

Behaviorology Today

ISSN 1536-6669

Magazine of TIBI: The International Behaviorology Institute

Behaviorology

Conductologia

Xingwei Xue

Gedragologie

Behaviourology

TIBI FACULTY & BOARD OF DIRECTORS MEMBERS:

John W. Eshleman, Ed.D. (Chair)

ELS, Inc.

Tucker GA

JohnEshleman@aol.com

David R. Feeney, Ed.D.*

Director of Digital Education

Fox School of Business & Management

Temple University, Philadelphia PA

DavidFeeney@aol.com

Lawrence E. Fraley, Ed.D.* (Retired)

Professor, West Virginia University at Morgantown

Route 1 Box 233A / Reedsville WV 26547

lfraley@citlink.net 304-864-3443

Glenn I. Latham, Ed.D.* (1931-2001)

Professor, Utah State University at Logan

MEMBER IN PERPETUITY

Stephen F. Ledoux, Ph.D.* (Editor, BT)

Professor, State University of New York at Canton

ledoux@canton.edu

Doreen E. Vieitez, Ed.D.

Professor, Joliet Junior College, Joliet IL

dvieitez@accesschicago.net

*TIBI CO-FOUNDER

Editorial 10: "100% Natural"

David Feeney suggested this title phrase as part of a continuing improvement and expansion effort for the Institute's web site. The opening paragraphs that visitors to the site would see first should echo that theme; they

Behaviorology Today Copyrights

While authors retain copyrights to their articles, The International Behaviorology Institute (TIBI) holds the copyright to *Behaviorology Today*, the TIBI magazine & newsletter: Copyright © 2002 TIBI, Inc.

CONTENTS

<i>Editorial 10: "100% Natural"</i>	1
<i>Quoted—</i>	
LAWRENCE E. FRALEY	2
<i>TIBI Online Syllabus for BEHG 201: The Behaviorology of Child Care Practices</i>	3
<i>Tables Of Contents for Volumes 1-4</i>	10
<i>Articles and Documents From Volumes 1-4*</i>	12
<i>Minutes of the May 2002 Meeting of the TIBI Board of Directors</i>	52
<i>Always More at behaviorology.org</i>	53
<i>Subscriptions and Back Issues</i>	54
<i>TIBIA Membership Benefits</i>	54
<i>TIBIA Membership Criteria and Costs</i>	54
<i>TIBIA Membership Application Form</i>	55
<i>TIBI / TIBIA Purposes</i>	56
<i>Periodical Information</i>	56

*This section has its own Table of Contents on p. 12

might say something like this: "Behaviorology is the independent natural science of behavior that studies the functional relations between behavior and independent variables (for instance, those found in one's species history, one's personal history, one's current situation, and one's cultural setting). By studying these relations, behaviorologists discover the natural laws governing behavior. These laws then support behavior engineering technologies applicable to a wide range of human concerns (such as in child care, education, and the world of work). As the discipline of strictly naturalistic explanations of behavior, behaviorology should not be confused with those disciplines that are based on, or accept, fundamentally mystical explanations of behavior (e.g., psychology, which is a discipline that accepts a fundamentally non-

natural agency of behavior origins, as typically represented by the “mind,” “psyche,” or “self”).”

Students are often unclear about the difference between natural science and mysticism. Dr. Jim des Lauriers, a biologist, provided some insight into this problem. In response to his letter in *Skeptical Inquirer* (March/April 2001, p. 65) I had written him: The sentiments you expressed in your letter... struck a very sympathetic chord. I too struggle every semester to “disabuse my students of their unconsciously teleological thinking,” which they demonstrate even as we are discussing the scientific analysis of verbal behavior. This is ironic as part of that discussion is about the variables that cause teleological phrasings in English. It is nearly impossible in English to speak or write in ways both that can be understood and that avoid the “ghosts in the language” (like teleology, or internal, uncaused, self-agents of human action—including normal English phrasings). (Personal Communication from Ledoux to des Lauriers, 2002 January 19.)

His reply was encouraging: “A teacher in the natural sciences could hardly fail to identify with the perspective [you] expressed. I’m an evolutionary ecologist and have been endlessly confronted by exactly the student sentiment that Fraley described [see “Quoted” after this editorial.—Ed.]. They don’t lose the sentiment as they progress through an education in the sciences... They do learn when to be abstemious about expressing their views. So then we encounter young graduate students and those doing their teacher training who are still as muddled as they were when they were freshmen. So we get people with degrees in biology happily teaching creationism in their classrooms. Since you guys evidently also have advanced students suffering from the same syndrome, I guess that the problem extends far and wide in academia... Actually, I think that, as you suggest, the problem lies in the language and in the culture’s general values. We have a way to go in trying to produce a scientifically literate electorate.” (Personal Communication from des Lauriers to Ledoux, 2002 January 31.)

Meanwhile, this is the second issue of the first volume under the new name, *Behaviorology Today*. As described in the editorial in the last issue, we have reprinted most of the past featured articles and organizational information items (such as by-laws) in the two issues of volume 5. In this issue (volume 5, number 2) we include both data based articles and book-related articles as well as our principle organizational documents. Some of these articles received some minor editing before being reprinted.

This issue also contains the Tables of Contents from each of the eight issues of the first four volumes. These contents identify the original pages for each of the articles reprinted in each of the two issues of volume 5.

This issue also includes two new articles. The first article is a short quote from an article by Lawrence E.

Fraley. It is included for its relevance to the themes of this editorial. The second article continues the series in which the syllabus for one of TIBI’s courses (available online) is printed in *Behaviorology Today*. This issue features the syllabus for TIBI’s course on the basics of parenting, BEHG 201: The Behaviorology of Child Care Practices.

Lastly, after the featured and reprinted articles in this issue, you will find the minutes of the May 2002 Board of Directors meeting and the usual organizational materials. (These include information on TIBI’s web site and membership considerations, as well as how to subscribe and how to obtain back issues.)☺☻

Quoted

Lawrence E. Fraley

West Virginia University

[This is the first of a series of quotes. One or another will appear in these pages when they are particularly relevant to one or another theme in an issue. This particular quote is presented independently even though it was originally to be a part of Editorial 10...—Ed.]

Many students want to cling to the old comfortable superstitious mysticism and may punish an instructor who presses them to move beyond that immature intellectual level, yet they want the practical effective power of behavior engineering practices that only a strict natural science perspective will support. It is an intellectual dilemma with which few people deal effectively and even fewer deal logically. Many behavior-analytic teachers, especially those who teach in applied areas, have quit asking students to adopt or even understand their philosophy, and they teach only practices that yield useful outcomes to which they can point. As a teacher of conceptual foundations in a department devoted largely to a science foundation curriculum, I have not had the luxury of entertaining that particular abdication. Besides, doing so results in the training of behavioral technicians, which is inappropriate in training programs that purport to train behavioral engineers, scientists, or technologists, all of whom need the functional quality control that philosophy imparts to practice. (pp. 300–301)☺

References

- Fraley, L.E. (1968). Adverse implications for university teaching concealed in economically driven policies. *The Behavior Analyst*, 21 (2), 289–305.☺☻

TIBI Online Syllabus for BEHG 201: The Behaviorology of Child Care Practices

Stephen F. Ledoux

SUNY-Canton

[This is another installment in the series of syllabi for TIBI's online courses. The series continues whenever there are syllabi that have yet to be printed, or that require re-printing due to substantial revisions.—Ed.]

Note #1: This syllabus contains some notes that supplement the more traditional syllabus parts. Each note is numbered for convenient reference. Some notes, like this one, have multiple paragraphs.

This syllabus is a long document. It is longer than a syllabus for a face-to-face course as it contains material that the professor would otherwise cover in person. *Hence it was designed to be printed out for reading!* Furthermore, it was designed to be used *as a task check-off list*. Please print it out and use it these ways.

Indeed, the only activity in this course for which you *must* have access to a computer is to print this syllabus so that you can see how this course works and follow the directions to complete this course. This is a matter of access, student access to education, so that everyone who wants this course can take it regardless of whether they own several computers or only have access to one in their local library or in a friend's home.

Students can, if they wish, study the topics of this course free of charge, to fulfill their own interests; they would do so simply by completing the activities described in this syllabus. Students can also study the topics of this course for TIBI (The International Behaviorology Institute) credit, perhaps toward a TIBI certificate; they would do so by paying the necessary fee to be assigned a professor to provide feedback on, and assessment of, their efforts. This course is part of several TIBI certificates, including the Behavior Literacy Certificate and a Certificate in Autism Recovery Training; contact TIBI for details.

Also, students can study the topics of this course for regular academic credit; they would do so by contacting any accredited institution of higher education that offers behaviorology courses accepted by TIBI such as the State University of New York at Canton (SUNY-Canton) at

www.canton.edu which is SUNY-Canton's web site. At SUNY-Canton this course is offered as *SSCI 135: Parenting Knowledge and Skills*. TIBI automatically accepts A or B grades from the academic-credit version of this course as equivalent to its own course toward its certificates (and C and D academic-credit grades can be remediated through TIBI for TIBI credit; contact TIBI for details). Alternatively, the work done completing the course through TIBI may make taking the course for academic credit easier; ask the professor who teaches SUNY-Canton's equivalent course about this.

The parts of this syllabus cover many topics. While the headings may be different, these include (a) the course content and objectives, (b) the text, study, and assessment materials, (c) the grading policy, (d) the necessary work-submission methods and professor feedback, and (e) the study-activity sequence and completion timelines.

Note #2: You may take this course without a prerequisite even though it is listed as having both BEHG 101 and BEHG 102 (the introduction to behaviorology sequence) as prerequisites. That listing was designed to show the *preferred* course sequence based on the relation among these three courses: the *basic* science principles (BEHG 101), followed by the applications of the principles to *general* concerns (BEHG 102), and then the application of the principles to the *specific* area of child care (BEHG 201), an area of interest to many sectors of society.

Course Description

BEHG 201: *The Behaviorology of Child Care Practices.* This course offers students of any age and interest the scientific contributions of the discipline of behaviorology that can provide or enhance their knowledge and skills of caring for children in effective, positive, non-coercive, and loving ways. These contributions include two broad areas: (a) They include some methods applicable throughout pre-adult years that encourage the prevention of the common behavior problems of these years. Some common problems that can be avoided are associated with bedtime, eating, dressing, shopping, and automobile travel. Some methods to prevent these problems include catch 'em being good, let kids help, monitor kids, orderly routines, and time out and other forms of discipline. (b) These contributions also include some methods applicable to helping distraught parents change problem behaviors that are already occurring (i.e., cure techniques, rather than prevention techniques). Other topics include toilet training, language, intelligence, creativity, achievement, reading, Aircribs, and morality.

In summary, this course introduces students to the scientific applications relevant to the effective, positive, non-coercive, and loving practices of child care and child rearing. These practices are developed in accordance with the discipline of behaviorology which is the *natural sci-*

ence of behavior. It was known originally as behavior analysis and now is known more precisely as behaviorology. This is the independent discipline of strictly *naturalistic* explanations of behavior and so should not be confused with psychology which is a discipline that accepts fundamentally *mystical* explanations of behavior (and which thus cannot be a natural science).

The history of these disciplinary developments is also considered. For example, as a name for the natural science of behavior, behavior analysis is older, and is still widely used. But it is a less accurate name than behaviorology because many psychologists claim it as a type of psychology, as this name came into use during the period when behavior analysis and psychology were sharing their history. During this 50-year period, the natural scientists of behavior, the behavior analysts, tried to get psychologists to shed their inherent mysticism and commit to a natural science. However, psychology *as a discipline* (and not necessarily as individual psychologists) did not (could not?) do so, and *that* created the basis for today's separate and independent discipline of behaviorology.

Note #3: To check out other behaviorology courses offered by TIBI, visit their locations on the TIBI web site (www.behaviorology.org).

(To check out other behaviorology courses offered by SUNY-Canton, see the list and descriptions—and in some cases, the syllabi for the online versions—on the faculty web page of the professor who teaches them [which currently is Dr. Stephen F. Ledoux; click Ledoux in the faculty directory at www.canton.edu].)

Since SUNY-Canton's behaviorology—natural science of behavior—courses carry the SSCI (i.e., social science) designator for the course numbers, an accounting is in order: These courses are natural science of behavior courses because they are concerned with behavior solely from a strictly naturalistic perspective, thereby necessarily and automatically leaving out mystical perspectives, while using scientific methods with a subject matter focused on people. (For some details, see the article by S.F. Ledoux titled Defining Natural Sciences in *Behaviorology Today*, Volume 5, Number 1, Spring 2002, pp. 34–36) Indeed, SUNY-Canton's behaviorology courses were originally proposed and approved with the BEHG (i.e., behaviorology) designator for the course numbers (e.g., BEHG 135—Parenting Knowledge and Skills). However administrators, out of concern to simplify student credit transfer, had the designator changed to SSCI because this designator is not only more common but it also is appropriate to the scientific-method-based people focus of these courses. So it would indeed simplify the transfer of credit for students. Hence, for administrative convenience, SUNY-Canton's natural science of behavior—behaviorology—courses carry the SSCI—social science—designator.

