Behaviorologist” instead of a coursework-based credential? Part of an answer is that a “Board and Exam” structure and process would not immediately support BCBA programs’ move toward more complete educational coverage of the science that supports applied research and intervention practices. Another

part of an answer concerns behaviorologists currently lacking the resources and expertise to set up that kind of structure and process. Such an effort would require large and ongoing legal and management personnel, skills, efforts, and funding. While these constraints could change in the future, the public—society—needs many more fully trained BCBAs now, for *all* the areas in which contingencies are causing concern about behaviors (e.g., parenting, regular and special education, behavioral medicine, green contingency engineering, dignified dying, companion animal training, behavioral safety, business and organizational management, penal rehabilitation, and autism and developmental disabilities interventions, among others).

In TIBI’s view a better use of current resources, then, involves offering the ABC for BCBAs. This credential might not only support the move of BCBAs toward more complete educational coverage of the science that grounds applied research and intervention practices, but it might also provide a relevant avenue to continuing, with the increasing collaboration of fully informed applied professionals, to contribute—more so than TIBI’s current certificates have so far provided—to the beneficial evolution of the structures and processes of the Behavior Analyst Certification Board (BACB) and its BCBA certification exam, program accreditation, and CEU (Continuing Education Unit) options, to the increasing benefit of clients, practitioners, and society. By being explicitly arranged for BCBAs, the resulting contingencies can produce predictable results that are beneficial to everyone.

An important component of this credential also involves TIBI expanding its course offerings to cover more options, especially with respect to graduate-level versions of some of its undergraduate-level courses. Vital areas that still need course coverage, as soon as members with appropriate expertise are available, include behavioral medicine and behavioral safety among others.

### *Emphasizing “for BCBAs”*

Furthermore, this credential is exclusively for BCBAs (a) because TIBI already covers other study needs with its regular range of TIBI certificates (as described on [www.behaviorology.org](http://www.behaviorology.org)) and (b) because some BCBAs report getting coincidentally conditioned in their MA (Master of Arts) and MS (Master of Science) degree programs to think that they have been taught all they should know about the science that they are going to be allowed to practice. Does this phenomenon occur more widely? In any case it happens despite the presumably regular and usual admonishments of most program faculty that only after graduating are they ready to begin really expanding their repertoires in the science of their professional activities.

Given the focus explicitly on BCBAs and contingencies to interest them, this credential includes policies and



procedures separate from, or at least in addition to, the policies and procedures for TIBI's other certificate programs (see Appendix 2). For example, such policies and procedures would cover the question of grandfathering into the credential or one or another of its courses due to course equivalencies. Another point involves very attractive fees—relative to other TIBI programs, and the programs of other educational units—for the courses for this credential (e.g., \$100 per course) which would just go to the TIBI professor working the course with the individual taking it, because TIBI acknowledges intellectual and organizational benefits from the increased professional environment of more BCBA's being more familiar with the science that they are practicing. This could also better evoke interest in the benefits of professional participation in the activities of organizations like TIBI. More importantly the long-term improvements in the knowledge and skill sets of practitioners, from completing this credential and from greater professional participation, benefits scientists, practitioners, clients, society, the planet, indeed everyone.

A complication concerns differing views on what constitutes an appropriate, rather than a basic, amount of scientific and practical training to properly enable effective, scientifically grounded and data-based applied interventions. The BACB has established well-supported standards for what constitutes a basic amount of scientific and practical training. With respect, however, to what constitutes an appropriate amount of scientific and practical training, behaviorology is an elaborately complex field of study, and behaviorologists would agree that to operate effectively in the field of behavior one needs a lot of science training, as is also true of engineers from physics, chemistry, or biology. Other contingencies, however, could be operating in the BCBA community, contingencies that could lead to minimal rather than thorough training, at least at the MA/MS-degree level.

### ***Why Bother with an “ABC for BCBA’s”***

Why would TIBI members go through all the bother to sponsor this credential? Because some observable and logically analyzable contingencies have operated on some ABA training programs with effects that TIBI members cannot see as positive (with no program naming being relevant). These contingencies, involving administrative pressures and resource allocations, cause growing concerns that they can induce requiring a set minimum number of courses to cover a set minimum amount of material in a minimum amount of time, relieving administrative pressures and saving resources. But these outcomes may not be best for the students and their future careers. These are the minimums to prepare good students to qualify for, take, and pass the BACB certification exam to earn their BCBA certification

and begin professional practice. These requirements earn the “minimum” descriptor, because so much of the natural science of behavior that is typically taught at the undergraduate level to behaviorology majors (who also seek behavior-practice jobs) is typically not thoroughly taught in the BCBA-Exam, MA/MS preparation programs, a conclusion that stems from considering the contents of the credential's courses. The amount that might be taught mostly comes under a requirement for 90 hours—two courses—for the “conceptual domain” and 45 hours—one course—for the experimental domain. While the names and hours have changed over the years, and will again, these amounts are still minimum, not thorough. TIBI members bother with this credential, because they see thoroughness as important to our science, our practice, and everyone's future.

Yet so many students enter the MA/MS preparation programs without having first majored in behaviorology; thus, many have not really covered all of the basics of the natural science of behavior. Enabling practicing professionals to cover the “beyond minimum” content of their science provides a good reason why TIBI members would bother to offer this credential. It helps save our practice while other efforts—to expand explicitly and accurately labeled behaviorology courses, programs, and departments in colleges and universities—help save our science (see Ledoux, 2020) including its basic research laboratories.

### ***Reducing Negative Effects of Typical Educational Contingencies***

The requirements for preparing students for the BACB certification exam are laid out in lists of well-designed task areas, with specified amounts of devoted classroom time, to assure that prospective exam takers have covered the exam-required content. But is this really enough, given all the other relevant basic material in the science that its practitioners, it engineers, should also know at the MA/MS level if the resulting practitioners are to meet, not professional minimum standards, but the standards representing what the general public has a right reasonably to expect in comparison with the usual standards and scientific material competencies of the practitioners, the engineers, of other natural science disciplines? Some might argue that the science that they acknowledge as informing ABA practice is simpler, less extensive, and easier to master than the natural sciences informing other applied or engineering disciplines. Behaviorologists instead find that the full natural science of The Experimental Analysis of Behavior that informs applied practice remains just as complex, extensive, and difficult to master as the natural sciences informing other applied or engineering disciplines (e.g., see Fraley, 2008, or Ledoux, 2014).

What else to cover (beyond BACB exam requirements) and how deeply, also pose relevant questions, some of

which may have an ethical angle. Some might think that BCBAs practicing in areas not thoroughly covered in BCBA programs is unethical. Others wonder if covering so few areas in these programs is ethical. Some think that BCBA programs should cover more areas, even if that means less thoroughly. Others think that different areas need different amounts of coverage according to their own circumstances. While finding an appropriate path through these conundrums is difficult, we must try, and the results will shape later appropriate changes and improvements, for we are not above nature's laws. TIBI members agree that one should have completed some study of an area before practicing in it. This credential provides some coverage of several applied areas that each need more trained practitioners.

Thus the "ABC for BCBAs" credential enables much appropriate repertoire expansion. This credential broadens the intervention repertoires of BCBAs who complete the credential so that they can more quickly and effectively operate not only in the areas of their initial training, but also in the wider range of intervention areas in which society needs many of them to operate.

Part of TIBI's organizational responsibility involves providing courses covering these topics for everyone who wants them. In these courses TIBI tries to address the basics of all the expected topics, encompassing not only review of the basics but also coverage of all the main principles, methods, concepts, and practices of the natural science of behavior along with its main extensions, elaborations, implications, interpretations, application areas, history, and philosophy of science, all as provided by behaviorological authors in their textbooks on these topics for use in such courses (e.g., see the course and textual requirements of application-area courses in this credential).

### ***BCBAs Deserve More***

As working professional, BCBAs deserve as many options as possible for continuing their practical disciplinary education. Such options can include this credential as well as CEU courses. Whether or not TIBI itself offers CEUs, however, requires actions by other organizations before TIBI can even consider offering them. (This could change. The coursework for this credential could be offered as CEUs, but arranging for it to count that way remains the purview of other organizations. And TIBI remains willing to coordinate with them.) Such contingencies have evoked the design of this credential as a step that might improve the situation on a number of levels.

Many of these MA/MS programs focus mostly on the area of autism and developmental disabilities practices, applications, and interventions. This could lead students to think that these were the only, or the most important, areas of practices, applications, and

interventions. Decades ago this may have been the case, but many other areas of practice, application, and intervention have developed, and coursework for them has become available. Society needs fully qualified (i.e., Board Certified and beyond) ABA practitioners to work in these areas (e.g., behavioral medicine, green contingency engineering, dignified dying, companion animal training, behavioral safety, business and organizational management, penal rehabilitation). This credential enables BCBAs to engage many of these areas.

This credential also enables BCBAs to engage more of the history as well as more of the quality-controlling philosophy of science of both the experimental and applied research and practice of the natural science of behavior. While we have called this philosophy *radical behaviorism*, some now prefer to call it *behavioral materialism* or *behavioral naturalism* (see Ledoux, 2020).

Some areas in which BCBA training programs already excel include the areas of ethics and ethical training as well as supervised field training and experience. Hence this credential need not emphasize these areas.

### ***Additional Credential Benefits***

In various ways BCBA programs can benefit from certain contingencies occurring, some of which the availability of this credential might provide. These can, over time, induce arranging more coverage through more courses. BCBA program designers have always worked to improve their offerings. The continued growth of long-standing concerns to help solve global problems might bring to these efforts a range of additional supports from BCBA program faculty and students, as well as from members of other concerned scientific disciplines and communities. While ongoing improvement processes continue over the next several decades, this credential can help meet needs in the interim.

Consider the range of applied areas for which one course each could currently be covered by this credential's requirements. These include parenting, regular education, green contingency engineering, dignified dying, companion animal training, business and organizational management, and penal rehabilitation. Additional areas for which courses could (and should) be developed include special education, behavioral medicine, behavioral safety, and others.