For additional details, see the article by S.F. Ledoux titled Developing Opportunities to Disseminate the Natural Science of Behavior in *Behaviorology Today*, Volume 5, Number 1, Spring 2002, pp. 50–54. (Both articles can also be found on TIBI's web site.)

Course Objectives

The main objective of the course is to expand the student's behavior repertoire in these areas of behaviorological course content:

- ✦ Origins and research foundations of advances in scientifically informed child rearing practices;
- ✦ Scientifically informed practices with respect to specific concerns (e.g., self esteem, fussy babies, spanking, sibling rivalry, tantrums, lying, thumb sucking, toilet training);
- ✦ Scientifically informed practices in various common settings (e.g., home, store, playground);
- ✦ Long term benefits of scientifically informed practices (e.g., reducing child abuse, enhancing school success, increasing loving relationships);
- ✦ Scientifically consistent recommendations for cases in which all else fails.

Additional Objectives

✦ Successful, A earning students will use (at an accuracy level of 90% or better) basic disciplinary terminology both when discussing behaviorological knowledge, and when applying behaviorological skills, relevant to parenting and child care.

✦ Such successful students will also ask questions, seek answers, converse about, and act on the uses and benefits of this discipline for humanity.

✦ Such successful students will also behave more effectively in other ways with respect to themselves and others.

Required Materials (in their order of use)

✦ Latham, G.I. (1994). *The Power of Positive Parenting*. Logan, UT: P&T ink. (We refer to this book as the PPP book. [ISBN 1-56713-175-1])

✦ Ledoux, S.F. (2000). *Study Questions for Glenn Latham's The Power of Positive Parenting*. Canton, NY: ABCs. (We refer to this book as the PPP-Study Questions [SQs] book. [ISBN 1-882508-15-7])

✦ (A/V) Latham, G.I. (2-part video program). *The Making of a Stable Family*. Logan, UT: P&T ink. (We refer to these video tapes as the *Stable Family* videos. You will be watching this program twice, as will be explained in the Course Contents Coverage Checklist section.)

✦ (A/V) Latham, G.I. (2-cassette program). *Parenting Prescriptions*. Logan, UT: P&T ink. (We refer to these audio tapes as the *Parenting Prescriptions* audios.)

✦ (A/V) Latham, G.I. (2-cassette, or 2-CD program). *An Angel Out of Tune*. Logan, UT: P&T ink. (We refer to these audio programs as the *Angel* audios.)

Note #4: The simplest way to order most of the required *books* and *A/V items* is through the publisher, *P&T ink*, at either 435-752-5749 or—toll free—(for credit-card orders only) at 1-888-750-4814. Other required and recommended *books* and *A/V items* can be ordered either through the online bookstore at www.behavior.org which is run by the Cambridge Center for Behavioral Studies, or through the College Association Bookstore at www.canton.edu (or call 1-315-386-7112 to speak directly with bookstore staff).

Recommended Materials

These are references to materials that, while not required for the course, may also be of interest to those who wish to go deeper into the course topics and extensions:

✧ Latham, G.I. (2-part video program). *The Teenage Years: Your Window of Opportunity*. Logan, UT: P&T ink. (We refer to these video tapes as the *Teen Years* videos. They may not yet be available.)

✧ Latham, G.I. (1999). *Parenting with Love: Making a difference in a day*. Salt Lake City, UT: Bookcraft. [ISBN 1-57008-661-3; 110 pages; 6 x 9; about \$10; softcover.]

✧ Latham, G.I. (1997). *What's a Parent to Do?* Salt Lake City, UT: Deseret Book Co. [Incorporating LDS (Mormon) theology; ISBN 1-57345-228-9; 221 pages; 6 x 9; about \$16; hardcover.]

✧ Latham, G.I. (1999). *Christlike Parenting: Taking the pain out of parenting*. Seattle, WA: Gold Leaf Press. [Incorporating Christian theology; ISBN 1-882723-40-6; 208 pages; 6 x 9; about \$23; hardcover.]

✧ Latham, G.I. (1997). *Behind the Schoolhouse Door: Eight Skills Every Teacher Should Have*. Logan, UT: P&T ink. [About \$10; helps parents assure school doesn't undue their better home environment.]

✧ Latham, G.I. (1999). *Management, Not Discipline: A Wake-up Call for Educators*. Logan, UT: P&T ink. [Same point as above...; about \$10.]

✧ Latham, G.I. (1998). *Keys to Classroom Management*. Logan, UT: P&T ink. [Full expansion of same point as above...; about \$17.]

✧ Ledoux, S.F. (2000). *Study Questions for Glenn Latham's Keys to Classroom Management*. Canton, NY: ABCs. [ISBN 1-882508-14-9; about \$20.]

✧ Latham, G.I. (1-cassette tape program of a presentation at an international conference for parents). *Behind the Schoolhouse Door: Eight Skills Every Teacher Should Have*. Garden City, NY: Eyedears A/V. [516-739-8864 for tape # 20-ASAT-12; about \$12.]

✧ Latham, G.I. (6-part video program). *Managing the Classroom Environment to Facilitate Effective Instruction*. Logan, UT: P&T ink.

Most of the recommended materials can be ordered from the same sources that supply the required materials.

Dr. Latham is not the only author of quality materials on these topics. However, his peers have judged his work to be the very best available. (For example, see About the Book on p. vii in *Study Questions for Glenn Latham's The Power of Positive Parenting*.) Hence his works are used for this course.

Also, this course is grounded in the Shaping Model of Education which is informed by behaviorological science (rather than the Presentation Model of Education which is informed by psychology). In the shaping model teaching is not seen as mostly talking (nor is learning seen as mostly listening). Instead, teaching is the scientifically grounded design, arrangement, and application of educational materials, methods, and contingencies in ways that generate and maintain small but continuously accumulating behaviors the short and long range consequences of which are successful in producing an ever wider range of effective responding (i.e., learning) on the part of the student.

Grades

Grading policy does not involve curves, for you are not in competition with anyone (except perhaps yourself). That is, all students are expected to produce the academic products demonstrating that they have, individually, achieved at least mastery of the subject matter, if not fluency. Therefore, all students are expected to earn an A or a B (although inadequate products will produce a lower result that requires remediation before it can become a passing grade). Also, all students will receive the grades they earn. This holds even if the expectation for which the course is designed—that all students earn *As*—is met: If all earn *As*, then all receive *As*.

Passing grades are limited to A and B, and are earned according to the amount of assigned work that is successfully completed:

Earning an A consists mainly of satisfactorily completing 90% or more of the work both on the assignments (A/V, web-log, and story) and on the textbook and its study questions.

Earning a B consists mainly of satisfactorily completing more than 80% of the work both on the assignments (A/V, web-log, and story) and on the textbook and its study questions (but not more than 90% on both of them).

For convenience a point-accumulation system is invoked to keep track of progress through the course. Two of the 27 chapter assignments on *The Power of Positive Parenting* and its sqs, Chapters 3 and 27, are long and so earn 25 and 15 points respectively. Four other chapter assignments, Chapters 14, 15, 16, and 17, are so short that they each earn 5 points. The other 21 chapters each earns 10 points. All together the 27 chapter assignments earn a total of 270 points. Each of the eight Audio/Visual assignments is also worth 10 points, for a total of 80 points. The web-log assignment is worth 20 points. And the

half-page story writing assignment is worth 30 points. This provides a grand total of 400 possible points. The grade that you receive is partly based on the percentage of these possible points that you actually earn.

However, point accumulation is not the grade determiner but is merely used as a convenient way to track progress *on the presumption that all course tasks are in progress*. This is because doing work on *all* of the tasks for the course is the more relevant determiner of grades than the accumulation of points. (For example, a student who tries to accumulate just enough points, on some easier tasks, to get a B—while ignoring other course tasks—would not that way actually meet the criteria for a B and so would have to continue and complete all the required work satisfactorily to earn one of the passing grades.)

Also, students should expect to be asked occasionally to complete various test-like assessments. The level of success on these assessments helps gauge the extent to which the work on the course assignments is actually producing the learning implied by the completion of that work.

These practices are in place because the scientific research based Shaping Model of Education recognizes the student/professor relationship as a professional relationship in which coercive practices (i.e., aversive educational practices) are seen as inappropriate (so long as extreme conditions do not exist making such practices unavoidable). Instead, the more effective, efficient, and productive non-coercive practices of carefully designed and sequenced assignments emphasizing added reinforcement for timely work well done is generally seen as more appropriate. So, your effort and cooperation are expected and presumed; please do not disappoint either your professor or yourself.

About using the textbooks and the study question book

You need to write out your answers in longhand. The reason you are to write out your answers by hand is that this type of verbal response brings about more learning than merely saying—or even typing—the answer. This is because—as taught in a more advanced behaviorology class—writing the answer in longhand involves both point-to-point correspondence and formal similarity between the stimuli and the response products of the answer. This applies to writing out the answers for all assignments.

The PPP book

The *Power of Positive Parenting* book details the scientific contributions of behaviorology that can produce or enhance the knowledge and skills of caring for children in effective, positive, non-coercive, and loving ways that are solidly grounded in, and validated by, extensive scientific research. Read the assigned chapters of the book and answer the assigned study questions that cover those

chapters. (Since the slowest self-pacing plan involves chapter/study question assignments ranging in length from 20 to 40 pages, you will cover an average of about 30 pages per week. As chapter lengths vary from 5 to 50 pages, this works out to covering less than one long chapter in some weeks, and up to four short chapters in other weeks.)

The PPP Study-Questions book

The *Power of Positive Parenting* study questions were prepared to help you expand your behavior repertoire based on the material from each of the chapters in the book. You are to complete each chapter's study questions as assigned because learning occurs when reinforced responses are made (like writing question answers), especially responses that automatically provide their own reinforcing consequences (like being right) as does writing out study question answers correctly. You complete the assigned study questions, *after reading the chapter through*, by *writing out* the answer to each question when you come to it as you *reread* the chapter. You *write out* the answers right in the *Study Question* book. Write out your answers in full sentences that incorporate the questions.

The study questions book starts with a section titled To the Student and Teacher. *Read this section first!* It explains more on how to do the study questions successfully. (You will also find it helpful to mark the number of each SQ in the margins of the *PPP* book at the location of the SQ's answer...) Assignments will be given in the Course Contents Coverage Checklist section.

To submit your work (if you are taking the course for TIBI credit), scan and fax the completed pages of each assignment to your professor. Or (Preferred!) photocopy those pages and send them to your professor by regular postal mail. (Addresses and phone/fax numbers will be clarified upon enrollment.) You are to keep the original of your work both to insure against loss and to make it easier for you and your professor to communicate about your work (as you will then both have an identical copy). Email, and email attachments, are neither reliable enough for this purpose, nor identical enough for this purpose, so they are not to be used for this purpose.

Your answers will be perused, and point accumulations will be allocated according to the quality of your work. Should any inadequacies be apparent, you will be informed so that you can make improvements. While sometimes your professor will provide a metaphorical pat on the back for a job well done, if you do not hear of any inadequacies, then pat yourself on the back for a job well done even as you continue on to the next assignment.

Note #5: Since you are to write out your answers to the study questions directly in the SQ book, you need to have your own study question book. To assure that this is followed by everyone equally, you need to fill out and send in to your professor (by regular postal

mail) the original ownership form in the rear of your study question book.

The Audio/Visual (A/V) assignments

An important component of the course is to provide you with a series of audio-visual (A/V) experiences that extend your homework-based book-learning toward the area of skill development. Watch the video programs, and listen to the audio programs, when they are scheduled. And during each assigned A/V activity, *you need to write out a continuous outline/summary of the material* on regular 8.5 x 11 binder paper (as if you were taking sophisticated notes at a lecture).

To submit your work (if you are taking the course for TIBI credit), scan and fax the outlines/summaries to your professor. Or (Preferred!) photocopy those pages and send them to your professor by regular postal mail. (Addresses and phone/fax numbers will be clarified upon enrollment.) You are to keep the original of your work both to insure against loss and to make it easier for you and your professor to communicate about your work (as you will then both have an identical copy). Email, and email attachments, are neither reliable enough for this purpose, nor identical enough for this purpose, so they may not be used for this purpose.

Your outlines/summaries will be perused, and point accumulations will be allocated according to the quality of your work. Should any inadequacies be apparent, you will be informed so that you can make improvements. Meanwhile, continue with the next assignment.

The Web-Log assignment

This short, written assignment requires you to create a one to two page *typed* log of a 1 to 2 hour visit to three specific web links that can be found on the faculty web page of Dr. Stephen F. Ledoux (click on Ledoux in the faculty directory at www.canton.edu). The three sites you are to visit are the TIBI site, Glenn Latham's Parenting Prescriptions site, and the Cambridge Center for Behavioral Studies site. Your log should include not only the times, locations, sequences, and durations of your visit, but also your account of the best things you learned at these sites, plus any interesting discoveries worthy of return visits. You may begin this assignment anytime *after* completing Chapter 3 and its study questions. You should submit this assignment *before* you start Chapter 14 which allows a period of 4 weeks to complete it.

To submit your work (if you are taking the course for TIBI credit), *you may email* (Preferred!) your web-log to your professor. Or, you may scan and fax it to your professor. Or you may photocopy it and send it to your professor by regular postal mail. (Addresses and phone/fax numbers will be clarified upon enrollment.) You are to keep the original of your work both to insure against

loss and to make it easier for you and your professor to communicate about your work (as you will then both have a copy). Email *attachments*, are neither reliable enough for this purpose, nor identical enough for this purpose, so they are not to be used for this purpose.

Your web-log will be perused, and points will be allocated according to the completeness of your work. Should any inadequacies be apparent, you will be informed so that you can make improvements. Meanwhile, continue with the next assignment.

The Story-Writing assignment

This short, written assignment requires that you create a one-half to one page long story that conveys to others—young and old alike—one of the many elements of positive parenting. You may begin this assignment anytime *after* completing Chapter 3 and its study questions. You should submit this assignment *before* you start Chapter 27. Here is an example which is one-half page in length (and to make things easier, you may use the characters of Jamie and Mr. Glenn, from this example, in your own story if you wish):

Jamie's Lesson

Have you seen other kids doing mean things? And have you seen others doing nice things?

Well, this is a story about Jamie, and about an early lesson she had on helping others learn to do nice things.

Jamie and her classmates were out on the playground. It was the middle of winter, with a cold sun in the bright blue sky, and a thin glaze of ice on the ground.

However their teacher, Mr. Glenn, saw Jamie off to one side, sniffing. Going over to her, he asked, "Jamie? Are you okay?"

"I don't like Freddy!" she replied rather abruptly. "He's so mean. He said I was clumsy, just because I slipped on the ice..."

"I can understand why you are upset," Mr. Glenn said calmly. "It's hard when other people do things that hurt your feelings."

"And everyone laughed, too," Jamie added, softening a little.

"It's even harder when others give attention to bad things," Mr. Glenn continued pleasantly. "We have talked in class about a better way to handle these things. What is that better way?"

After a pause, Jamie replied, "We said it's better to pay attention when people do good things." But then she added, "But Freddy doesn't do any good things!"

"Well," Mr. Glenn said, "at times like these, it *is* hard to see good things. But tell me just one thing Freddy has done recently that was good."

"Well," Jamie said, deep in thought. Then, beaming, she said, "Yesterday I saw him go right over to a little kid who fell off the slide, and see if he was okay... And, this morning he helped pick up a box of spilled pencils—and he wasn't even the one who spilled them. That was nice of him."

"Wow!" said Mr. Glenn. "That's great. That's two things!" After a short pause, he added, "Did you tell him you thought that was nice of him?"

"...Oops," said Jamie.

"You can still tell him, if you want to," said Mr. Glenn. "That will still help him do more good things, and become a better person."

"That would be good," Jamie replied. "I will!" And off she went to do so.

You can do that too. Just once today, try to notice something good that someone does, and let them know it was nice. Do that every day, and you will surely make a better world.

To submit your work (if you are taking the course for TIBI credit), *you may email* (Preferred!) your story to your professor. Or, you may scan and fax your story to your professor. Or you may photocopy it and send it to your professor by regular postal mail. (Addresses and phone/fax numbers will be clarified upon enrollment.) You are to keep the original of your work both to insure against loss and to make it easier for you and your professor to communicate about your work (as you will then both have an identical copy). Email *attachments*, are neither reliable enough for this purpose, nor identical enough for this purpose, so they are not to be used for this purpose.

Your story will be perused, and points will be allocated according to the accuracy of the scientific aspects of your story. Should any inadequacies be apparent, you will be informed so that you can make improvements. Meanwhile, continue with the next assignment.

Course Content Coverage Checklist

Students should work their way through the course by reading and studying the texts, answering the questions, writing outlines/summaries of the A/V materials while viewing and/or listening to them, writing their short story, and sending in their work for each assignment in this list (which can be used as a check off list):

(This list is *not* the sequence in which you should do the assignments. Do them in the sequence presented in the self-pacing, weekly, time-allocation list even if you do them at a faster pace than the pace presented there.)

A. The *PPP* text and its study questions book, the Foreword, Note, & Ch. 1.

B. The *PPP* text and its study questions book, Ch. 2.

C. The *PPP* text and its study questions book, Ch. 3, (pp. 37-59 with SQ #s 1-55).

D. The *PPP* text and its study questions book, Ch. 3, (pp. 59-86 with SQ #s 56-89).

E. The *PPP* text and its study questions book, Ch. 4.

F. The *PPP* text and its study questions book, Ch. 5.

G. The *PPP* text and its study questions book, Ch. 6.

H. The *PPP* text and its study questions book, Ch. 7.

I. The *PPP* text and its study questions book, Ch. 8.

J. The *PPP* text and its study questions book, Ch. 9.

K. The *PPP* text and its study questions book, Ch. 10.

L. The *PPP* text and its study questions book, Ch. 11.

M. The *PPP* text and its study questions book, Ch. 12.

N. The *PPP* text and its study questions book, Ch. 13.

O. The *PPP* text and its study questions book, Ch. 14.

P. The *PPP* text and its study questions book, Ch. 15.

Q. The *PPP* text and its study questions book, Ch. 16.

R. The *PPP* text and its study questions book, Ch. 17.

S. The *PPP* text and its study questions book, Ch. 18.

T. The *PPP* text and its study questions book, Ch. 19.

U. The *PPP* text and its study questions book, Ch. 20.

V. The *PPP* text and its study questions book, Ch. 21.

W. The *PPP* text and its study questions book, Ch. 22.

X. The *PPP* text and its study questions book, Ch. 23.

Y. The *PPP* text and its study questions book, Ch. 24.

Z. The *PPP* text and its study questions book, Ch. 25.

AA. The *PPP* text and its study questions book, Ch. 26.

BB. The *PPP* text and its study questions book, Ch. 27.

CC. The *first* of the two *Stable Family* video tapes.

(These will be watched twice, once as you begin reading the textbook, and again as you near the end of the textbook. This first time will mostly be to associate a face and voice to your textbook author so that when you read the book, you can see and hear the author talking to you.)

DD. The *second* of the two *Stable Family* video tapes.

EE. The *first* of the two *Parenting Prescriptions* audio cassette tapes.

FF. The *second* of the two *Parenting Prescriptions* audio cassette tapes.

GG. The *first* of the two *Angel* audio CDs or cassette tapes.

HH. The *second* of the two *Angel* audio CDs or cassette tapes.

II. The *first* of the two *Stable Family* videos again, emphasizing what seems new now that you have covered so much else already.

JJ. The *second* of the two *Stable Family* videos again, emphasizing what seems new now that you have covered so much else already.

KK. The web-log assignment.

LL. The story-writing assignment.

Note #6: The usual higher education workload expectation for a course is about 150 hours. This can be accomplished at rates ranging from about 50 hours per week over three weeks to about ten hours per week over the typical 15 weeks of a semester. Of course, some students may take a little less than 150 hours, while others may

take more than 150 hours, to do the work to the same acceptable and expected standard.

You can—and are encouraged to—go through the assignments as rapidly as your schedule allows. This could mean spending a typical 15 weeks on the course. Or it could mean doing the whole course in as little as—but not in less than—3 weeks, as one would progress through the *single* allowed course in a 3-week summer school term. That is, you could work on the course part-time (e.g., at the rate of 10 hours per week) or full-time (i.e., at the rate of about 50 hours per week).

If you are to be successful, you need to exercise some self-management skills by starting immediately and keeping up a reasonable and steady pace on the course work. You need to do this because your professor will *not* be reminding you that the products of your work are due; all the course work is set forth in this syllabus and so is automatically assigned. You are expected to follow through on your own. You need to set an appropriate pace for yourself (or accept the pace in the *Time Allocation Sequence* at the end of this syllabus) and adhere to that pace, and thereby get the sequence of assignments done and submitted to your professor.

Time Allocation Sequence

Referring to the assignment letter codes in the *Course Content Coverage Checklist*, the slowest reasonable self-pacing of the coursework (presuming a typical 15-week semester) would involve time allocations like these:

Week 1: Assignments A & CC: the *PPP* text, the Foreword, Note, & Ch. 1, and the *first* of the two *Stable Family* video tapes.

Week 2: Assignments B & DD: the *PPP* text, Ch. 2, and the *second* of the two *Stable Family* video tapes.

Week 3: Assignment C: the *PPP* text, Ch. 3 (pp. 37–59 with SQ #s 1–55).

Week 4: Assignments D: the *PPP* text, Ch. 3 (pp. 59–86 with SQ #s 56–89).

Week 5: Assignments E, F, EE, & [begin] KK & LL: the *PPP* text, Chs. 4 & 5, the *first* of the two *Parenting Prescriptions* audio cassette tapes, and begin the web-log and story-writing assignments (and finish them before *PPP* Ch. 14 and Ch. 27 respectively).

Week 6: Assignments G, H, & FF: the *PPP* text, Chs. 6 & 7, and the *second* of the two *Parenting Prescriptions* audio cassette tapes.

Week 7: Assignments I, J, & K: the *PPP* text, Chs. 8, 9, & 10.

Week 8: Assignments L, M, N, & GG [& finish KK]: the *PPP* text, Chs. 11, 12, & 13, and the *first* of the two *Angel* audio CDs or cassette tapes (and finish the web-log assignment).

Week 9: Assignments O, P, Q, & R: the *PPP* text, Chs. 14, 15, 16, & 17.

Week 10: Assignments S, T, U, & HH: the *PPP* text, Chs. 18, 19, & 20, and the *second* of the two *Angel* audio CDs or cassette tapes.

Week 11: Assignments V & W: the *PPP* text, Chs. 21 & 22 (and continue [Finish?] the story-writing assignment).

Week 12: Assignments X, Y, & II: the *PPP* text, Chs. 23 & 24, and the *first* of the two *Stable Family* videos again, emphasizing what seems new now that you have covered so much else already.

Week 13: Assignments Z, AA, & JJ: the *PPP* text, Chs. 25 & 26, and the *second* of the two *Stable Family* videos again, emphasizing what seems new now that you have covered so much else already.

Week 14: Finish assignment LL: the story-writing assignment.

Week 15: Assignment BB: the *PPP* text, Ch. 27.

If you go slower than that, assignments could easily back up on you to the point where insufficient time remains to complete them in a satisfactory manner.

Note #7: Be sure that everything you submit is readable and contains your name!

At various points in the course, you will be provided with feedback about your work. Upon completing all the coursework, you will be provided with your earned grade. (The grade is provided solely for the person whose work earned the grade.)☺☺



Tables of Contents for Volumes 1-4

All on time, Spring (#1) & Fall (#2): 1998, 1999, 2000, & 2001.