When thus more thoroughly trained (i.e., after earning this credential) many BCBAs could also have an easier time coming under contingencies to broaden their professional activities. This could include employment as part of a larger group of professionals, from a range of relevant disciplines, covering a needed area (e.g., dignified dying). Their training programs may or may not be currently able to provide the necessary training. By making this training available through this credential,

TIBI not only contributes to the needed training but also increases accurate understanding about basic science, which supports increases in professional activity.

As a brief, interim summary, the unique contributions that this Certificate can make to the professional repertoires of the practitioners who earn it involve two main areas. BCBA professionals who complete this Certificate gain a more extensive level of understanding and appreciation (a) of the basic science that they are applying and (b) of the range of application areas and of some specific application areas that society needs BCBAs to be able to cover.

To provide details on how these benefits can be accomplished, one could employ a table summarizing various content areas and instructional hours in each area, but that could set up a task list that could cause confusion with the BACB task list. As a program designer, TIBI instead offers here explicit and already university-vetted *courses*, with the kind of syllabi with which every course taker is not only already familiar but which also specifies the resources and response requirements for acceptable course completion, something which task lists properly leave to institutional program designers. Also, any program faculty or administrator, in the role of program designer, can adopt or adapt any of these courses according to their program's circumstances, especially given the explicitly provided details in the syllabus of each course, details far beyond simple course descriptions (e.g., see Ledoux, 2018).

### ***Credential Requirements Model***

BCBA Certification requires certain legally intensive and financially expensive ongoing activities (e.g., administrative structure, test development and administration and evaluation, and support for and tracking of CEUs). On the other hand, a coursework-based *credential* like this need not carry any further, continuous legal or financial burdens for either holders or providers of the credential, because BACB and BCBA professional-behavior maintenance contingencies already cover such concerns quite well.

Instead, the model for this credential was California's "Community College Credentials" which, to earn, only required the completion of coursework, in their case the coursework that earned a master's degree. For example, if someone completed an MA degree in psychology in California then that person could apply for and receive the *California Community College Instructor Credential*.

To earn the "ABC for BCBAs" credential, the only requirement is taking the ten courses of the credential. The predictable overall contingency effects include conditioning not only the behaviors that reflect the courses' contents but also, and automatically, some appropriate and supportive emotional responses (to the

extent allowed by First-Amendment considerations). The contingencies also encourage the behavior of teaching courses, and of taking more courses, *after* earning the credential. Teaching courses and taking more courses as professional development not only further expands knowledge and skill repertoires but also accumulates toward the most complete education and training in the full (and, of course, growing) range of expertises in behaviorology and its applied contingency-engineering areas, perhaps represented by other TIBI certificates that build, through several steps, right up to the DLBC (Doctoral Level Behaviorology Certificate). This is easier if the coursework for, and after, this credential also counts as CEUs, a development that benefits from TIBI and the BACB cooperating and coordinating on such development, something that itself needs to develop further.

Consider this summary of the potential impacts of an *Applied Behaviorology Credential for BCBAs*. This credential can, with some interrelations or overlap, (a) strengthen the repertoires connecting experimental science and contingency-engineering across the full range of disciplinary topics (including the extensions, elaborations, implications, and interpretations of the science) in many separate and specific areas of theory and practice, all grounded in behavioral naturalism; (b) provide career-supporting repertoire expansions for BCBAs; (c) lead to expansion of BCBA professional-organization participation, including with organizations like TIBI; and (d) engage more support, from more BCBAs, for more educational offerings of behaviorology courses, programs, and even departments—especially with separate and independent status—due to any demand pressures that develop from students "seeking" or "expecting" more coverage of behaviorology considerations in CEUs and regular university courses and programs, and so on.

## **ABC for BCBAs Description and Mechanics**

### ***Credential Description***

Having covered an extensive range of related details about the ABC for BCBAs, this section continues with descriptions and mechanics. The basic point of offering this credential is to enable BCBAs to expand their professional repertoire with respect to components of the science that informs their applied practice and thereby increase the effectiveness and range of their successful applied efforts.

The basic prerequisite of enrolling in this solely coursework-based credential is the possession of BCBA certification. A BCBA earns the credential by covering specified topical contents *either* in courses that were



present in the program that prepared the credential enrollee to pass the BCBA certification exam, *or* in courses that the enrollee takes from TIBI. This combination can involve “grandfathering,” which is described in Appendix 2 along with the fees for TIBI’s credential courses.

The topical contents covered in TIBI’s credential courses, ten of which are needed to earn this credential, concern (a) the quality–controlling philosophy of science of both the experimental and applied research and practice of the “natural science of behavior under any name,” which TIBI calls behaviorology, (b) the rest of the science (e.g., the extensions, elaborations, implications, and interpretations of the science) beyond the basic principles, methods, concepts, and practices required for BCBA certification, and (c) several more areas in the extended range of applied behaviorology (i.e., ABA) areas such as parenting, regular education, green contingency engineering, dignified dying, companion animal training, business and organizational management, penal rehabilitation, and so on.

### **Credential Mechanics**

Professionals who have already earned their BCBA certification earn this credential by enrolling in and satisfactorily completing (i.e., with a grade of “A” or “B”) **ten** ordinary but specified three–credit academic courses. Initially the list of courses available for selection includes 11 specified courses, nearly all of which were originally vetted as regularly approved courses in a major state university system, and to which more courses can be added as selections in the future. These initial courses cover two general areas, (a) **Science and Philosophy of Science**, and (b) **Contingency–Engineering Applications**. The simple list of these courses expands into a list with full details in Appendix 1. For convenience, the details in Appendix 1 include the *Journal of Behaviorology* references for the current TIBI syllabi for the courses upon which these credential courses are based. These syllabi provide details shared by both the undergraduate and graduate versions of these courses.

Credential enrollees will complete all four courses in the “Science and Philosophy of Science” area, and six courses from however many are available in the “Contingency–Engineering Applications” area. While the original courses were offered as undergraduate–level courses, for this credential these courses are redeveloped and taught as graduate–level courses. The Appendix–1 listing for each course includes appropriate numbers along with appropriate expansions of the contents, materials, and tasks covered in each course.

Note that “BEHG,” which appears as part of the number for each course, is simply a common, four–letter administrative course designator for catalogs and listings of courses. More specifically it stands for “Behaviorology.”

Here is the simple list of the names and numbers of the currently available credential courses:

### **Science, and Philosophy of Science, Courses (All required)**

BEHG 510: Introduction to Behaviorology I  
 BEHG 511: Introduction to Behaviorology II  
 BEHG 540: Introduction to Verbal Behavior  
 BEHG 550: Behaviorology Philosophy and History

### **Contingency–Engineering Applications Courses (Seven here so far; six required)**

BEHG 500: Child Rearing Principles and Practices  
 BEHG 525: Classroom Management and Preventing School Violence  
 BEHG 530: Companion Animal Training  
 BEHG 535: Performance Management and Preventing Workplace Violence  
 BEHG 555: Behaviorological Thanatology and Dignified Dying  
 BEHG 565: Behaviorological Rehabilitation  
 BEHG 580: Green Contingency Engineering

TIBI will add more courses to the “Contingency–Engineering Applications” area in due time. Courses awaiting development include Behavioral Medicine and Behavioral Safety. (TIBI has a course on autism intervention but it is not offered as part of this credential, because most BCBA training programs already provide much more thorough coverage of this application area.)

## **APPENDIX 1**

### **Information on Credential Courses**

For guidance on enrolling, procuring required materials, and working through courses, as well as general TIBI–credential–related information, see “General parameters and procedures for courses from The International Behaviorology Institute,” which is an article available online at [www.behaviorology.org](http://www.behaviorology.org) in the Spring 2015 issue (Volume 18, Number 2) of *Journal of Behaviorology*.

Also, if any required resource becomes unavailable (e.g., out of print with no other copies available) then the “additional project or paper”—described at the end of the information for each credential course—will need to expand commensurately. Another benefit of these projects or papers is to leave the credential enrollee with potentially publishable manuscripts as a contribution to their discipline.



## Science and Philosophy of Science Courses (All Required)

### BEHG 510 Course Information

BEHG 510 [based on 210: Introduction to Behaviorology I; described in *Journal of Behaviorology*, Volume 19, Number 2 (Fall 2016) 6–8]:

**Title:** BEHG 510 Introduction to Behaviorology I

**Credits:** 3 TIBI credits

**Prerequisites:** None (except BCBA for AB Credential)

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3–15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 510 Introduction to Behaviorology I* is the first of a two-course sequence (BEHG 510 & BEHG 511) that begins to provide with an initial introduction to various interrelated components of the natural science of behavior, behaviorology. Going beyond basic terminology, these components involve 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 include relations with physiology, elaboration of basic research methods, fundamental principles and concepts, and elementary practices, as well as historical and philosophical perspectives and trends.

**Broadly, BEHG 510 covers the following topic areas:**

✂ Fundamental 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 (and unconditioned and conditioned) reinforcement and punishment, plus extinction, and simple reinforcement schedules;

✂ Fundamental 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);

✂ Elementary 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); and  
✂ Basic research methods include laboratory equipment, single–subject designs (ABAB and Multiple Baselines), and measurement protocols.

**BEHG 510 required resources:**

Ledoux, S. F. (2014). *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* (Part I). Ottawa, Canada: BehaveTech Publishing. (ISBN 978-1-927744-02-4)

Ledoux, S. F. (2014). *Study Questions for Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* (Part I). Canton, NY: ABCs. (ISBN 1-882508-34-1)

Students. (2013). *Behaviorology Majors Make a Difference* (Chapters 1 & 2). Canton, NY: ABCs. (ISBN 1-882508-39-6)

Ledoux, S. F. (2021). *Explaining Mysteries of Living (Expanded)*. Los Alamos, NM: ABCs. (ISBN 978-1-882508-55-6)

In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O’Heare, *Journal of Behaviorology*, 19 [2], 6-8) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with enrollee’s already documented professional knowledge and skills. This project or paper will involve the column–supporting papers at the back of the *Explaining Mysteries of Living* book.