VOLUME 1, NUMBER 1

<i>Welcome to TIBI: Editorial</i>	1**
<i>Possible Geographically Based Behaviorology Associations</i> STEPHEN F. LEDOUX	3**
<i>China Through the Eyes of a Behaviorologist</i> GLENN I. LATHAM	4**
<i>Supporting Both our Science and the Other Components of our Discipline</i> STEPHEN F. LEDOUX	7**
<i>By-laws TIBI</i>	10*
<i>Introducing a Visiting Scholar</i> MA WEN	16**
<i>"behaviorology.org": An Action Plan</i> DAVID R. FEENEY	17*
<i>Advancing an Independent Discipline on All Fronts</i> LAWRENCE E. FRALEY	20**
<i>Carl Sagan is Right Again: A Review of The Millennium Man</i> STEPHEN F. LEDOUX	21*
<i>DataShare: Show and Tell your Databased Work</i> DAVID R. FEENEY	24*
<i>Treasurer's Report</i>	26
<i>TIBIA Membership Criteria and Costs</i>	26
<i>TIBIA Membership Application Form</i>	27
<i>TIBI / TIBIA Purposes</i>	28

VOLUME 1, NUMBER 2

<i>TNT-2 News: Editorial</i>	1
<i>A Member's Perspective</i> NORMAN SOMACH	2*
<i>A Summary of Progress in Disciplinary Development</i> STEPHEN F. LEDOUX	2**
<i>TNT-2 Treasurer's Report</i>	6
<i>TIBIA Membership Criteria and Costs</i>	6
<i>TIBIA Membership Application Form</i>	7
<i>TIBI / TIBIA Purposes</i>	8
<i>TNT Information</i>	8

VOLUME 2, NUMBER 1

<i>TNT-3 News: Editorial</i>	1
<i>Minutes of the 1998 Meeting of the TIBI Board of Directors</i>	2
<i>What We Told the IRS & NYS TIBI TREASURER</i>	4
<i>TIBI Policies and Procedures BOARD OF DIRECTORS</i>	5*
<i>TNT-3 Treasurer's Report</i>	18
<i>TIBIA Membership Benefits</i>	18
<i>TIBIA Membership Criteria and Costs</i>	18
<i>TIBIA Membership Application Form</i>	19
<i>TIBI / TIBIA Purposes</i>	20
<i>TIBI / TNT Information</i>	20

* ALSO IN THIS ISSUE

** ALSO IN VOLUME 5, NUMBER 1

VOLUME 2, NUMBER 2

<i>TNT-4 News: Editorial</i>	1
<i>Announcing Behaviorology.Anywhere</i> DAVID R. FEENEY	2
<i>Using Data to Measure Pedagogical Change Effectiveness</i> MA WEN	3*
<i>Minutes of the 1999 Meetings of the TIBI Board of Directors</i>	4
<i>TNT-4 Treasurer's Report</i>	6
<i>TIBIA Membership Benefits</i>	6
<i>TIBIA Membership Criteria and Costs</i>	6
<i>TIBIA Membership Application Form</i>	7
<i>TIBI / TIBIA Purposes</i>	8
<i>TIBI / TNT Information</i>	8

VOLUME 3, NUMBER 1

<i>TNT-5 News: Editorial</i>	I
<i>Separate Discipline Status Corroborated Again</i> LI FANGJUN	2**
<i>Methods for Pedagogical Success with The Millennium Man</i> STEPHEN F. LEDOUX	3*
<i>Why Focus on Behavior</i> JOHN W. ESHLEMAN	5*
<i>The Discipline of Behaviorology</i> LAWRENCE E. FRALEY	8**
<i>TNT-5 Treasurer's Report</i>	9
<i>Always More at TIBI's Web Site</i>	9
<i>TIBIA Membership Benefits</i>	10
<i>TIBIA Membership Criteria and Costs</i>	10
<i>TIBIA Membership Application Form</i>	11
<i>TIBI / TIBIA Purposes</i>	12
<i>TIBI / TNT Information</i>	12

VOLUME 3, NUMBER 2

<i>NT-6 News: Editorial</i>	I
<i>If Telling Were Teaching...</i> JOHN W. ESHLEMAN	2**
<i>About Behaviorology</i> LAWRENCE E. FRALEY	4**
<i>Defining Natural Sciences</i> STEPHEN F. LEDOUX	6**
<i>Behaviorology in China: A Status Report</i> A Chinese Translation MA WEN & LI LAISHOU	9**
<i>Minutes of the 2000 Meeting of the TIBI Board of Directors</i>	17
<i>Always More at behaviorology.org</i>	17
<i>TNT Subscriptions and Back Issues</i>	18
<i>TIBIA Membership Benefits</i>	18
<i>TIBIA Membership Criteria and Costs</i>	18
<i>TIBIA Membership Application Form</i>	19
<i>TIBI / TIBIA Purposes</i>	20
<i>TIBI / TNT Information</i>	20

VOLUME 4, NUMBER 1

<i>TNT-7 News: Editorial</i>	I
<i>The Discipline of Behaviorology and the Postulate of Determinism</i> LAWRENCE E. FRALEY	2**
<i>Critical Thinking and a Scientific Worldview: How Students' Thinking May Be Changed Upon Reading The Millennium Man</i> W. JOSEPH WYATT	7*
<i>Developing Opportunities to Disseminate the Natural Science of Behavior</i> STEPHEN F. LEDOUX	9**
<i>TNT-7 Treasurer's Report</i>	13
<i>Always More at behaviorology.org</i>	13
<i>TNT Subscriptions and Back Issues</i>	14
<i>TIBIA Membership Benefits</i>	14
<i>TIBIA Membership Criteria and Costs</i>	14
<i>TIBIA Membership Application Form</i>	15
<i>TIBI / TIBIA Purposes</i>	16
<i>TIBI / TNT Information</i>	16

VOLUME 4, NUMBER 2

<i>TNT-8 News: Editorial</i>	I
<i>Defining the Behaviorology Movement: Critical Distinctions from 1990</i> LAWRENCE E. FRALEY	3**
<i>Two Listservs as Online Magazines</i> DAVID R. FEENEY	8**
<i>Charles Darwin, Behaviorist</i> JOHN W. ESHLEMAN	9*
<i>A Parable of Past Scribes and Present Possibilities</i> STEPHEN F. LEDOUX	12**
<i>Minutes of the 2001 Meeting of the TIBI Board of Directors</i>	16
<i>Always More at behaviorology.org</i>	17
<i>TNT Subscriptions and Back Issues</i>	18
<i>TIBIA Membership Benefits</i>	18
<i>TIBIA Membership Criteria and Costs</i>	18
<i>TIBIA Membership Application Form</i>	19
<i>TIBI / TIBIA Purposes</i>	20
<i>TIBI / TNT Information</i>	20

Articles and Documents From Volumes 1-4

This section contains the data-based articles, book-related articles, and our principle organizational documents that were featured in volumes 1 to 4 of the newsletter/magazine that was originally named *TIBI News Time* and is now named *Behaviorology Today*. (In the previous issue [volume 5, number 1] we included the conceptual articles, related both to the behaviorology discipline and to education, that had been featured in those volumes.) These reprinted articles generally appear in the same order as their original appearance. Also, some of these articles received additional minor editing before being reprinted. Relevant comments from earlier editorials appear after the author's affiliation or at appropriate points in the text. Wherever meaningful, the most recent versions of the references are the ones cited. As indicated in this issue's *Table of Contents*, this section has its own table of contents which is presented here.—Ed. ☺

CONTENTS

<i>Why Focus on Behavior</i> JOHN W. ESHLEMAN	12
<i>"behaviorology.org": An Action Plan</i> DAVID R. FEENEY	15
<i>Charles Darwin, Behaviorist</i> JOHN W. ESHLEMAN	18
<i>DataShare: Show and Tell your Databased Work</i> DAVID R. FEENEY	21
<i>Carl Sagan is Right Again: A Review of The Millennium Man</i> STEPHEN F. LEDOUX	23
<i>Critical Thinking and a Scientific Worldview: How Students' Thinking May Be Changed Upon Reading The Millennium Man</i> W. JOSEPH WYATT	25
<i>Methods for Pedagogical Success with The Millennium Man</i> STEPHEN F. LEDOUX	28
<i>Using Data to Measure Pedagogical Change Effectiveness</i> MA WEN	30
<i>A Member's Perspective</i> NORMAN SOMACH	31
<i>By-laws</i> TIBI	32
<i>TIBI Policies and Procedures</i> BOARD OF DIRECTORS	38

Why Focus on Behavior

John W. Eshleman

ELS, Inc.

1999 November 19

Copyright © 1999 by John W. Eshleman, Ed.D. All rights reserved.

A person might peruse my Instructional Systems website (<http://members.aol.com/JohnEshleman/index.html>) and wonder, "why all the emphasis on behavior?"

There does not appear to be any mention of cognitive processes, information, or the methods by which teaching is "normally" done on the site. One might well ask, why all the focus on behavior? Does that mean that the important cognitive processes can not or will not rate consideration? Does that mean that an instructional system built around behavior can not or will not handle cognition?

I think that a well-designed instructional system, and yes, one built around behavior, can and will address all of the cognitive process and informational issues—and then some. But, let us analyze the term "cognitive processes." As I see it, the term "cognitive processes" usually refers either to a repertoire of behavior or to low-amplitude verbal behavior. In some cases, it might even refer to both a repertoire and low-amplitude verbal behavior. In other cases cognitive processes, if presented as explanations for behavior, could turn out to be explanatory fictions. I will deal with each of these possibilities.

Repertoires

A repertoire consists of a set of different behaviors. The set of behaviors has some overall purpose, function, or effect. The behaviors in the set may occur in a fixed sequence, a partially fixed sequence, or vary in no particular sequence. The behaviors may occur in a chain, be concurrent, or both. The sequence or chain may include repetitions of the same behavior. Each particular behavior "operates" on the person's environment in some way.

Each particular behavior produces an effect. In some cases, the effect produced allows another behavior in the repertoire to occur.

To turn that statement around, some behaviors may require other behaviors to occur first.

Operating a motor vehicle represents an example of a repertoire. When you drive a car, for instance, driving refers to a set of related behaviors. The behaviors are related with respect to effective and successful operation of the

motor vehicle. The set includes starting the car, shifting gears, steering, watching out for traffic and other objects, braking, signaling, accelerating, putting on a seat belt, adjusting the mirrors, stopping the car, and so on. Some behaviors require a sequence. For instance, you must first turn on the ignition to start the car before you shift it into gear or steer it. Steering normally requires that the car engine be on, and the car be in motion.

Other repertoires work pretty much the same way. Say that you need to analyze some process, for instance. To analyze something means that you separate it into its basic components, and identify the relationships among the components. The “cognitive process” of conducting an analysis consists of many different behaviors.

The repertoire involved in “analyzing” may include basic reading and writing skills, making lists, identifying and classifying terms in a list, defining terms, drawing a schematic or a diagram, circling items on a diagram and drawing lines between them, measuring quantities, lining up measured values, stating constituent parts, stating relationships between parts, and so on. Some of these behaviors themselves are repertoires that can be broken down further into behavioral elements. For instance, defining a term requires that one be able to read, write, look up words in a dictionary, copy a definition, write a definition in “one’s own words,” write about limits or exceptions, and maybe give examples. When you express it this way, some of the mystery of the cognition goes away. Moreover, if a person has difficulty with a higher-order skill such as conducting an analysis, one might be able to determine which component behaviors are missing or weak, and teach directly to these components.

Low-Amplitude Verbal Behavior

Some cognitive processes may simply be the same as verbal behavior, but where the behavior occurs at a very low amplitude. Behaviorists have struggled with this problem. In a sense, the problem alludes back to the old “mind-body” distinction. One can see a body move, but the mind appears to be out of direct sight and thus “internal.” Accordingly, when referring to some types of thinking, or behavior, behaviorists speak about “inner” behavior, “covert” behavior,” or “private events.” These terms perpetuate the dualism, however. They also seem to miss out on the basic, underlying fact that the whole organism lives, behaves, and learns. To me, much of what we mean by thinking simply refers to low amplitude verbal behavior. An example of low amplitude verbal behavior might be the “conversation” one has “in one’s head.” Such a “conversation” refers to a sequence of verbalizations. This means speaking. But it means speaking at a low amplitude, one insufficient to produce sound or even

to result in much movement of the vocal musculature. By considering such “private” verbal behavior as the same behavior as the overt, public verbal behavior, but differing in level of amplitude, one not only avoids the “mind-body” dualism problems, one also avoids the various problems related to use of terms such as “inner,” “covert,” and “private.”

Behavior analysts have typically ignored the amplitude dimension of behavior. It rarely surfaces in the published scientific literature of behavior analysis. A rare exception, B.F. Skinner, in his book *Verbal Behavior* (1957) refers to, and loosely describes, an amplitude scale as it applies to verbal behavior:

The theory that thinking was merely subaudible speech had at least the favorable effect of identifying thinking with behaving. But speech is only a special case of behavior and subaudible speech a further subdivision. The range of verbal behavior is roughly suggested, in descending order of energy, by shouting, loud talking, quiet talking, whispering, muttering “under one’s breath,” subaudible speech with detectable muscular action, subaudible speech of unclear dimensions, and perhaps even the “unconscious thinking” sometimes inferred in instances of problem solving. There is no point at which it is profitable to draw a line distinguishing thinking from acting on this continuum. So far as we know, the events at the covert end have no special properties, observe no special laws, and can be credited with no special achievements. (p. 438).

Skinner’s “range of verbal behavior” refers to an amplitude scale. This scale can be clarified, as in Table 1:

Table 1: Amplitude Scale of Verbal Behavior

<u>Behavior:</u>	<u>Amplitude:</u>
shouting	High
loud talking	—
quiet talking	—
whispering	Medium
muttering “under one’s breath”	—
subaudible speech with muscular movement	—
subaudible speech of “uncertain dimensions”	—
“unconscious thinking”	Low

In some cases, then, where a “cognitive process” refers to thinking, it may mean the low amplitude verbal behavior at the “covert” end of the scale Skinner described. True, we may find the scientific study of such low amplitude behavior difficult to carry out. Such study might require that we learn how to train and calibrate individuals to be their own observers. However, for purposes of instructional design, this represents something of a moot issue.

Lest this discussion seem too abstract, our culture places some value on low amplitude verbal behavior. Consider the skill of reading. At the high end of the amplitude scale, reading could include a government official shouting out the words on a proclamation as he or she reads it. At the low end we find various types of “silent” reading. One can read “out loud,” or one can read “silently.” In many situations we prefer silent reading, as it has the dual effect of performing the behavior without bothering other people. Yet, if you wanted to teach reading to someone, you would want them to start off with audible reading. That would be the only way that you, the teacher, could provide effective and reliable feedback and instruction. Later, as a student learns to read silently, the direct measurement of the reading becomes difficult, if not impossible. At that point one may only be able to measure reading indirectly, after the fact, by means of a reading comprehension test.

Explanatory Fictions

Some cognitive processes, if invoked as explanations for what people do, may turn out to be pseudo explanations. Some people call such explanations “explanatory fictions.” An explanatory fiction has the form of an explanation. However, the process invoked as an explanation is not separate from the event or condition being explained. For instance, suppose you wanted to explain why a person routinely gets all the answers on a test correct. You might say that the person gets all the answers correct because he is intelligent. Yet, the evidence for intelligence in this case is getting all the answers correct. How do you know the person is intelligent? Because he gets all the answers correct. Why does he get all the answers correct? Because he is intelligent. Round and round such circular reasoning goes.

An explanatory fiction does not get us anywhere. It explains nothing. It may sound good. It may feel good, at first, as an explanation. Yet, because it does not get us anywhere further in understanding behavior, it will ultimately prove unsatisfactory.

All We Have Is Behavior

Whether cognitive processes are real or not, in the final analysis all we have to work with is the observable behavior. If a particular cognitive process refers to a real repertoire of behavior, we can work with the behaviors. We can see behavior. We can observe and measure action. We can see and determine the effects of behavior. We can see how it affects and changes the environment. If a cognitive process means low amplitude verbal behavior, we cannot do much about that, at least not directly. However, we can try to increase the amplitude of the behavior to make it more publicly visible. Or, we can teach a person to measure his or her own low amplitude behavior. Finally, if a cognitive process really turns out to be an explanatory fiction, we can recognize it as such, and then proceed to find some real independent variables that may change the behavior.

We do want people to have the higher-order skills. We do want people to learn problem-solving skills, for instance. Sometimes it seems that the “behavioral” skills are relegated to the lower-order behaviors and that the “cognitive” skills receive esteem from being considered higher-order. Yet, one can cut through all that dichotomy and obfuscation by recognizing that all we have to go on is the behavior. Problem-solving consists of many lower-order behaviors, some of which may have a low amplitude. And so, problem-solving means a repertoire of component behaviors. If you teach these component behaviors well, a person may then have a generalizable skill.

If you want to design good instruction, you will need to pay attention to the behavior. You will need to measure behavior directly. You will need to look for changes to behavior. If you want to use a different word than behavior, such as performance, that’s fine. For performance, too, you will need to work with the visible, the observable, and the measurable. The only secure way to tell whether a person has truly learned something is to see what that person can do after instruction. Learning refers to a change in behavior. Even psychologists often define it as such. Hypothetical cognitive processes and theories of learning may help eventually. We do not know for certain that they will or if they will. But for the present, succeeding at instruction means that a learner be able to act fluently when given a certain condition, event, or situation. ✻

References

Skinner, B.F. (1957). *Verbal Behavior*. Acton, MA: Copley Publishing Group. ✻

Behaviorology.org: An Action Plan

David R. Feeney

Temple University

An estimated 20-30 million people in the United States use electronic mail (email).¹ Online written communication tools like email, commercial online services,² and the World Wide Web (www) have become part of the daily routine of a vast and growing number of people, worldwide. Online communications serve as a convenient, low cost way to share documents, supplemental graphics, mail, and real-time conversation.

Such a far-reaching technological revolution affects the way scientists behave, including behaviorological and behavior-related (social) sciences. HTML, the programming language of the www, originated as a simple way for researchers to share documents, with pictures, over worldwide computer networks. Science is heavily verbal, and online writing tools in particular (such as email, listserves, newsgroups, and chat) bring rapid, worldwide document-sharing and conversation into offices and homes.³ Online communications are being used to deliver education and therapy,⁴ including professional education credits.⁵ Online behavior is increasingly the object of research and theory,⁶ as well as judicial scrutiny.⁷

Regardless of the size of our behaviorological community, our professional and personal development can be facilitated by the routine use of simple online commu-

nications. The small size of the local behaviorological community, combined with isolated behaviorologists worldwide, may especially benefit from using simple online communications for professional development and training. For a small organization with typically limited resources, low-cost behavioral strategies for effective, international professional outreach are needed.

The BALANCE Website

As Webmaster for BALANCE (Behavior Analysis League for Accuracy in News, Commentary and Education) I designed a simple website for small group communications. Two main goals were to distribute the BALANCE Newsletter in www format, while increasing www-based subscriptions to the paper Newsletter. With BALANCE editor Roger Bass (RFB53074@aol.com), I designed the BALANCE Website and installed it at <http://www.onlearn.com/balance.html>.

The website was designed to display all prior issues of the BALANCE Newsletter and other original writing by BALANCE members. The website gave visitors the opportunity to subscribe to the paper Newsletter free of charge. Website visitors could also use email to converse with me concerning printing from the www, or to submit manuscripts to Roger Bass via email.

The BALANCE website went online on Wednesday 21 May 1997. Here is an informal analysis of its impact up to 8 October 1997.

The week following 21 May was the 1997 ABA Convention, which featured the BALANCE SIG meeting and the demo of the initial site to the BALANCE members. On 27 May I began taking data of the BALANCE Web Site "hit count" (hits = number of times the site is accessed by a web browser). Figure 1 below illustrates a cumulative record of those hit counts.

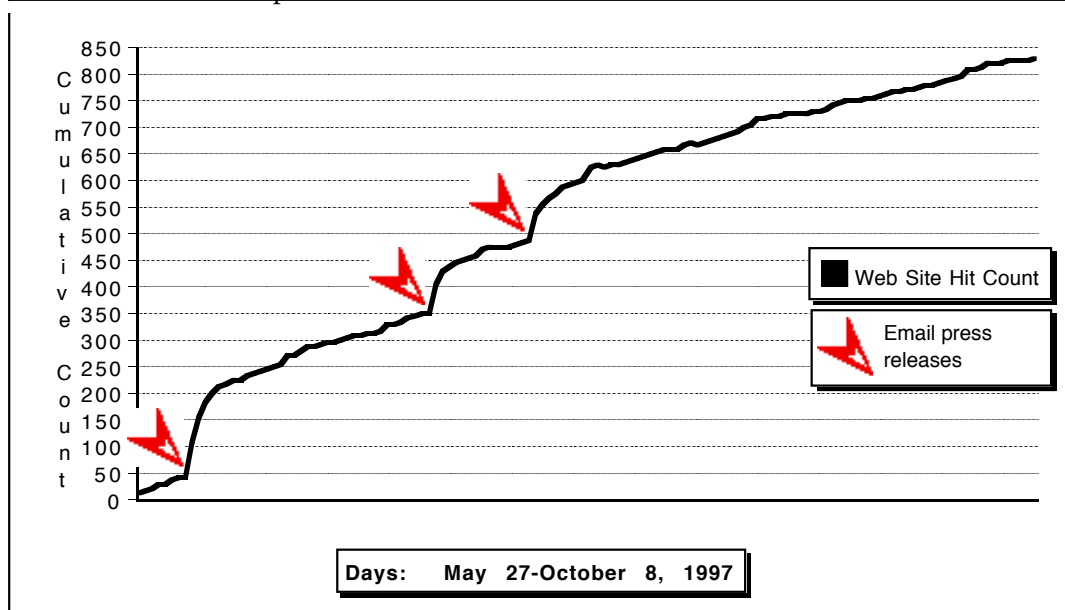


Figure 1: Cumulative Hit Counts of BALANCE Website

To increase the rate of daily visitors, “press releases” were written for email distribution via listservers devoted to behavior-analytic and related issues. The first BALANCE press release was sent on 3 June 1997. Two more press releases were done, on 9 and 24 July 1997. Press releases to listservers served as informational advertising to a target group of interested professionals, since each listserver typically distributes email to hundreds of listserver subscribers. Press releases are notated in Figure 1 with an arrow marker.

It is interesting, if not surprising, to note the “uptick” in hit counts after each press release. However, larger listserver audiences did not result in larger increments of hit counts to the site. The first press release was to the Behav-An listserver.⁸ This was associated with the steepest climb on the graph. The second press release was sent to two listservers: the Behav-An list and the new Standard Celeration listserver⁹—*more recipients, but fewer subsequent hits to the site*. Finally, the modest increase after the final press release (announcing the publication of the BALANCE Online Library monograph) is especially intriguing, since that press release targeted five listservers: Behav-An, Education Consumers Clearinghouse,¹⁰ LEARNING listserve, Standard Celeration (SCList), and Society for Computers in Psychology (SCiP-L).

Increasing Newsletter Subscribers

On the same day as the debut of the BALANCE site (21 May 1997), I emailed a small personal press release to 20 select individuals. They included Murray Sidman, Og Lindsley, Joe Cautela, John Church, Dennis Wahlgren and 15 others.

The first BALANCE subscription request to be emailed from the website was on Thursday 22 May; the day after the BALANCE site went online. That was Dennis Wahlgren (wahlgren@mail.sdsu.edu) at the Center for Behavioral Epidemiology and Community Health (C-BEACH) in San Diego.

From May to October 1997, I processed 78 new subscription requests. The BALANCE Newsletter (paper version) grew to 202 subscribers, 38% of whom were drawn from visitors to the BALANCE site during its first five months of operation.

With an eye to international outreach, of those 78 new BALANCE subscribers, 18 (23%) were from outside the continental United States. Here is the distribution of those 18 subscribers from 12 countries and Alaska:

Alaska:	1	Brazil:	1
Canada:	3	France:	1
Israel:	1	Japan:	2
Mexico:	3	N. Ireland:	1
Norway:	1	Phillipines:	1
Poland:	1	Scotland:	1
Spain:	1		

The BALANCE website procedures have had a sustained and remarkable impact on the number of subscribers to the BALANCE Newsletter, a sizable percentage of which were international. BALANCE can serve as a pilot experiment guiding uses of New Media by TIBI. Both TIBI and BALANCE are small organizations, with comparable resources and comparable missions: to supplement and shape accurate verbal behavior regarding a natural science of behavior. Both BALANCE and TIBI desire increased international participation, with TIBI being explicitly organized to foster it.

An Action Plan for *www.behaviorology.org*

TIBI has reserved *www.behaviorology.org* (.org being the Internet suffix for nonprofit companies), and is committed to using available online tools to teach and advocate behaviorology. Here are steps TIBI might take to generate disciplinary interaction and outreach, at modest costs:

Offer a free paper newsletter via a TIBI Website. With proper software coordination, the desktop publishing document used to print the current TNT Newsletter can be published to the *www* quickly and easily.

Advertise free to target audiences. Academic and private listservers (such as Behav-An and Education Consumers Clearinghouse, respectively) accept a single email document, then resend it to hundreds of listserver subscribers. A short, factual press release introducing TIBI and its features, guiding readers to a web site, can generate web visitors and set the stage for verbal interaction. Also, hundreds of search engines accept and list sites at no cost beyond the response-cost of submitting forms. That “behaviorology” be a searchable term in various internet search tool would be a powerful payoff for modest effort.

Make high probability requests of site visitors, then rapidly consequate. “Subscribe to our free Newsletter via email” can be viewed as a high-probability request.¹¹ While using a Netscape browser, clicking an email link and writing your name and mailing address in a pre-addressed email has a low response cost. Either an automatic or human email response is generated, and the site visitor gets his or her reply from TIBI almost immediately. From this high-probability request strategy, a subscriber database of names, mailing addresses and e-dresses can be gleaned. Since the response cost of writing and sending email is similar regardless of geographic distance, international visitors have as much opportunity to participate as national visitors. Finally, it leaves TIBI with a wider market for its most valuable export: behaviorology.

Offer avenues for site visitors to contribute and shape productivity. A percentage of the subscribers to a newsletter will have more to say, which may be relayed via email to TIBI. Such writing may be shaped into publication-quality text, articles or other verbal contributions, then

fed back into the web site or other TIBI publications. Reader-derived material can keep a site “fresh,” while developing new verbal material via audience involvement.

Routinely advertise site changes and new features. Since the cost of “targetcasting” via email press releases is nil, new releases can be sent at regular intervals, announcing valuable changes and additions to a site.