### BEHG 511 Course Information

BEHG 511 [based on 211: Introduction to Behaviorology II; described in *Journal of Behaviorology*, Volume 19, Number 2 (Fall 2016) 9–12]:

**Title:** BEHG 511 Introduction to Behaviorology II

**Credits:** 3 TIBI credits

**Prerequisites:** BEHG 510 Introduction to Behaviorology I

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3–15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 511 Introduction to Behaviorology II* is the second of a two-course sequence (BEHG 510 & BEHG 511) that provides students with a continuing introduction to various interrelated components of the

natural science of behavior, behaviorology, and represents a minimum prerequisite for all higher level behaviorology courses. The content covered, some through the repetitious expansion typical of natural-science education, includes 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 of reinforcement, and problems with aversive controls) in a range of settings, along with an introduction to advanced topics such as equivalence relations, the value/rights/ethics/morals continuum, verbal behavior, consciousness, personhood, life, death, and reality.

**Broadly, BEHG 511 covers the following topic areas:**

- ❧ Differential reinforcement, shaping, forward and backward chaining, and fading procedures, including analysis of contingencies involved in these procedures;
- ❧ Basic schedules of reinforcement, including continuous and intermittent schedules, and among the intermittent schedules, both fixed and variable ratio, and fixed and variable interval schedules, as well as common schedule effects on behavior. Other schedules are addressed, including time-based schedules, duration schedules, and DRL/DRH schedules. Compound schedules are introduced along with other schedule considerations;
- ❧ Aversive stimulation and the various problematic effects of its use in changing behavior, including a review of punitive contingencies and escape/avoidance behaviors, and an outline of the most common contingencies that result in the utilization of aversive teaching or training practices, as well as an introduction to alternative added reinforcement-based approaches to changing behavior;
- ❧ Some applied behaviorological research topics, including the General Level of Reinforcement (GLR), Progressive Neural Emotional Therapy (PNET) and, to exemplify the process of developing behaviorological therapies, a comprehensive smoking cessation therapy;
- ❧ Equivalence relations (AKA stimulus equivalence relations), including the three properties of equivalence relations (i.e., reflexive, symmetric, and transitive) and current and potential applications of equivalence relations, particularly in education;
- ❧ As behavioral phenomena, the interrelation of values, rights, ethics, and morals, along with attitudes and beliefs, including an historical review of such notions, and the benefits of framing such phenomena in behaviorological terms;
- ❧ Verbal behavior, including its history, definition, analysis characteristics, and elementary verbal operant relations, including mands, tacts, intraverbals, codics, and duplcs, as well as the teaching of language, and an

- introduction to some advanced topics in verbal behavior, including covert verbal behaviors like thinking;
- ❧ Consciousness, including the evolution of the study of consciousness, culminating in the natural-science study as behavior, including covert respondent and operant relations, and the sequence, and chaining, of consciousness-related behaviors;
- ❧ Cultural concerns of life, personhood, and death, including considerations and implications of the definition of such terms and a behaviorological treatment of the concept of dignified dying;
- ❧ Reality as a behaved phenomenon (“green is a behavior”), including the implications of a natural-science perspective on reality; and
- ❧ Problems facing the world, such as the sustainability of the environment, and how behavior is a major component in such problems and their potential solutions, plus the value, among all the natural sciences working to solve these problems, of the natural-science behaviorology discipline, with its demonstrably effective and efficient technology for changing behavior, so important to the continued existence of a human community on the planet Earth.

**BEHG 511 required resources:**

- Ledoux, S. F. (2014). *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* (Part II). Ottawa, Canada: BehaveTech Publishing. (ISBN 978-1-927744-02-4)
- Ledoux, S. F. (2014). *Study Questions for Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* (Part II). Canton, NY: ABCs. (ISBN 1-882508-34-1)
- Students. (2013). *Behaviorology Majors Make a Difference* (Chapters 3–10). Canton, NY: ABCs. (ISBN 1-882508-39-6)
- Ledoux, S. F. (2021). *Science Is Lovable—Volume 2 of “Explaining Mysteries of Living.”* (Expanded). Los Alamos, NM: ABCs. (ISBN 978-1-882508-56-3)

In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O’Heare, *Journal of Behaviorology*, 19 [2], 9-12) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee’s already documented professional knowledge and skills. This project or paper will involve the contents of the *Science is Lovable—Volume 2 of “Explaining Mysteries of Living”* book.

## BEHG 540 Course Information

BEHG 540 [based on 340: Introduction to Verbal Behavior; described in *Journal of Behaviorology*, Volume 19, Number 2 (Fall 2016) 16-18]:

**Title:** BEHG 540 Introduction to Verbal Behavior

**Credits:** 3 TIBI credits

**Prerequisites:** BEHG 511 Introduction to Behaviorology II

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3-15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 540 Introduction to Verbal Behavior* builds, using a programmed instruction format, on the basic coverage of verbal behavior that was covered in BEHG 511. The course introduces students to the behaviorological analysis of language as verbal behavior. 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, and 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.

**Broadly, BEHG 540 covers the following topic areas:**

- ❧ Verbal behavior as distinguished from non-verbal behavior;
- ❧ The conditioning of verbal behavior within a verbal community;
- ❧ Verbal operant relations called mands, tacts, intraverbals, and codics and duplcs (and subtypes of these last two) and extensions of these relations;
- ❧ Common variables of which verbal operants are a function, and the ways these variables combine in the multiple control of complex verbal behaviors; and
- ❧ Other fundamental concepts in the analysis of verbal behavior including respondent products, point-to-point correspondence, formal similarity, thematic and formal controls over verbal behavior, and the ways the verbal community conditions verbal responding under the control of covert (“private”) stimuli.

## BEHG 540 required resources:

Peterson, N. & Ledoux, S. F. (2014). *An Introduction to Verbal Behavior—Second Edition*. Canton, NY: ABCs. (ISBN 978-1-882508-38-9)

O’Heare, J. (Forthcoming). *Supplemental Study Questions for “An Introduction to Verbal Behavior—Second Edition” by Peterson and Ledoux*. Ottawa, Canada: BehaveTech Publishing.

Ledoux, S. F. (2014). *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* (Chapter 20). Ottawa, Canada: BehaveTech Publishing. (ISBN 978-1-927744-02-4) Students should already have this book from the prerequisite courses.

In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O’Heare, *Journal of Behaviorology*, 19 [2], 16-18) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee’s already documented professional knowledge and skills.

## BEHG 550 Course Information

BEHG 550 [based on 350: Behaviorology Philosophy and History; described in *Journal of Behaviorology*, Volume 20, Number 1 (Spring, 2017) 22-24]:

**Title:** BEHG 550 Behaviorology Philosophy and History

**Credits:** 3 TIBI credits

**Prerequisites:** BEHG 511 Introduction to Behaviorology II

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3-15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 550 Behaviorology Philosophy and History* starts with an in-depth treatment of the philosophy of science, not only of the natural sciences in general (i.e., naturalism), but also of the behaviorology discipline in particular (i.e., radical behaviorism, AKA behavioral naturalism). The course traces 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. Then, the course covers an



in–depth treatment of the history of the emergence of behaviorology as a discipline.

**Broadly, BEHG 550 covers the following topic areas:**

**Philosophy**

- ❖ The philosophical position, tenets, and assumptions of radical behaviorism (AKA behavioral naturalism), the philosophy of natural science underpinning behaviorology;
- ❖ Causes of behavior and the address of private/covert behavior;
- ❖ Innate behavior and operant behavior;
- ❖ Perception;
- ❖ Verbal behavior and thinking;
- ❖ Causes, reasons, and knowing;
- ❖ Emotion, the “Self” and others; and
- ❖ Control of behavior.

**History**

- ❖ Importance of a formal record of the activities within behaviorology before and during its initial development and throughout its history since that point;
- ❖ Definition of behaviorology and how it differs from other disciplines, sub–disciplines, and fields that address the topic of behavior;
- ❖ The scope of behaviorology;
- ❖ Early historical events leading to the founding of behaviorology;
- ❖ Subsequent historical events within behaviorology;
- ❖ Issues driving the disciplinary independence movement;
- ❖ The transition period to behaviorology and the relevance of contemporary professional organizations;
- ❖ Changes in the infrastructure of behaviorology;
- ❖ B. F. Skinner’s role in behaviorology;
- ❖ The place for behaviorology within society and the natural–science community; and
- ❖ Elements and historical events surrounding developments of behaviorology.

**BEHG 550 required resources:**

- Ledoux, S. F. (2015). *Origins and Components of Behaviorology—Third Edition*. Ottawa, Canada: BehaveTech Publishing. (ISBN 978-1-927744-08-6)  
Various papers as assigned.
- Ledoux, S. F. (2015). *Study Questions for Origins and Components of Behaviorology—Third Edition*. Canton, NY: ABCs. (ISBN 978-1-882508-37-2)
- Skinner, B. F. (1974). *About Behaviorism*. New York: Random House. (ISBN 978-0-394-71618-3)
- O’Heare, J. (in process). *Study Questions for About Behaviorism by B. F. Skinner*. Ottawa, Canada: BehaveTech Publishing.
- Ledoux, S. F. (2017). *What Causes Human Behavior—Stars, Selves, or Contingencies?* Ottawa, Canada: BehaveTech Publishing. (ISBN 978-1-927744-14-7)

Ledoux, S. F. (2020). Changing terms is Insufficient to save our science and practice—A response to the Special Section on the term Behavioral Materialism. *Journal of Behaviorology*, 23 (1), 3–9 (available at [www.behaviorology.org](http://www.behaviorology.org)). (Also in [2021] S. F. Ledoux. *Explaining Mysteries of Living (Expanded)* [pp. 415–426]. Los Alamos, NM: ABCs.)

In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O’Heare, *Journal of Behaviorology*, 20 [1], 22-24) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee’s already documented professional knowledge and skills. This project or paper will involve the contents of the *What Causes Human Behavior—Stars, Selves, or Contingencies?* book along with the contents of the “Changing terms...” paper.

**Contingency–Engineering  
Applications Courses  
(Seven available so far; six required by  
Enrollee selection)**

**BEHG 500 Course Information**

BEHG 500 [based on 100: Child Rearing Principles and Practices; Volume 19, Number 2 (Fall 2016) 3–5]:

**Title:** BEHG 500 Child Rearing Principles and Practices

**Credits:** 3 TIBI credits

**Prerequisites:** None (except BCBA for AB Credential)

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self–paced within specified limits (estimated 150 hours; 3–15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 500 Child Rearing Principles and Practices* 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, and conditioning the repertoires of, children in effective, pro-active, non-coercive, positive, and loving ways. Behavior management related knowledge and skills for application in everyday public and personal situations involving children are included.