Distribute references of behaviorological work in basic, applied, and conceptual areas. A list of references and resources documenting the emergence of behaviorology in professional and popular literature already exists... on paper. Even a non-interactive web page listing the same information would be available worldwide for reading or printing, 24 hours a day. Adding email or hypertext links for the various authors serves to enhance the interactivity of such a list.

Build, with active email feedback, a “Frequently Asked Questions” list (FAQ). Both professionals and lay people react to the novelty of behaviorology with similar reactions: *What’s that? Where did it start? How long has it lasted?* FAQs feature basic answers to questions encountered in real-life (but also via online contact). A FAQ is generally cumulative, with new materials added over time. Instead of asking people with basic questions to read technical literature, let’s “catch ’em being good,” and reward basic questions with plenty of basic answers (with clickable opportunities for more involved answers available).

High interactivity and verbal productivity need not require expensive online resources. Mundane email and web tools can be combined with simple behavioral technology to get audiences immersed in the verbal repertoire of a natural science of behavior. Online communications offer behaviorologists worldwide opportunities to shape and be shaped.✻

⁵ See WebEd (<http://ceus.com>) or The Psy Broadcasting Corporation (<http://www.psybc.com>).

⁶ See <http://www.pitt.edu/~ksy> for Dr. Kimberly Young’s work on Internet Addiction Disorder or <http://www.computeraddiction.com> regarding compulsive internet use. Also, the Journal of Online Behavior at <http://www.behavior.net>.

⁷ See the Electronic Privacy Information Center (<http://www.epic.org>) for reviews of legal cases related to online speech, including this year’s landmark us Supreme Court ruling on the Federal Communications Decency Act.

⁸ To join the Behavior Analysis (Behav-An) forum, send the command SUBSCRIBE BEHAV-AN YOURFIRSTNAME YOURLASTNAME to LISTSERV@LISTSERV.NODAK.EDU

⁹ To join the Standard Celeration (SCList) forum, send the command SUBSCRIBE SCLIST YOURFIRSTNAME YOURLASTNAME to listproc@lists.acs.ohio-state.edu.

¹⁰ To join the Education Consumers Clearinghouse (ECCList) forum, contact Dr. John Stone (professor@tricon.net).

¹¹ See Mace et. al. in JABA, 30, 1 (Spring, 1997) p. 1-20 for behavioral applications of high-probability requests.✻

¹ See <http://etrq.findsvp.com/internet/overview.html>

² Such as America Online, Compuserve, Prodigy, Microsoft Network and others.

³ For a working example of using commercial online services for sharing and reviewing Standard Celeration Chart data, see <http://www.onlearn.com/scchat.html>.

⁴ See <http://www.onlearn.com/lmodlibrary.html> as well as: Feeny, D.R. (2002). Creative life-style management through on-line and real-time application of the behaviorological education practices of precision teaching. In S.F. Ledoux. *Origins and Components of Behaviorology—Second edition* (pp. 259-295). Canton, NY: ABCs.



Charles Darwin, Behaviorist

John W. Eshleman

Optimal Instruction Systems

In 1872 Charles Darwin, of earlier “Origin of the Species” fame, published a book titled *The Expression of the Emotions in Man and Animals*. On the back cover of the paperback edition I have, the blurb reads, “Darwin’s work of 1872 still provides the point of departure for research in the theory of emotion and expression.” That may be true for the discipline of ethology, as Konrad Lorenz states in his preface to the edition that I have. It does not appear true, however, for either psychology or for behavior analysis. Lorenz comments that psychology has largely ignored Darwin’s work in the area of emotions and their expression. This ignorance likewise appears evident with behaviorists who express some interest in the study of emotions. When discussing emotions they may fail even to extend a courtesy reference citation to Darwin’s book. To the degree that this is so, it is tragically ironic, especially because it turns out that Darwin was something of a behaviorist, though not in the modern sense of course. That’s what this brief essay covers.

Darwin began his study of emotions and their expressions in 1838, a full century before B.F. Skinner’s magnum opus, *The Behavior of Organisms*, was published. Darwin used as his research basis the study of infants, the insane, and animals. He had people judge photographs taken of various expressions and then had the judges decide what the expressions represented and which emotions were being exhibited. He selected infants, insane people, and animals as objects of study mainly because, as he contended, they do not have means or methods of concealing their emotions. Also, Darwin tried having people judge expressions in the paintings and drawings made by great artists, but discovered that these illustrations did not work very well as sources of information for subjects to judge.

While not a behaviorist in the sense we have come to know and appreciate, we cannot fault Darwin for that difference since his book was published about 70 years before Skinner’s 1938 book. Darwin lived and worked long before any behaviorist paradigm appeared, let alone Skinner’s. Accordingly, much of Darwin’s writing seems quaint, out-of-date, and even archaic. Nevertheless, Darwin did anticipate modern behaviorism to a rather surprising extent. This anticipation comes with respect both to the scientific methods he used, concepts he used, and how he wrote about his subject matter.

First, Darwin’s work focused on behavior. He studied the movements of the organism, human and animal, and the emotional expressions produced by movement. He even used the term “movements,” which later became a keyword in Skinner’s 1938 definition of behavior, and likewise Lindsley’s 1964 definition of a movement cycle. Moreover, Darwin observed that the movements characteristic of emotion were often “slight” and “fleeting.” The term “slight” indicates variations of behavior along an amplitude dimension, and specifically action at a lower end of an amplitude scale. The opposite of “slight,” at the other end of such a scale, would include actions identified as “extreme” or “loud.” Darwin also arranged for subjects to judge photographs illustrating the large-scale movements and extreme expressions, too. So, here we see an important reference to an amplitude scale of behavior, which, interestingly enough, behaviorists have yet to recapitulate or even to rediscover.

Darwin’s observation about some emotions being “fleeting” connotes the brevity of many movement cycles. The cycle is here one instant, gone the next. To some degree this observation anticipates the behavior analytic use of equally fleeting responses—a bar press is here one instant, gone the next. Thus it alludes to the methodological problem of how to capture and then record such fleeting events so they can be measured and analyzed. Skinner’s eventual answer to that problem was through the development of an operant research chamber that contained a useful, reliable manipulandum. Pressing a bar was fleeting, but the event record and counter increment persisted. “Fleeting” also alludes to the value of frequency as both a universal measure and a dimension of behavior, because a “fleeting” expression is one that occurs in time and can be counted, if it is directly measured of course. A “fleeting” emotion is also one that can repeat, so perhaps its frequency would be as important as its amplitude.

Second, while he did not know about behavior–event relations as we now know them, Darwin does refer to “stimuli” in his book. I found that rather interesting when reading the book. Of course, the word “stimulus” is an old Latin one, which goes back to the agrarian culture of ancient Rome. Back then, Roman farmers used “stimuli,” which were sharp, pointed sticks, to prod cattle to move. The farmers needed to move cattle through chutes in order to count them, for purposes of buying and selling. So, they had to have some means to get the cattle to move into and through a chute. A “stimulus” did the job, producing the desired “response.” Prod the animal with the sharp, pointed stick, and it moved. So, culturally, the notion of “stimuli” being used to prod an organism into action—to elicit or to evoke a particular, desired response—has been around for quite some time. In any event, Darwin used some of the same terminology that we use, though in that earlier, more restricted usage more pertinent to an “s–r” paradigm rather than to Skinner’s.

In addition to his comments about stimuli, Darwin wrote this rather interesting conclusion that relates to contingencies of reinforcement:

I have now described, to the best of my ability, the chief expressive actions in man, and in some few of the lower animals. I have also attempted to explain the origin or development of these actions through the three principles given in the first chapter. The first of these principles is, that movements which are serviceable in gratifying some desire, or in relieving some sensation, if often repeated, become so habitual that they are performed, whether or not of any service, whenever the same desire or sensation is felt, even in a very weak degree. (Darwin, 1872, p. 347)

Darwin's description would seem to anticipate both positive reinforcement ("gratifying some desire") and negative reinforcement ("relieving some sensation") respectively. Granted that his terminology bespeaks a hedonistic perspective about these processes, but even so, it is not far removed from our more functional descriptions of whether consequences are added or subtracted and whether the behavior increases or decreases as a result. Furthermore, Darwin's comment anticipates behavior having some sort of function ("serviceability"), not just some happenstance epiphenomenon. Next, he anticipates fluency ("often repeated, become so habitual"). And finally even anticipates schedules of intermittent reinforcement ("whether or not of any service, whenever the same desire or sensation is felt"). Not every instance of the movement cycle produces the same subsequent event effect, nor needs to do so. Responses that do not produce the subsequent event are "not of any service" in that regard. Overall, the concept of the functional relationship has some early dawning in this whole passage. The intriguing question is whether or not Darwin or contemporaries would have discovered the contingency of reinforcement more than a half century before Skinner's book arrived.

Darwin furthermore demonstrated the same commitment to the behavior of the organism as a whole that modern behaviorists have. Well, of course. The "organism as a whole" was articulated by Jacques Loeb as a scientific organizing principle, and also by a succession of later scientists including B.F. Skinner. But the foundation for this principle goes back at least to Darwin, if not further back. It would be more proper for me to observe that these later scientists demonstrated the same commitment that Darwin did to the organism as a whole. In any case, while Darwin concentrated on facial expressions, he did not limit his study to them. Indeed, where appropriate, he mentioned the movements and postures that the whole person exhibited when expressing an emotion.

When discussing the expression of emotions of animals, he likewise considered the whole organism. For example, Darwin's book contains some interesting, if perhaps amusing, drawings of cats arching their backs and puffing out their tails, with ears drawn back—the behavior of the whole cat, if you will. You can't get any more whole organism than that. So, the basis of Skinner's foundational principle of studying the behavior of the organism as a whole surely extends back to Darwin, even if by way of Loeb.

The Amplitude of Emotions and Their Control

As noted already, Darwin also recognized, to some degree, the fact that emotions range along an amplitude scale. An example includes emotions evoked by humor: smiles, grins, chuckles, giggles, laughter, and the kind of "rolling on the floor belly laughter" at the high end of the spectrum. While these descriptors may seem to form a broken and discrete amplitude scale—and may well do so—they do denote the fact that the expression of the emotions varies in intensity. In today's world, with our emphasis on functional relationships, we might find that behaviors at different amplitudes also have different functions, much as behavior at different frequencies has different functions or effects. We might—and probably should—chart the behaviors of different amplitudes separately, as Og Lindsley (private communication, March 2001) suggests. We might find that the frequencies of high and low amplitude responses accelerate and decelerate independently of each other. Recall that amplitude is generally orthogonal to frequency and independent of it.

Skinner (1957), on page 438 in the chapter on "Thinking," suggested that vocalized verbal operants range along an amplitude scale. He arranged them top down, from shouting, which is vocalizing at the highest amplitudes, through normal conversation in the middle, down to subvocal speech and even further on down to verbal responses of "unclear dimensions" at the lowest amplitudes. Vocalized verbal behavior can and does vary in amplitude. We vary the amplitude of our vocalizing all the time. We speak "up" and "raise" our voice, and also we "lower" our voice and "pipe down." We subvocalize verbal operants so they will not be heard, in order to avoid punitive consequences were we to speak audibly. And indeed, modulating the amplitude of vocalized verbal behavior is something our culture deems important. We encourage children to read out loud when we are teaching them to read, but later on we want the same reading to occur silently, a reduction in the amplitude of the behavior below the level of producing sound.

Because emotions can be and are expressed vocally, as well as by facial and bodily expression, they can vary

along a similar amplitude scale as the one Skinner suggested for vocalized verbal behavior. Likewise, our culture demands that people modulate their emotions, just as it does with the loudness of speaking. We expect people to control their rage, or to temper their anger. We ask them to “calm down,” where down implies a reduction in amplitude. We ask them to lower their voice, or to not raise it, which are again demands about modulating amplitude.

One of the various criticisms leveled against behaviorists and against behaviorism concerns the question of “control” of behavior. Behaviorists are charged sometimes with being “controllers,” and wanting to “control” behavior. (We do, but primarily as a means to understand it scientifically.) Yet, in the everyday world, the same people who might level such criticisms not only have no problem with wanting others to modulate amplitudes of speaking and emoting, they demand it. Our culture may have great difficulty accepting that all operant behavior is controlled, but we have little difficulty knowing and expecting that speaking and emoting can be and need to be controlled. We insist that speakers speak up! We insist that angry people calm down! So, perhaps recognition that the amplitude of emotions can be controlled, and often needs to be controlled, where such control is both accepted and desired in our culture, can be our entrée into gaining wider acceptance of the science. If so, then Darwin’s study could help pave the way, for his work has immediate application as a point of departure for further scientific study of the control of emotions.

Conclusions

In recognizing Darwin’s book on emotions and their expression as a useful precursor to our science and as something yet still relevant and worthy of review, we should not miss one irony. Our science has as its epistemological cause-and-effect basis the concept of selection by consequences. This differs from physical cause and effect. It also descends from Darwin’s other work on the natural selection of species. Species originate by way of the operation of natural selection at a biological level. Likewise, operant behavior changes by such a selectionist modality at a behavioral level, as do cultural practices at a cultural level. We owe discovery of this means of cause and effect directly to Darwin and his *Origin of Species* book. However, ironically, the concept of selection by consequences is not clearly evident in Darwin’s book on emotions and their expression. He did not discern the fact that behaviors arise and go away in the same way lifeforms do. So, we could quibble and say that Darwin, of all people, was not a selectionist when it came to behavior, but that might be unfair given that he did live and work before there was even much of a glimmer that be-

havior ever could be a subject matter in its own right, studied scientifically, with respect to application of selection by consequences.

While one cannot retrospectively make Darwin into either a radical behaviorist or any other kind of modern behaviorist—and that is not my intent—it should be clear that his contribution does anticipate the eventual rise of behaviorism along some important venues. Moreover, it should be clear that his book and what it covered would be useful reading as a starting point for the study of emotional behavior, even if much of what Darwin said is now considered obsolete. Not all of it is obsolete, and his methods and observations seem strikingly modern at times. If nothing else, his emphasis on watching the actual behavior and in noticing subtle aspects of behavior ought to be taken as useful advice, if for no other reason than emotions are not simply “psychological states” of being nor are they coterminous with “private events.” Rather, emotions are responses of the whole organism, often highly overt, public, and visible in their expression, and thus not usefully relegated to “states of being” whether psychological or otherwise. We make an equally serious blunder to whatever extent we cast emotions solely or principally into the category of private events. Darwin’s book stands as strong testimony that emotions are behavior of the whole organism, and as a rule are quite public and visible and are anything but private events. They are actions, elicited or evoked, varying in amplitude and frequency, that have some important effect or other salient function. Our task as scientists is to study them for what they are, and where necessary to help develop an applied technology of controlling emotions and their expression.

Adding Charles Darwin to the pantheon of behaviorists that includes B.F. Skinner and Ivan Pavlov and others would not be doing wrong. In fact, it would be the right thing to do. We credit Darwin for selectionism. He contributed directly to the study of behavior. We should credit him for that, too.✦

References

- Darwin, C. (1859). *On the Origin of Species by Means of Natural Selection*. London: J. Murray.
- Darwin, C. (1872/1965). *The Expression of the Emotions in Man and Animals*. Chicago: University of Chicago Press.
- Lindsley, O.R. (1964). Direct measurement and prosthesis of retarded behavior. *Journal of Education*, 147, 62–81.
- Skinner, B.F. (1938). *The Behavior of Organisms*. Acton, MA: Copley.
- Skinner, B.F. (1957). *Verbal Behavior*. Englewood Cliffs, NJ: Prentice-Hall.✦

DataShare: Show and Tell Your Databased Work

David R. Feeney

Temple University

DataShare is to be a regular column featuring a quick show and tell of behaviorological research going on in our community. Datashares use clear, short, minimally edited descriptions of research using charted rates of behavior and plain English discussion of results and significance. Contributors want feedback from readers, so be sure to contact the authors of each *DataShare* (who will include at least their email address). Today's *DataShare* concerns the use of online writing tools to teach adults to monitor and modify daily rates of chain smoking:

Learner:

40 year old adult male.

Dependent variable(s):

Daily rate of cigarettes smoked.

Independent variable(s):

Participation in Online Self-Management course.

Tools used:

Personal computers, America Online, daily email, chat room, behavior charts.

Learner Goals:

Reduce (decelerate) smoking rates to 20 per day or lower.

Author's address:

drfeeney@onlearn.com

Work with this Learner involved a personalized changing-criterion element, but in an a-b-c sequence of (a) baseline, (b) cost analysis with behavior charts, and (c) a changing criterion rule with home charting worksheets. This learner counted his cigarettes smoked per day, then he emailed those data each evening. He participated in online chat room discussions about his project, and received customized behavior charts displaying his smoking rates, contingent on course participation.

Learner's results and discussion

The chart shows the total course data for this project, using a StatView Standard Celeration Chart (ssc) in the new 3v format. (Email Dr. Steve Graf at zerobros@aol.com for more information about new SCC formats.)

The baseline phase lasted 23 days. During baseline, this Learner smoked a mean of 57.83 cigarettes per day (CPD), with a range between 92 and 44 CPD. During baseline, this Learner smoked a total of 1,330 cigarettes, for which he paid \$135.26, making an average of \$5.88 spent per day.

Weekday smoking levels remained in the high 40s to 60 CPD range throughout baseline. During weeks one through three, the Learner showed a stable smoking rate between 40-50 CPD, with notable accelerations of smoking occurring on weekends. Such frequency outliers recurred on all weekends except for week four (see Eshleman, 1997 for discussion of frequency outliers and the SCC). Weekends may hold independent variables (such as social activities with smoking cues) which accelerate smoking. Based on discussions of daily emailed data, both Learner and Instructor soon began to plan for control of weekend smoking in addition to weekday smoking.

During Intervention one, which began on Wednesday of week four, the Learner experienced gradual decelerations of his weekday smoking rate, with weekend rates remaining higher than weekday rates, but decelerating when compared with prior weekends. Intervention one lasted 77 days, in which the Learner smoked an average of 30.6 cigarettes per day. During Intervention one, smoking ranged from 15-68 cigarettes per day, with the Learner smoking a total of 2,361 cigarettes, at a cost of \$240.11. The Learner spent an average of \$3.12 per day on cigarettes during Intervention one. This was a decrease of \$2.76 per day from the average spent per day during baseline.

During online chat sessions, the Learner expressed his satisfaction with his smoking performance during Intervention one. The Learner noted that he had saved \$212.52 during Intervention one. He felt that the cost analysis was particularly effective at reducing his smoking rate by directly pairing each cigarette with a visibly increasing cost measurement. The Learner also felt that behavior charts were useful because he was able to see numerical data in the form of levels, trends, and weekend jumps.

By week eleven, the Learner seemed to reach a "smoking floor," both for weekday rates (from 17-23 cigarettes per day) as well as weekend rates (from 25-30 cigarettes per day). During week 12, the last week of Intervention one, the Learner had experienced his first serious "uptick" in smoking rates, with a visible acceleration in weekend smoking. This onset of accelerating smoking rates after periods of consistent deceleration (referred to by the Learner as a "loss of control") led him to discuss and adopt Intervention two.

Intervention two, a changing criterion with home charting worksheet, continued for only three weeks before the Learner resigned from the course. During the 20 days of Intervention two, the Learner smoked a total of 428 cigarettes for an average of 21.4 cigarettes per day. The total cost for cigarettes was \$43.53, with a mean cost per day of \$2.18. This constitutes a further decrease in costs compared to the level of costs in Intervention one, which itself was better than the rate of daily smoking in baseline. The Learner resigned from the online course due to a job and schedule changes.

The results from this project illustrate that high rates of “binge” smoking can be decelerated via the use of online self-management coursework. During the course, the applicability of “cost monitoring per cigarette” as an Intervention became apparent. Cost monitoring seems to provide especially powerful behavior changing stimuli when arranged in the manner of Intervention one. Having a Learner attach a dollar cost-per-cigarette may transfer to each cigarette an additional, verbally mediated response-cost. In one online chat session, the Learner remarked: “I thought about how much I was spending when I smoked... I thought about how much I was saving when I smoked less.” The Learner’s costs-per-cigarette (and savings per reduction) can be effectively delivered to (and echoed by) the Learner in an online chat room, in addition to the mechanics of daily data reporting.

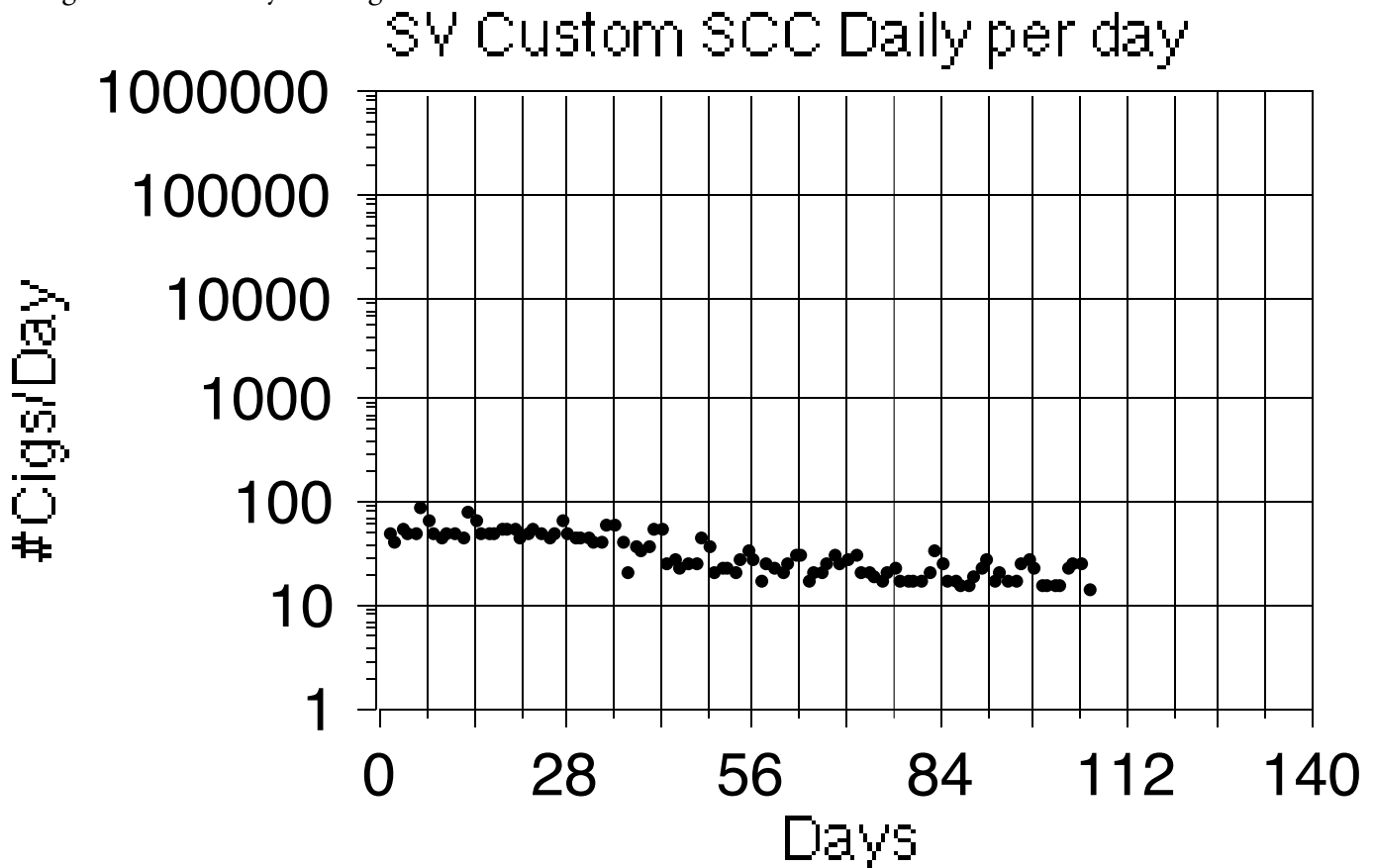
Cost-per-cigarette measurements are also easily projected into future savings. The resulting verbal stimuli might mediate further behavior. For example, a year of smoking at this Learner’s baseline rate would cost over \$2100. In contrast, a year at the reduced rates of Intervention two would cost about \$800, a savings of \$1300. Repeating these facts (e.g., from reading a note on a bathroom mirror) might reduce the probability of “post-course” smoking.

The results of this study support further investigation of online writing for self monitoring and management of smoking and other lifestyle changes.

Editor’s note: Send your “DataShares” to David Feeney, our DataShare editor, at 449 E. Ravine, Langhorne, PA 19047. And when your research reaches a completion point, submit it to *Behaviorology Today*.✦

Resources

- Eshleman, J. W. (1997, March). The standard celeration chart: A brief introduction. Paper presented at the ninth annual convention of The International Behaviorology Association, Plymouth, MA.
- Feeney, D. R. (1997, October). Online precision teaching: Databased online instruction with applications in smoking control, weight control and study skills. Presentation at the thirteenth International Precision Teaching Conference. Hartford, CT.
- Feeney, D. R. (2002). Creative lifestyle management through on-line, real-time applications of the behaviorological education practices of precision teaching. In S.F. Ledoux. *Origins and Components of Behaviorology—Second edition* (pp. 259–295). Canton, NY: ABCs.
- Ledoux, S.F. (2002). Successful smoking control as an example of a comprehensive behaviorological therapy. In S.F. Ledoux. *Origins and Components of Behaviorology—Second edition* (pp. 243–258). Canton, NY: ABCs.✦



SCC View of daily smoking rate for this Learner.