**Broadly, BEHG 500 covers the following topic areas:**

- ❧ How behavior develops, that is, is conditioned;
- ❧ The application of behaviorological principles to the home environment and family life;
- ❧ Advantageous use of time in managing behavior;
- ❧ Proactive and reactive responding to behavior, particularly adolescent behavior;
- ❧ Questioning children about their behavior;
- ❧ Dealing with hate and anger;
- ❧ Building “self-esteem”;
- ❧ Fussy infants;
- ❧ Avoiding spanking;
- ❧ Understanding and using time-outs effectively;
- ❧ Eliminating tantrums, tattling, lying, stealing, and thumb sucking;
- ❧ Toilet training;
- ❧ Oppositional behaviors;
- ❧ Sibling rivalry;
- ❧ Strategies for parenting teenagers;
- ❧ Managing television viewing;
- ❧ Helping children achieve success in school;
- ❧ Dealing with substance abuse; and
- ❧ Strategies for severe problematic behavior if proactive strategies fail.

**BEHG 500 required resources:**

- Latham, G. I. (1994). *The Power of Positive Parenting*. Logan, UT: P & T ink. (ISBN 1-56713-175-1)
- Ledoux, S. F. (2001). *Study Questions for Glen Latham's The Power of Positive Parenting*. Canton, NY: ABCs. (ISBN 1-882508-15-7)
- Latham, G. I. (1999). *Parenting with Love: Making a Difference in a Day*. Logan, UT: P & T ink. (ISBN 1-57008-661-3)
- O’Heare, J. (Forthcoming). *Study Questions for “Parenting with Love” by Glen Latham*. Ottawa, Canada: BehaveTech Publishing.

In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O’Heare, *Journal of Behaviorology*, 19 [2], 3-5) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee’s already documented professional knowledge and skills.

## BEHG 525 Course Information

BEHG 525 [based on 425: Classroom Management and Preventing School Violence; described in *Journal of Behaviorology*, 19, Number 2 (Fall 2016) 22–24]:

**Title:** BEHG 525 Classroom Management and Preventing School Violence

**Credits:** 3 TIBI credits

**Prerequisites:** BEHG 511 Introduction to Behaviorology II

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3–15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 525 Classroom Management and Preventing School Violence* 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 through all levels of society, 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.

**Broadly, BEHG 525 covers the following topic areas:**

- ❧ The reasons for reducing punishment and coercion across society in general and in education specifically;
- ❧ Applications of basic laws of behavior in school settings;
- ❧ Maintaining and increasing on-task and successful behavior;
- ❧ Improving the quality of teacher to pupil interactions (and traps to avoid);
- ❧ Controlling classroom distractions;
- ❧ Instructional advantages of prevention strategies;
- ❧ The origin, dynamics, and evolution of violence in schools;
- ❧ Profiling perpetrators of school place violence; and
- ❧ Administrative procedures dealing with incipient or actual violence.

**BEHG 525 required resources:**

Sidman, M. (2001). *Coercion and its Fallout Revised Edition*. Boston, MA: Authors Cooperative. (ISBN 978-1-888830-01-8)

(In progress). *Study Questions for Sidman's Coercion and its Fallout (Revised Edition)*. Ottawa, Canada: BehaveTech Publishing.

Latham, G. I. (1998). *Keys to Classroom Management*. Logan, UT: Parents & Teachers ink (P&T ink). (ISBN 097257421-2)

Ledoux, S. F. (2000). *Study Questions for Glenn Latham's Keys to Classroom Management*. Canton, NY: ABCs. (ISBN 978-1-882508-14-9)

Zinna, K. A. (1999). *After Columbine*. Silverthorne, CO: Spectra Publishing. (ISBN 978-0915667253)

Ledoux, S. F. (2000). *Study Questions for Kelly Zinna's After Columbine*. Canton, NY: ABCs. (ISBN 978-1-882508-13-0)

If the student has already taken a course that requires the *Coercion and its Fallout...* book, then the student and professor will agree on alternatives for this content and resources. In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O'Heare, *Journal of Behaviorology*, 19 [2], 22-24) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee's already documented professional knowledge and skills.

**BEHG 530 Course Information**

BEHG 530 [based on 330: Companion Animal Training; described in *Journal of Behaviorology*, Volume 19, Number 2 (Fall 2016) 13-15]:

**Title:** BEHG 530 Companion Animal Training

**Credits:** 3 TIBI credits

**Prerequisites:** BEHG 510 Introduction to Behaviorology I

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3-15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 530 Companion Animal Training* applies behaviorology in the field of companion-animal training. BEHG 530 addresses (a) successful, non-coercive animal-training practices, derived from basic principles, that are used by professional animal trainers, and (b) how to teach companion-animal owners how

to train their companion animal. After reviewing basic principles of behavior within the context of working with non-human animals, relevant practices are differentially applied to the effective training of commonly required behaviors for four representative species: (a) dogs; (b) cats; (c) birds; and (d) horses. The application of these principles, strategies, and practices may be applied to other species of companion animal and indeed non-companion animals with minor variation.

**Broadly, BEHG 530 covers the following topic areas:**

- ❧ Definition and history of behaviorology, including an examination of radical behaviorism (AKA behavioral naturalism) and natural science as opposed to pseudoscience and the different perspectives on behavior, including behaviorology, psychology, behavior analysis, ethology, and the medical-model approach;
- ❧ Principles of behavior, including analysis of contingencies, and operant and respondent conditioning processes;
- ❧ The problems associated with aversive conditioning practices and the use of constructional rather than eliminative approaches, including a strategy and set of guidelines for avoiding the use of aversive stimulation;
- ❧ Training strategy and training project management;
- ❧ Advanced training techniques including shaping and chaining; and
- ❧ Training practices applied to dogs, cats, birds, and horses.

**BEHG 530 required resources:**

O'Heare, J. (2015). *The Science and Technology of Animal Training*. Ottawa, Canada: BehaveTech Publishing. (ISBN 978-1-927744-06-2)

O'Heare, J. (2015). *The Science and Technology of Animal Training Study Questions*. Ottawa, Canada: BehaveTech Publishing. (ISBN 978-1-927744-07-9)

In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O'Heare, *Journal of Behaviorology*, 19 [2], 13-15) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee's already documented professional knowledge and skills.

**BEHG 535 Course Information**

BEHG 535 [based on 435: Performance Management and Preventing Workplace Violence; described in *Journal of Behaviorology*, Volume 19, Number 2 (Fall 2016) 25-27]:

**Title:** BEHG 535 Performance Management and Preventing Workplace Violence

**Credits:** 3 TIBI credits

**Prerequisites:** BEHG 511 Introduction to Behaviorology II

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3–15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 535 Performance Management and Preventing Workplace Violence* 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, 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. The course also compares, applies, and evaluates various recommended policies and procedures for *detering* the actual occurrence of workplace violence in various workplaces (e.g., industrial, manufacturing, organizational, marketing, financial, institutional, or retail business settings).

**Broadly, BEHG 535 covers the following topic areas:**

- ❧ Problems generated by coercive methods present anywhere, including in workplaces;
- ❧ Basic laws of behavior and their applications that fairly manage performance in workplace settings while also preventing violence in the workplace; and
- ❧ Replacing coercive practices with effective, comprehensive, and systematic science-based practices for more productive, fair and safe workplace operation.

**BEHG 535 required resources:**

Sidman, M. (2001). *Coercion and its Fallout Revised Edition*. Boston, MA: Authors Cooperative. (ISBN 978-1-888830-01-8)

(In progress). *Study Questions for Sidman's Coercion and its Fallout (Revised Edition)*. Ottawa, Canada: BehaveTech Publishing.

Daniels, J. E. & Daniels, A. C. (2014). *Performance Management: Changing Behavior that Drives Organizational Effectiveness (Fifth Edition)*. Pittsford: Performance Management Publications. (ISBN 978-0937100257); Available at <http://aubreydaniels.com/performance-management>

(In progress). *Study Questions for Daniels and Daniels' Performance Management (Fifth Edition)*. Ottawa, Canada: BehaveTech Publishing.

Mountain States Employers Council (MSEC) & Nicoletti-Flater Associates. (1994). *Violence Goes to Work*. Denver, CO: MSEC.

If the student has already taken a course that requires the *Coercion and its Fallout...* book, then the student and professor will agree on alternatives for this content and resources. In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O'Heare, *Journal of Behaviorology*, 19 [2], 25-27) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee's already documented professional knowledge and skills. This project or paper will involve the contents of the *Violence Goes to Work* book.

## BEHG 555 Course Information

BEHG 555 [based on 455: Behaviorological Thanatology and Dignified Dying; described in *Journal of Behaviorology*, Volume 19, Number 2 (Fall 2016) 28–31]:

**Title:** BEHG 555 Behaviorological Thanatology and Dignified Dying

**Credits:** 3 TIBI credits

**Prerequisites:** BEHG 511 Introduction to Behaviorology II

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3–15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 555 Behaviorological Thanatology and Dignified Dying* focuses first on reviewing the roll that punishment and coercion play throughout society. Then the course focuses on the scientific knowledge and skills needed to replace 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 (e.g., medical doctors or nurses, hospice personnel,



funeral directors, and/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.

**Broadly, BEHG 555 covers the following topic areas:**

- ❧ The problematic outcomes of coercive practices affecting society in general and dying individuals in particular;
- ❧ The unaddressed side-effects of the unrecognized coercive treatment of the terminally ill;
- ❧ Foundations and implications of the discipline of behaviorology applied to the field of thanatology;
- ❧ A natural-science perspective on the ethics of relevant medical practices with respect to protracted dying;
- ❧ The implications of naturalistic philosophy and science in place of the values associated with other epistemologies;
- ❧ A behaviorological analysis of the bereavement of surviving social partners;
- ❧ Economic realities and the cultural practices of welfare; and
- ❧ Behavior, death, and life in relation to persons.

**BEHG 555 required resources:**

- Sidman, M. (2001). *Coercion and its Fallout Revised Edition*. Boston, MA: Authors Cooperative. (ISBN 978-1-888830-01-8)
- (In progress). *Study Questions for Sidman's Coercion and its Fallout (Revised Edition)*. Ottawa, Canada: BehaveTech Publishing.
- Fraley, L. E. (2012). *Dignified Dying—A Behaviorological Thanatology*. Canton, NY: ABCs. (Hardcover: ISBN 978-1-882508-16-7 or softcover: [2020] Ottawa, Canada: BehaveTech Publishing. ISBN 978-1-927744-20-8)
- Raymond, L. (2015). *Study Questions for Fraley's Dignified Dying—A Behaviorological Thanatology*. Canton, NY: ABCs. (ISBN 978-1-882508-17-4)
- Humphry, D. (2010). *Final Exit*. New York: Random House (e.g., Delta Trade Paperback Edition). (ISBN 978-0-385-33653-6)

If the student has already taken a course that requires the *Coercion and its Fallout...* book, then the student and professor will agree on alternatives for this content and resources. In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O'Heare, *Journal of Behaviorology*, 19 [2], 28-31) credential enrollees will, in coordination with their professor and

by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee's already documented professional knowledge and skills. This project or paper will involve the contents of the *Final Exit* book.

## BEHG 565 Course Information

BEHG 565 [based on 465: Behaviorological Rehabilitation; described in *Journal of Behaviorology*, Volume 19, Number 2 (Fall 2016) 32-34]:

**Title:** BEHG 565 Behaviorological Rehabilitation

**Credits:** 3 TIBI credits

**Prerequisites:** BEHG 511 Introduction to Behaviorology II

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3-15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 565 Behaviorological Rehabilitation* 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 generated by the, sometimes unnecessary, coercion that too often informs many practices in such settings, 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, as an integral course component.

**Broadly, BEHG 565 covers the following topic areas:**

- ❧ The problematic outcomes of coercive practices affecting society in general and penal rehabilitation in particular;
- ❧ Foundations and implications of the discipline of behaviorology applied to the field of penal rehabilitation;
- ❧ Application of basic laws of behavior to practices utilized in rehabilitation institutional settings, and the outcomes thereof; and
- ❧ Replacing unscientific and coercive practices with comprehensive, effective and systematic science-based practices in youth and adult rehabilitation settings.



**BEHG 565 required resources:**

- Sidman, M. (2001). *Coercion and its Fallout Revised Edition*. Boston, MA: Authors Cooperative. (ISBN 978-1-888830-01-8)
- (In progress). *Study Questions for Sidman's Coercion and its Fallout (Revised Edition)*. Ottawa, Canada: BehaveTech Publishing.
- Cohen, H. L. & Filipczak, J. (1989). *A New Learning Environment*. Boston, MA: Authors Cooperative. (ISBN 978-0962331138)
- (In progress). *Study Questions for Cohen and Filipczak's A New Learning Environment*. Ottawa, Canada: BehaveTech Publishing.
- Fraley, L. E. (2013). *Behaviorological Rehabilitation and the Criminal Justice System*. Canton, NY: ABCs. (Hardcover : ISBN 978-1-882508-20-4 or softcover: [2019] Ottawa, Canada: BehaveTech Publishing. ISBN 978-1-927744-21-5)
- Raymond, L. (2015). *Study Questions for Fraley's Behaviorological Rehabilitation and the Criminal Justice System*. Canton, NY: ABCs. (ISBN 978-1-882590-21-1)

If the student has already taken a course that requires the *Coercion and its Fallout...* book, then the student and professor will agree on alternatives for this content and resources. In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O’Heare, *Journal of Behaviorology*, 19 [2], 32-34) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee’s already documented professional knowledge and skills.

## BEHG 580 Course Information

BEHG 580 [based on 480: Green Contingency Engineering; described in *Journal of Behaviorology*, Volume 20, Number 1 (Spring, 2017) 29–31]:

**Title:** BEHG 580 Green Contingency Engineering

**Credits:** 3 TIBI credits

**Prerequisites:** BEHG 511 Introduction to Behaviorology II

**Format:** Distance (online and offline options)

**Time Frame:** Commences upon enrollment. Self-paced within specified limits (estimated 150 hours; 3–15 weeks)

**Professor:** Assigned upon enrollment, with contact information

**Description:** *BEHG 580 Green Contingency Engineering* addresses global problems in a format that allows the student to carry out considerable self-guided analyses and explorations into topics of particular interest to them within the context of an appropriate foundational science. 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 (see Sidman, 2001)—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 (see Ledoux, 2014) 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 civilized and sustainable human and planetary survival.

**Broadly, BEHG 580 covers the following topic areas:**

- ❧ The role of natural science in society, including its uses and misuses;
- ❧ The role of coercion in prompting many levels of violence throughout society;
- ❧ The range of actual and potential behaviorological applications to the behavior components of a wide range of global problems and solutions; and
- ❧ Non-coercive policies across all levels of society in solving global problems.

**BEHG 580 required resources:**

- Wyatt, W. J. (1997). *The Millennium Man*. Hurricane, WV: Third Millennium Press. (ISBN 0-9663622-0-9)
- Ledoux, S. F., Wyatt, W. J., & Bias, E. F. (1999). *Study Questions for W. Joseph Wyatt's The Millennium Man*. Canton, NY: ABCs. (ISBN: 1-882508-11-4)
- Skinner, B. F. (1948/1976). *Walden Two*. New York: Macmillan. (Kindle ISBN: 978-0-87220-778-3; Paperback ISBN: 978-0-87220-778-3)
- Ledoux, S. F. & other unknown authors. (1976–2012). *Study Questions for B. F. Skinner's Walden Two*. (Provided by TIBI as a free download on [www.behaviorology.org](http://www.behaviorology.org).)
- Ledoux, S. F., Hallatt, D., & Hallatt, T. (2014). An Interview on Behaviorology Supporting a Sustainable Society. *Journal of Behaviorology*, 17 (1), 3–12. (Also available on a DVD that Ledoux describes as “aurally interesting but visually boring.”)

Ledoux, S. F. & Hallatt, D. (2014). (DVD) *Interview: Behaviorology and Education for Green Engineering and Sustainable Living*. DVD: TIBI & PPF. (Available through TIBI at [www.behaviorology.org](http://www.behaviorology.org)).

ABAI. (2010). Special Section: The Human Response to Climate Change. *The Behavior Analyst*, 33 (2), 145–206. Available (at time of publication) at: <http://researchnews.osu.edu/archive/thebehavioranalyst-climatechange.pdf>

Shuler, M. (2021). *A World of Our Own Making (Expanded) A sequel to Walden Two*. Los Alamos, NM: ABCs. (ISBN 978-1-882508-54-9)

### **BEHG 580 recommended resources:**

Ledoux, S. F. (2014). *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems*. Ottawa, Canada: BehaveTech Publishing. (ISBN: 978-1-927744-02-4) Students should already have this book from the prerequisite courses.

Sidman, M. (2001). *Coercion and its Fallout Revised Edition*. Boston, MA: Author's Cooperative. (ISBN: 1-888830-01-8) Students should already have this book from previous courses.

In addition to completing the educational contingencies described and assigned in the undergraduate course syllabus for this course (i.e., in O’Hear, *Journal of Behaviorology*, 20 [1], 29-31) credential enrollees will, in coordination with their professor and by the middle of the course, begin and carry out the process of designing, implementing, and reporting—in writing—an additional project or paper related to the course topic and commensurate with the enrollee’s already documented professional knowledge and skills. This project or paper will involve the contents of the *A World of Our Own Making* book.

## **APPENDIX 2**

### **Applied Behaviorology Credential for BCBAs Policies and Procedures Supplement**

This credential includes policies and procedures separate from but in addition to the policies and procedures for TIBI’s other certificate programs. (TIBI’s other policies and procedures are available on [www.behaviorology.org](http://www.behaviorology.org).)

**Costs.** The cost to take TIBI’s courses for this credential is US\$100 per course, which makes earning this credential an affordable undertaking for BCBAs, especially new ones just beginning their professional careers. TIBI transfers this fee as a stipend to the TIBI professor working the course with the individual taking it. TIBI

also acknowledges that this stipend is only a token, vastly too small to represent the substantial contribution on the part of the participating professors—in support of both the further professional development of applied natural scientists of behavior, and of global problem solving—that serving with this stipend as professors for credential enrollees represents, a fact that all can appreciate.

**Grandfathering.** As a set of courses that round out the enrollees master’s level professional repertoire, “grandfathering” with respect to this credential involves granting credit for courses in enrollees’ BCBA–preparation programs that TIBI accepts as equivalent to TIBI’s credential courses.

Credential enrollees submit specified documentation (e.g., the college catalog information/descriptions and the syllabi) to TIBI regarding courses in their BCBA–preparation programs that they think should be considered as equivalent to TIBI’s credential courses. The TIBI Equivalency Committee (TEC) considers whether or not the submitted courses are equivalent to TIBI courses, and/or whether or not some combination of parts of the courses are equivalent to TIBI courses, and grants credit to enrollees for any equivalent courses or parts of courses. Equivalency of TIBI courses with courses from an enrollee’s BCBA–preparation programs is based on comparing the enrollee’s submitted BCBA–preparation–program courses with the previously university–vetted behaviorology courses from which these credential’s courses are derived.

Equivalency consideration involves comparing at least the contents and resources of the courses, which should be behaviorologically similar, as well as the faculty appropriateness of the courses. For example with respect to faculty appropriateness, for a course to be a candidate for equivalency, it should have been taught by a professor whom behaviorologists can factually and demonstrably recognize and describe as a natural scientist of behavior who acknowledges behaviorology even if she or he does not tact themselves as a behaviorologist.

While the work of the TEC occurs on a case by case basis, TIBI will nevertheless maintain checks on any increasing number of “equivalent–course” precedents (in terms of who taught what course—deemed equivalent—covering what contents, where and when, using what resources). Also, TIBI will acknowledge and list such accepted precedents, and make the list publicly available so that other BCBAs, who have already taken these *particular* equivalent–courses, can be encouraged to enroll for the credential, knowing that they will receive credit for these equivalent–courses.

Some BCBAs have already earned grades of “A” or “B” in ten or more courses that are already known to be courses that are equivalent–courses to this credential’s ten required courses. So these BCBAs have “pre–earned”

this credential and, if they applied for this credential, then they would receive it. For example some potential enrollees for this credential who earned grades of “A” or “B” in all of the 12 required behaviorology courses in “Track B” of the human services degree at SUNY–Canton, and have also earned their BCBA certification, have already met the requirements of this credential and will receive it upon applying for it.

**Problem solving:** If any problem arises in a course that the credential enrollee and professor are unable to resolve, then the credential enrollee or professor should contact another TIBI Board member for assistance with solving the problem; as needed, this may involve the whole Board. Contact information is available on [www.behaviorology.org](http://www.behaviorology.org).

**Legal considerations.** This credential and its courses and its governing Policies and Procedures provide information regarding the subject matter covered with the understanding that TIBI is not providing *professional* services and that any otherwise unresolved problems that occur will be adjudicated by an independent arbitrator that TIBI selects with TIBI hereby excluding all liability to the extent permitted by law for any errors or omissions in this credential and its courses and their offering or perusal and for any loss, damage, or expense, whether direct or indirect, suffered by a third party relying on any information contained in this credential and its courses and their offering or perusal.✧

## References\*

Fraley, L. E. (2008). *General Behaviorology—The Natural Science of Human Behavior*. Canton, NY: ABCs.

Fraley, L. E. & Ledoux, S. F. (1992/2015). Origins, status, and mission of behaviorology. In S. F. Ledoux. *Origins and Components of Behaviorology—Third Edition* (pp. 33–169). Ottawa, Canada: BehaveTech Publishing. While first published in 1992, this multi-chapter paper also appeared across 2006–2008 in these five parts in *Behaviorology Today* (later named *Journal of Behaviorology*; see the journal page at [www.behaviorology.org](http://www.behaviorology.org)): Chapters 1 & 2: 9 (2), 13–32. Chapter 3: 10 (1), 15–25. Chapter 4: 10 (2), 9–33. Chapter 5: 11 (1), 3–30. Chapters 6 & 7: 11 (2), 3–17. (While BehaveTech Publishing of Ottawa, Canada released the hardcover edition of the *Origins... Third Edition* book in 2015, in 2020 ABCs of Los Alamos, NM, released a softcover, “Print–On–Demand” version through [www.lulu.com](http://www.lulu.com).)

Ledoux, S. F. (2014). *Running Out of Time—Introducing Behaviorology to Help Solve Global Problem*. Ottawa, Canada: BehaveTech Publishing.

Ledoux, S. F. (2018). More assistance in developing behaviorology courses and programs. *Journal of Behaviorology*, 21 (2), 19–28. (Also in [2021] S. F. Ledoux. *Explaining Mysteries of Living (Expanded)* [pp. 379–396]. Los Alamos, NM: ABCs.)

Ledoux, S. F. (2020). Changing terms is Insufficient to save our science and practice—A response to the Special Section on the term Behavioral Materialism. *Journal of Behaviorology*, 23 (1), 3–9. (Also in [2021] S. F. Ledoux. *Explaining Mysteries of Living (Expanded)* [pp. 415–426]. Los Alamos, NM: ABCs.)✧

\*Behaviorology can stand on its own references. Those references, however, make clear that they “stand on the shoulders of giants,” as the saying goes, as in giant repertoires and the contingencies that produced them (e.g., the contingencies and repertoires of Darwin, Skinner, Moore, Day, Michael, Fraley, and so many more). When a group of natural scientists of behavior adopted the label “behaviorology” as the name for their decades–old discipline in 1987, several pledged most of their future writing output to building the explicit disciplinary literature of behaviorology (i.e., works by behaviorologists about behaviorology in behaviorology journals and books). The works in this literature get appropriately cited first, even when many other works are also worthy of citation for the same points. Hence this reference list contains mostly works from the explicit disciplinary literature of behaviorology. In many articles like this one, that means that some authors may seem over represented in the references, yet that happens simply because they have contributed their works to this literature.



## 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.



# *Why the Delays in Advancing the Natural Science of Behavior*

Lawrence E. Fraley\*

*Abstract:* This essay explores a major problem with our global culture. Human culture has evolved with a substantial imbalance in the objectivity exhibited by its people. Over the past several centuries, maturing basic sciences of energy, matter, and living structures, each informed by a philosophy of naturalism, have yielded great progress in a wide variety of fields that contribute to human well being. As a general result, people can live longer, more comfortably, and more prosperously than their predecessors. Nevertheless, the evolving natural–science community, which has produced such notable improvements in the human condition, has come to be characterized by a striking and increasingly critical deficiency. The current roundtable of the natural–science community has a conspicuously empty chair. The fundamental natural sciences of physics, chemistry, and biology are represented, and depending on the preferred scheme by which the natural–science community is subdivided into its constituent neighborhoods, others formed from components of those three may be included. But the formal chair reserved for a natural science of behavior—determining functions—the study of the functional relations between behavior and environment, taking into account factors in both the internal and external environments of the behaving body—has gone unoccupied for far too long. What is delaying the advance of the natural science of behavior?

The continuing absence of an organized and fully supported natural science of behavior—controlling functions (especially those pertaining to human behavior in relation to its environment) within the natural–science community leaves a kind of void that tends to be filled quickly and opportunistically by the forces of organized superstition. Moreover, the nature of such a behavior–related discipline, informed exclusively by natural philosophy, has gone largely unrecognized within the natural–science community while its members have tentatively pursued compromises with the extant but fallacious alternatives. The book entitled *General Behaviorology: The Natural Science of Human Behavior*, (Fraley, 2008; a three–volume edition is in progress) represents an educational vehicle by which that deficiency may be overcome both expeditiously and comprehensively.

In general, scientific practice is always brought to bear in pursuit of the implications of prevailing philosophical assumptions, and the results are then interpreted from the perspective of those assumptions. However, most of what is now accepted as behavior science is not *natural* science, because the fundamental assumptions that inform its interpretations are products of conventional superstition rather than products of objectively supported

induction. However, if those assumptions are products of superstitious indulgence, then to the extent that their implications are pursued via good scientific methods, that good science tends to be wasted in pursuit of the fallacious implications of unfounded philosophy. Any potentially worthwhile findings via that kind of scientific practice, when interpreted according to such invalid philosophical assumptions, tend to be presented with whatever nonsensical characteristics may be required to maintain conformity with those fallacies. Often that involves interpreting such a finding in a bizarre way that implies its role in some fictitious relation.

Full citizenship in the natural–science community requires not only the practice of objective scientific methods but also the assumption, induced from an extensive history of objectively established evidence, that the universe is a natural place. According to that general assumption and in accordance with the implications of the term *natural*, all real events are measurable and are linked to other events via functional relations that are established by transfers of energy.

Within the general scientific realm, training programs, even in the natural sciences, have been criticized for neglecting the essential philosophy of

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naturalism while focusing on scientific method. Arguably, the philosophy of naturalism tends too often to be left to the personal induction of each trainee even though many of them, when arriving for their natural–science training, are already thoroughly indoctrinated with alternative philosophy that is anchored in superstition.

To the extent that those charges of neglect are valid, such curricular deficiencies in the areas of natural philosophy and comparative philosophy can be explained in part by reference to the prevailing tradition of personal freedom of thought, which in countries such as the United States of America is constitutionally guaranteed. (*Freedom* in that sense implies an absence of government–enforced coercion of thought). Trainers in the natural–science programs of public institutions are permitted to test students and hold students accountable for their practice of objective scientific methods, but those trainers may not similarly impose criteria for the philosophical assumptions that will steer the professional work of their trainees and serve as the conceptual framework within which those trainees will interpret the results of their scientific work.

At best, the trainers may only teach descriptively and comparatively about natural philosophy, but may not withhold academic credit or credentials from a student whose personal professional behavior fails to reflect an appropriate naturalism. That is, the schools, operating under the control and auspices of the governmental agency of education, are constitutionally prohibited from the exercise of any such selective quality–control with respect to the personal thought of a student. This prohibition does not necessarily preclude natural–science faculties from producing students with appropriately balanced scientific and philosophical behavioral repertoires. However, it represents a dangerous precipice along the philosophical edge of the curricular playing field near which too few natural–science teachers are prepared to tread, and many safely confine their activity to the scientific methodological side of the field.

At the same time, in the private sector, the established forces of well organized superstition operate intensely and comprehensively, if often informally, beyond any such constitutional restraint, and typically they maintain unrelenting lifelong superstition–based programs of indoctrination. There, social requirements to comply usually substitute for academic requirements and typically do so with equal or greater effectiveness.

One result may be academically credentialed “natural” scientists that account for any phenomena that lie beyond their personal analytical frontier by conjuring forth whatever mystical entity seems adequate to deal effectively with them. Instead of respecting the boundaries of their ignorance, they superstitiously install fictitious causes for what lies beyond. The subsequent

disposition of those fictional constructs can then be awkward when eventually scientific progress overtakes those phenomena or when those “scientists” discover that, previously unknown to them, that has already happened.

Practitioners of traditional “social science” fields that focus on behavior have tended to indulge heavily in such false accounting. They have relied heavily on both (a) the existence of self–agents that exercise free will and (b) the voluntary nature of the behavioral expressions that purportedly originate wholly or partly with such intrinsic self–agents. Such assumptions afford a basis for an implicit personal responsibility, where *personal* alludes to the putative behavior–managing self–agent. Although these ideas continue to prevail in contemporary culture, and historically, human languages have evolved to reflect them, a natural–science of human behavior does not lead to them.

Contrary to some popular wishful thinking that occurs around the fringes of the general scientific community, pursuing the implications of mystical philosophy in accordance with strict scientific methods cannot carry philosophically compromised disciplines into the domain of the natural sciences. That is because objective analytical methods alone do not complete the qualifications for citizenship in the natural–science community. Also required is the assumption that all events are functionally derived from theoretically traceable preceding events in what is called a natural history—an assumption that arises inductively from a long history that is devoid of objectively established exceptions.

All of the observable phenomena that purportedly are being analyzed via a mismatched science and philosophy are amenable to investigation from the perspective of naturalism. However, such purely naturalistic inquiries require a substantially different kind of scientific and philosophical treatment than the kind that prevails in the contemporary social sciences where philosophical vagaries yield disparity that can reduce disciplinary integrity below the threshold of scholarly discernment.

A mysterious self–agent, when presumably deciding on the behavior that it directs its host body to execute, may be influenced by events in its environment. But, in most versions of that popular myth, that mysterious agent remains the final arbiter. Such assumptions inform a very different behavior–related discipline than does the assumption that a behavioral response is the dependent variable in an inevitable and entirely natural function in which theoretically the independent variables are both measurable and controllable. While both kinds of science may feature respectable methods by which they examine the phenomena of interest, only one of them could qualify its practitioners for membership in the natural–science community. Citizenship in the natural sciences requires that the philosophical assumptions,

which inform the scientific activity and serve as the basis for the interpretation of its findings, derive via objectively based induction rather than via uncritical adoption from the cultural palette of speculative lore.

As the human population grows, and the planet undergoes a relative technological shrinkage, human behavioral problems that in antiquity played out in the obscurity of isolation now, increasingly, can threaten on a global scale. Today, the ineffective address of a serious behavioral problem can have adverse implications that may quickly grip the entire planet. Such apocalyptic threats include multinational war, pandemic disease, extensive famine, worldwide economic collapse, and the global exhaustion of natural resources. In almost all cases, such calamities can be traced to behavioral failures that substantially exacerbated the disaster or in some cases initiated it outright.

Many ancient problems went unsolved by the forces of organized superstition and had to await the emergence of modern physics, chemistry, biology, and the various sciences that derive as applied composites of those more basic sciences. Unfortunately, many increasingly threatening *behavior*-related problems continue to await resolution via an emergent natural science of behavior. Traditionally, behavioral problems have been left to the non-natural behavior sciences, and, predictably, those problems continue to stress the culture, in some cases on a planetary scale. The relevant natural science of behavior, being of relatively recent emergence, is only in the incipient stage of establishing membership in the basic natural-science community. And without the cultural support of that community, the practitioners of the basic natural science of human behavior cannot bring the full potential of their discipline to bear on important behavior-related problems, many of which continue to expand and intensify their threats to human well-being.

Efforts spanning a century or more by various natural scientists have targeted the traditional socio-behavioral science community in unrelenting attempts to render its philosophical underpinnings more objective—to convert its practitioners from superstitiously generated philosophical assumptions to the kind of objectively supported naturalistic assumptions that inform modern natural scientists in physics, chemistry, and biology. To a substantial degree, those efforts at conversion have continued to fail, largely because an early and substantial program of superstitious conditioning typically leaves a human intellect very resistant to a strict and generalized objectivity. This is understood so well at the intuitive level of common lore that the folly of such an attempt is a common dramatic theme and underlies familiar admonitions to avoid trying to talk people out of their superstitiously informed ideas, especially those that are bolstered by religious zeal.

Given the long and substantial establishment of the traditional social sciences within contemporary human culture, many advocates of the newly emergent natural discipline for inquiry into behavioral phenomena have hopefully joined the impractical attempt to invest the traditional social science community with naturalism. As predictable, that approach has proven wastefully difficult, because, at the practical level, the people to whom such appeals are directed cannot afford the implications of the extensive changes in their lives that an inductive leap to naturalism would require of them.

The adoption of a philosophy of naturalism by a social scientist who has been steeped in the traditional philosophical ideology would, in most cases, be fraught with many adverse implications for such a convert. Perhaps that person would come to realize that one's perhaps limited resources and opportunities for career training had been wasted on the pursuit of a largely invalid and ill-conceived curriculum. Furthermore, such an individual would have to accept that some if not all previous professional accomplishments, however prestigious, represented misguided interpretive exercises. Convinced of the validity of the new perspective but inexperienced with the relatively unfamiliar science that it supports, one might recognize that one is insufficiently prepared to proceed immediately on the basis of the new fundamental assumptions, at least at the former level of one's professional productivity.

On the domestic front, one could find that one was sharing one's life with a person, who, remaining locked in the grip of the old philosophy, will be unable to understand and accept one for the new kind of person that one will have become. That could also be true of one's relatives and friends. In addition, having perhaps indoctrinated one's children in the kind of philosophical framework that comported with the perspective that one is being challenged to abandon, as a convert to naturalism one could face a diminished or estranged relation with one's own offspring.

If the traditional social scientists to whom natural scientists often direct their proselytization in behalf of naturalism could afford the honesty, many would inform the intruding naturalists that, as committed social scientists, they cannot afford to know what those naturalists are telling them, however objectively compelling the arguments for it may be. Natural scientists tend to insist that acquiescence to logic must trump the results of a disparate nurture—a popular folly within the natural-science community. Such a hopeful expectation comes easily to natural scientists, because intrinsic to the culture of their natural-science community, nurture is perhaps inconspicuously but always carefully crafted to instill precisely that compatibility with objectivity. But beyond the natural-



science community objectivity is often merely tolerated in a limited way as a matter of practical necessity, remaining ignorable in favor of superstition when that would foster tranquillity or convenience.

This article represents an abandonment of that traditional and somewhat quixotic quest by natural scientists to proselytize for fundamental objectivity among people who bring superstitiously derived philosophical assumptions profoundly to bear on the interpretation of results from their often carefully respected scientific methods. Furthermore, continual attempts to avoid eliciting aversive emotional reactions in superstitiously invested readers during efforts to make naturalists out of such mystics typically requires a degree of euphemistically crafted circumspection that would fatally dull the explicative precision demanded for the appreciation of behaviorology. In a departure from the course followed by many earlier presentations of the emergent natural science of behavior, this article is not addressed as a persuasive treatise to the traditional behavior-focused social science community.

Specifically, this writing is addressed to the citizens of the *natural* science community. It presents the naturalistically informed basic behavior science discipline that is necessary to complete the profile of scientific neighborhoods that must compose the natural-science community if that community is to address the full spectrum of problems that confront humankind. Unfortunately, those who apply scientific methods in service to mystical assumptions may opportunistically exploit behavioral problems, but they cannot solve them any more effectively than they solved the other kinds of problems that were eventually addressed and solved by physicists, chemists, biologists, and others with composite skills thereof. With the place reserved for a *natural* science of behavior standing vacant, the natural-science community remains compelled to abandon an increasingly critical domain of problems to the forces of organized superstition. However, with the emergence of a natural science of behavior, that traditional forfeiture is no longer necessary.

### ***Toward a Reorganization of the Natural-Science Community***

The natural science called behaviorology affords, at a particular level of analysis, the effective address of a series of ancient behavior-related mysteries that have long plagued humankind—mysteries that for lack of an appropriate basic science, the natural-science community has largely been forced to relinquish to the agencies of organized superstition. However, with recourse to this new and relevant natural science, such long-intractable mysteries tend to topple like a row of dominoes. Natural scientists who read and to some extent master the natural

science of behaviorology will have prepared themselves to handle those phenomena in their own respective areas that in some way pertain to behavior-determining functions and to do so without having to compromise their naturalism as traditionally has been the case.

Furthermore, the relevance of behaviorological treatments tend generally to focus heavily on *human* behavior in familiar contexts. Extensive behaviorological analyses of familiar behavioral events allow one to relate this basic science to the practicalities of one's own life.

***Basic vs. Applied.*** Various descriptions of the internal organizational structure of the natural-science community have been based respectively on differing considerations. Respective scholars tend to produce differing charts, each of which is purported to reveal the disciplinary structure of the natural sciences. Divisions based on the distinction between theoretical abstraction and applied practicality have led to traditional basic-versus-applied categorizations. For example, both theoretical physics and fluid dynamics (as the latter is commonly taught in schools of engineering) might be aligned along the same track with the theoretical version coming first to suggest its basic support of the more applied specialization that follows. A similar distinction can be recognized between the principles of basic metallurgy and the practical engineering applications. For instance, archaeologists may bring basic principles of metallurgy to their analyses of the properties of metallic artifacts when constructing estimates of the technological sophistication of ancient cultures. Another track might begin with basic chemistry that, in turn, is linked to other sciences that apply chemistry to the solution of certain practical problems that they address. One such link could lead to geology where, for example, the development of a new chemical “wet test” by which the identity of a mineral specimen can be revealed even when an available specimen occurs in the form of a particularly deceptive variant.

***Reduction.*** Another categorization of the natural sciences is based on reduction. In such schemes one domain of scientific inquiry is said to be more basic than another if the accounts of the phenomena in a second domain are subject to a more fundamental interpretation in the terms, principles, and relations of the first domain. That is, the second domain may be revealed as an aspect of the first domain via such an analytical reduction process.

Thus, in accounting for chemical phenomena, it is possible to provide a more fundamental interpretation that is cast in the terms, principles, and relations of physics. Among the involved scientists, the idea that chemistry is the physics of molecular interactions has often emerged intuitively. Similarly, accounts of biological phenomena can often be recast at the analytical levels of chemistry and physics, and modern biology textbooks

contain frequent forays into chemistry and physics to complete more satisfying accounts of the biological phenomena that are under current consideration.

In a classification scheme for natural sciences that is based on that kind of reduction, physics tends to be regarded as the most basic of the natural sciences. The other natural sciences then stem directly or indirectly from physics in the sense that whatever is to be explained in one of those domains of inquiry, regardless of its descriptive treatment in the special terms of its own scientific neighborhood, is subject to a more fundamental explanatory account via recourse to the perspective of the more basic level of matter and energy. Thus, while each natural science beyond basic physics has its own well evolved descriptive, taxonomic, and explanatory style, its explanatory aspects are generally regarded as being subject to reduction to the analytical level of physics. (Some readers may sense that both the basic-versus-applied kind of distinction and the distinction based on reduction may be appealing to different facets of the same fundamental class of evidence.)

**Sociocultural importance.** Yet another classification scheme for the natural sciences is based on their respective sociocultural importance. Given two natural sciences, the relatively more important science is classed, on that basis, as the more basic one.

While each scientific practitioner may assert the relative merit of a favored science, the culture at large, via its school systems, has quietly resolved the issue. While a wide variety of scientific subjects can be found in the collective curriculum of the secondary schools of culturally advanced countries, nearly all such schools provide a core of physics, chemistry, and biology. Those three sciences have emerged as basic via agreement about their importance as expressed through their widespread establishment in school curricula. Where course requirements are enforced with respect to the natural sciences, those three sciences tend to be at the top of the list for required study, while in the generally crowded school curricula other natural sciences, typically more “applied”, if available for students, tend to be offered less frequently and usually as electives.

**The classification of natural sciences in this essay.** One major objective of this essay is to press a particular point—namely, that the accelerated advance, across the past few centuries, of physics, chemistry, and biology (as well as the more phenomenally-specific sciences that draw from those three in various proportions) has resulted in an increasing qualitative imbalance in human culture. That is because, across that interval of accelerating progress, a natural science of behavior has been absent from the natural-science roundtable.

This essay endorses a *natural science of human environment-behavior relations* that can fill the obvious

gap in the profile of the basic natural sciences. The argument is that behaviorology must be included as the fourth basic natural science among those that historically have been endowed with such prominence. After all, the currently recognized basic sciences have become prominent primarily as a result of the adverse cultural implications of their potential respective neglect. Yet among the most threatening problems in today’s world, behavioral problems rank at or near the top. Arguably, therefore, among the natural sciences a natural science of behavior should have curricular equality if not primacy in academic institutions.

Behaviorology can also be fitted into any of the other schemes of classification for the neighborhoods in the natural-science community. As the reader of this essay will note, behaviorology is a descriptive, explanatory, and taxonomic natural science of behavior-determining functions. It is fundamentally the science of the functions that account for *why* behavior occurs (as opposed to *how*, physiologically, it occurs, ... the latter being a line of inquiry that is left largely to biology). As with all functions featuring objectively measurable variables, from an explanatory perspective, the analytical accounts for the functional relations in behaviorology are reducible to the analytical level of physics—a reduction that can be pursued largely via traces of the increments of energy that establish function. However, the purely descriptive level of behaviorology that inheres in the speech and writing of behaviorologists as they communicate about what they are studying is less implicative of such reduction. Hence, behaviorology is said to feature its own level of analysis, which contributes to the uniqueness of its disciplinary identity.

Ultimately, it is the natural-science community that must insist that it restructure to address behavioral issues. The natural-science community must recognize that it cannot passively allow the culture at large to continue suffering the absence of its help with “bad” or “inappropriate” behavior.

### ***Resisting Mystical Accounts and Their Implications***

People tend to exert strong social pressure on others to explain most any phenomenon that is being encountered. People want answers to questions about what it is, how it works, its historical details, and the role that it is playing relative to other things. Typically, the pervasiveness and compulsive force of that kind of social pressure to explain things far outstrips the capacity of an individual to provide valid objective accounts. Unfortunately, the continuing social aversiveness for the explanatorily bankrupt responder cannot be terminated by a simple “I don’t know,” because, beyond the relatively small natural-science community, mere professions of

ignorance per se tend to be subject to a rather unrelenting general social punishment.

Thus are created those familiar social situations in which relief can be gained by quick recourse to invented pseudo-explanations. Such fake accounts need only to be accepted by an insufficiently critical audience. Thus the extent to which such phony explications may be illogical or absurd is often irrelevant. Frequently, such successful pseudo-accounts reduce to clichés. If such a cliché is culturally enduring, it may emerge as a tightly woven thread of prevailing, unquestioned, and widely promulgated pseudo-wisdom within the cultural lore. One result is culture-wide patterns of superstition in which indulgence is generally deemed fashionable, and which attract the substantial personal investments of a large number of people.

The intellectual maturity of the human species can be measured by the extent of the resistance both to the tendency to resort to such blatantly invalid accounts and to the superstitious tendency to accept them. Such a gauge is applicable either to the species or to its respective individuals. Normatively measured, the human species, languishing in an inchoate intellectual state, awaits a resolution of the contest between its survival and its potentially lethal investments in superstition.

Within human culture the natural-science community has emerged as a leading force in support of objective rationalization. Yet that community, defending objective thought from its basic redoubts of physics, chemistry, and biology, remains relatively small and somewhat socioculturally beleaguered. Furthermore, the natural-science community is insufficiently constituted for the cultural role that it is playing. To realize its potential for lifting the human species from the grip of superstition and propelling human progress forward along the course toward intellectual maturity, the natural-science community must expand its own intellectual resources. Human intellectual progress now depends on a natural science of human behavior, and as this essay makes clear, such a science has finally emerged from amid a plethora of intellectually compromised substitutes. The natural-science community must now fully incorporate this natural science of human behavior, because the social and intellectual progress of the human species is again stalling against a wall of unsolved problems. But this time they are *behavioral*, and only behaviorology can address them effectively.

### ***The Cultural Contribution Enabled by the Distinctiveness of Behaviorology***

The traditional natural sciences have evolved largely in the absence of a natural science of behavior-environment relations. The result is that, regardless of the scientific progress that characterizes the current era,

even most scientists find themselves without the capacity to render detailed naturalistic analytical explanations of *behavioral* phenomena, especially the human kind. Although a discipline by which to do that has been approached in biology by the ethological physiologists, the disciplinary traditions of biology have kept the various kinds of biologists strongly focused on the role of genetically determined body structure to account for behavior and on the intrinsic bodily mechanisms by which behavior manifests.

While the biological level of analysis can effectively address a question of *how* a specific response occurs bodily, it remains much less suited to address a question of *why* that specific response occurs, especially when that response represents more than a simple reflex. The latter question of *why* a response occurs, or does not occur, falls within the province of behaviorology. While both behaviorologists and biologists take environmental determinants into account, historically, it was not from strictly biological foundations that a natural science of behavior could have emerged. In general, those two disciplines operate at different levels of analysis with each of those disciplines making its respective and mutually exclusive contribution.

Behaviorology is a *natural* science of the behavior-related phenomena that the traditional social scientists of behavior have addressed, but behaviorology proceeds without their often easy reliance on the superstitious assumption of an agential behavior-determining self (A.K.A. the proactive behavior-initiating mind) that presumably lurks within the body and somehow underpins the more important of the observable behaviors that a person exhibits. The contingencies under which most traditional socio-behavioral scientists practice have never compelled them in general to separate their basic behavior-pertinent ideology from the mystical notion of a somewhat autonomous body-directing self-agent that imparts the kind of supernatural status typically implicit in the term *sentience*. Furthermore, there is little if anything in their typical social-science training programs that explicitly disabuses a trainee of such essentially mystical assumptions.

This disciplinary distinction inheres at the philosophical level of consideration. It has been the philosophy of the natural sciences that has prevented the wasteful application of the potent technical arsenal of the natural scientists on invalid questions about, for example, how many angels can dance on the head of a pin, or more realistically, questions about how a putative self (whatever that is) can “initiatively make a choice.” Likewise, behaviorologists rely on the philosophy of the natural sciences to prevent distracting and wasteful searches among the physiological features of a nervous system for a proactive mind that somehow can rather autonomously



and spontaneously initiate the behavioral activity that its host body subsequently executes. Good philosophy prevents folly in the doing of science regardless of the subject matter that is being addressed.

Today, when the world's most reputable natural scientists speak about the phenomena upon which their careers have been focused, they typically wax profoundly, usually with a well-honed philosophical and scientific sophistication. But when those same people begin to address behavior-related phenomena, they often revert uncritically to mysticism—a legacy of the highly superstitious culture in which we have all been compelled to dwell. Behaviorology is the natural scientific discipline that rids peoples' consideration of behavior of superstitious thinking just as earlier natural sciences have allowed people to expel superstition from their explanations of energy, matter, and life forms.

Only as we succeed in the expulsion of superstition from the study of behavior can we make the kind of progress with behavior that characterizes progress in the traditional natural-science fields. This essay is devoted to that cause. It urges all who would subscribe to the doctrine of naturalism to include human behavior among the phenomena subsumed by that intellectual perspective. Human behavior is arguably the class of phenomena with respect to which a naturalistic consideration may be of the greatest importance. Historically, however, the culturally-established natural-science community has remained unprepared to mount a balanced assault on the broad

spectrum of difficult problems that confront humankind, because a major class of behavior-related problems have, by default, been left in the mire of formal and informal superstition (see Ledoux, 2014, for some details).

As a result of this unbalanced scientific progress, the qualitative advance of human culture has become increasingly irregular. Current progress toward cultural maturity features awesome advances on fronts requiring little or no reliance on effective behavior science. However, such progress features a rather extreme retardation along fronts that pertain to the causality and control of human behavior. This growing imbalance in scientific capability increasingly threatens to disrupt the entire human culture, although few of its individuals (arguably far too few) are prepared to appreciate the nature of that kind of threat.

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- Fraley, L. E. (2008). *General Behaviorology: The Natural Science of Human Behavior*. Canton, NY: ABCs. (Now of Los Alamos, NM, ABCs is preparing a three-volume edition, although the 2020 health crisis is slowing progress on this 1,600-page project.)
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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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All accepted pieces must contribute to the behaviorology discipline (e.g., by relating to or clarifying or expanding some aspect of the discipline such as the philosophical, conceptual, theoretical, experimental, applied, or interdisciplinary aspects). Accepted pieces must also be crafted in ways that convey as much consistency as possible with the principles, concepts, practices, philosophy, and terminology of the discipline.

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**T**<sub>I</sub>**B**<sub>I</sub>, 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 [AKA behavioral naturalism];

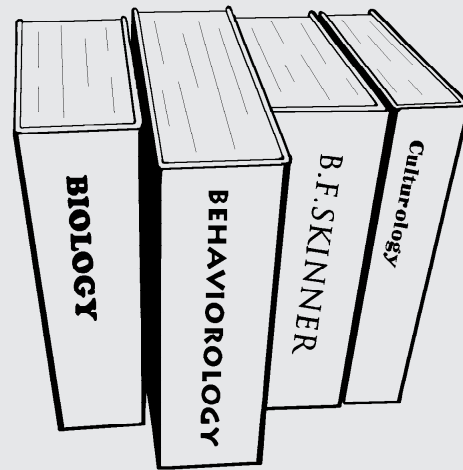
- B. to nurture experimental and applied research analyzing the effects of physical, biological, behavioral, and cultural variables on the behavior of organisms, with selection by consequences being an important causal mode relating these variables at the different levels of organization in the life 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.☺

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*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.)☺

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