Carl Sagan is Right Again: A Review of The Millennium Man

Stephen F. Ledoux

SUNY-Canton

The novel, *The Millennium Man*, by W. Joseph Wyatt lives up to its honest billing as “a positive look at behavior analysis” (a name connoting the *natural* science of behavior). Appearing near the close of the 1900s, the title could grab a fair amount of attention as the second millennium ends and the third millennium begins (in “common era” parlance; see Gould, 1997). The story is not only set at the turn of the millennium, but it also suggests various actions that could make the next millennium more humane than all the previous ones. Still, the title derives more from the basic story line than from such calendrical connections, that story line being the surprising and insightful reactions, to this time period, of someone who has visited several earlier time periods.

Wyatt weaves an intriguing tale of a Renaissance genius—called “Leo” in the story—whose systematic work led him to discover a formula to enable a person to engage in decades-long periods of hibernation-like sleep. Applying his discovery to himself in the early 1500s, this genius has experienced a series of glimpses of the state of humanity by awakening for a couple of months every hundred years or so. He had also made arrangements to ensure his presence in the “new” world.

During the current awakening, Leo visits our time. He marvels at what he must call *miracles*, the miracles all around him in the year 2001, including miracles in medicine, transportation, construction, and communication. He recognizes these miracles as wrought by applying advances discovered in the natural sciences using essentially the same scientific methods that led him to discover his own formula. But all these miracles had not been present on any of his earlier visits, even on his last visit only a couple of generations back. Yet all these are miracles that we today take all too much for granted, apparently not appreciating what life would be like without them, and this itself causes a certain amount of concern for Leo.

However, Leo also finds certain things that have not changed, things like the easy allegiance so many, many people give to the various pseudo explanations of their own behavior, comforting but essentially shallow, untestable and so essentially unhelpful explanations such as are available in the occult, mentalistic, or astrology sections

of bookstores. As counterpoint, Leo also quickly recognizes the development of a natural science of behavior, a science called behavior analysis in the story and behaviorology by some other current practitioners.

That natural science is clearly delineated in the book from the social science of behavior called psychology (see Fraley & Ledoux, 2002, about the history and differentiation of these two disciplines). In the perspectives, advances, and applications of the natural science of behavior, Leo finds not only the relevant actions but also the wisdom about ourselves that is needed to help solve so many of the continuing problems of society that he still observes.

If you combine (a) the twentieth century’s scientific miracles, (b) the continued clinging to pre-scientific notions about human behavior and its causes, and (c) the value of the discoveries and applications of the natural science of behavior, then you have the mix that I think Carl Sagan was correctly addressing when he described this story as “an excellent device to view our time.” (His comment is inscribed on the book’s cover.)

Joe Wyatt is himself a natural scientist of behavior. Although also trained in psychology—as were so many of today’s behavior analysts and behaviorologists—Wyatt had to fight a court battle with psychologists to retain his university teaching position as a natural scientist of behavior. (He won that battle, but he should not have had to fight it, and the energy spent by both sides was not available to help society in more beneficial ways; see Chapter 3 of Fraley & Ledoux, 2002.) While not used in the book, this experience could be a typical example of the contradiction between science and pseudo science that Leo puzzled over so often in the story.

A reader already familiar with the natural science of behavior might be concerned with Leo’s occasionally extreme or incomplete handling of some of the puzzles that he encounters (though most readers may not take any notice). For example, while Leo castigates the mentalism of Freud, he ignores Freud’s historical contribution of looking at behavior deterministically. Based on information from his patients, Freud grasped some of the forces that determine behavior, such as primary reinforcers like food and sex. However, the variables shaping Freud’s behavior led him to locate these forces inside the person as psychic entities, like the id, rather than acknowledge them as independent variables of behavior in the person’s environment, both internal and external.

While the professional reader may be concerned with such cases, the lack of that level of detail cannot be considered a problem for the book. Including all such details in a novel risks making the story read like an imitation of Jack London’s *The Iron Heel* (London, 1971) in which the polemics were the point.

On the other hand, the occasional inclusion of a little more detail could have been beneficial. For example,

while stating with authority the origins of verbal behavior (language), Leo understated the complexity of those origins, leaving too much room for the continuation of many modern misunderstandings about those origins. Leo touched on partial differential reinforcement of babbling leading to words leading to sentences. However, stopping at that point too easily implies to readers that that is all that is considered necessary to account for language from a scientific perspective. Yet, in Leo's speaking style, only a few more sentences may be needed to interest the reader in a more complete range of the variables involved in language development, variables such as parental repetition—and thus modeling—of correct forms, plus generalization, creative-looking recombinations of already separately learned responses, and perhaps even the phenomenon described as stimulus equivalence.

Leo's short discourse on "praise" and "blame" is another example of stopping short. He describes how praise and blame are not actually earned—in the sense of the behavior that precedes them being initiated by the person as an initiating agent. But by stopping there, readers are too easily left with the misimpression that behavior science says praise and blame should be ignored, or even banned. Yet a little elaboration by Leo could simply point out how praise and blame are still culturally and scientifically needed as reinforcing and punishing consequences of the behavior that produces them.

Those musings could even lead to an interesting digression about the misconstrual of reinforcers as bribes. Is praising a child when she or he does something well a bribe? What about giving cookies or stars or points (or grades, for college students) or allowances (or salaries, for adults)? None of these are bribes! Dictionaries are quite reliable on this point: bribes are anything given to someone to induce him or her to act immorally or illegally (e.g., Webster [1979, p. 226] defines a bribe as "a price, reward, gift, or favor bestowed or promised to induce one to commit a wrong or illegal act").

At one point the author skillfully leads the reader to feel that Leo is misusing science of behavior principles to manipulate others for personal gain. This provides the opening to make an important point. One of the other characters then notes that Leo was not engaging in that kind of abuse, that knowing about the laws of behavior does not automatically make the knower misuse those laws. Indeed, one of the best ways to reduce and avoid such abuse is to enable everyone to be familiar with the laws of behavior. This is surely part of the very purpose of this book. Everyone should be as familiar with the basic principles and practices of the natural science of behavior as they are with physics or biology from high school.

At another point, the author has Leo giving an unusually and uncritically oversimplified description of communism. Given the difficulty—or controversy—inherent in fixing

this passage, one which seemed to be distracting anyway, perhaps it would have been better to omit this small part.

Actually, in all of the concerns I have discussed, the level of detail the author provides can certainly be construed as adequate for a novel of this type. Still, I think a novel that included the kind of details that I have suggested would be appreciated for the increase in its educational value. (And novels *can* be revised.) Meanwhile, given the general thrust of this work, I find the author's effort quite compelling. The author may not yet be a fully developed "Jack London," but efforts such as his have long been needed to help bring the natural science of behavior to a public inadequately versed in the workings and values of science (e.g., see Sagan, 1996, 1997).

I would not be surprised if *Millennium Man* turned out to be a sleeper in the way *Walden Two* was (Skinner, 1948). But I rather think it deserves to take off like a rocket. I have adopted it as a text in behavior science courses (and recommend others do so as well). For starters, I suggest to the students that they imagine themselves in the shoes of Holly and David, the younger characters in the story. I then ask the students to describe the things they would hope to be able to show Leo at his next awakening, especially in terms of the science of behavior. Finally, I ask them to describe the things they might do in their own lifetimes to help make into realities the things they would hope to show Leo.

In a similar vein, as I neared the end of the novel, the possibility, then probability, that we had not seen the last of Leo continued to rise. Wyatt handled this notion with deliberate delicacy. I enjoyed "falling for it." I found myself compelled to consider what concerns I would be pleased to find Leo observing and addressing. Of course, I would like to see Leo again meeting Holly and David and Beth and even Jim (through medical science advances) as well as Rose and her children. Who *are* all these folks? Well, read the story!

The sheer human interest of such reunions would be gratifying, whether expected or not, as would be seeing which of the many potential directions the author ends up being compelled to develop. Yet, regarding concerns, I would hope Leo gets to observe the meaningful and valuable reality of our behavior science being more accepted by those who currently see science *per se* as the principal if not sole cause of society's ills. I would hope Leo gets to observe that by his next visit, the natural science of behavior is at least as accepted then as Darwinian evolutionary biology is accepted now. And I would hope Leo gets to observe the extensive benefits our science can deliver even now—if allowed to—in areas that currently have such great needs including both child rearing and, especially, the educational arena.

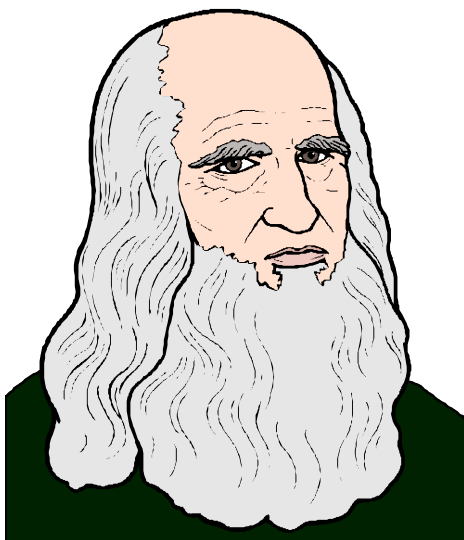
Perhaps excessively critical readers will readily find tidbits about which to nit pick (e.g., the probable, unad-

dressed problems of muscle atrophy during a 100-year-long sleep). But I would have to wonder whether they were missing or avoiding the well-developed point of the story: the wisdom-bringing value—for the present and the future of humanity—that is readily available now through behavior analysis/behaviorology.

In the final analysis, this is an inspirational book, inspirational in several—and the best—senses of the word. Of course, it inspires readers to learn about, and apply, behavior analysis/behaviorology. But it also inspires readers to a greater appreciation of *all* the other wonders that the other natural sciences have brought us, wonders that we have come to take far too much for granted. More importantly, it inspires us realistically to work to know ourselves better through the natural science of behavior and thereby be better able to use the rest of our knowledge to benefit the world and the future.✻

References

- Fraley, L.E. & Ledoux, S.F. (2002). Origins, status, and mission of behaviorology. In Ledoux, S.F. *Origins and Components of Behaviorology—Second Edition* (pp. 33-169). Canton, NY: ABCs.
- Gould, S.J. (1997). *Questioning the Millennium*. New York: Harmony Books.
- London, J. (1907/1971). *The Iron Heel*. New York: Bantam.
- Sagan, C. (1996). *The Demon-Haunted World*. New York: Random House.
- Sagan, C. (1997). *Billions and Billions*. New York: Random House.
- Skinner, B.F. (1948). *Walden Two*. New York: Macmillan.
- Webster. (1979). *Webster's Unabridged New Twentieth Century Dictionary (Second Edition)*. New York: Simon & Schuster. [ISBN: 0-671-41819-X]
- Wyatt, W.J. (1997). *The Millennium Man*. Hurricane, WV: Third Millennium Press.✻



Critical Thinking and a Scientific Worldview: How Students' Thinking May Be Changed Upon Reading The Millennium Man

W. Joseph Wyatt

Marshall University

I wrote *The Millennium Man* (Wyatt, 1997) with several purposes in mind. That readers would develop greater appreciation for a scientific worldview was chief among them. Development of improved critical thinking skills was another. Greater appreciation for the advancements of science and technology (especially in the twentieth century) was one more. And I wanted to accomplish those goals while entertaining the reader.

Embedded within those goals was another—that readers would be more likely to think scientifically about behavior, less likely to succumb to pre-scientific explanations. Thus inoculated, readers would then be inclined to seek answers in the science of behavior analysis, rather than in the occult or the paranormal, or in schools of psychological thought that amount to little more than the paranormal.

This study looked into the changes in thinking of college students who read *The Millennium Man*. It also examined two methods of teaching the content of the novel.

Method

Subjects were college students in a mid-sized college in upstate New York during the 1999–2000 academic year. Students were from two different introductory courses: Psychology and Behaviorology.

Methods of teaching the novel differed from first to second semester. During the first term the instructor, an experienced professor highly versed in behavior analysis, was able to devote only one class period and one long examination to the novel and its extensive study guide (Ledoux, Wyatt, & Bias, 1999). In the second semester, the same professor was able to teach the novel in three class periods, and to divide the long examination into

three shorter exams. The improved understanding of specific principles of behavior, from first to second semesters as measured by the professor's pre- and post-test examinations, are described elsewhere (Ledoux, 2000).

Another kind of pre- and post-test was administered as well. This included several items designed to determine whether the more general goals listed above were being achieved. If students were developing improved scientific worldviews, and better critical thinking skills, it was thought that the following items would provide evidence of those changes:

1. The twentieth century brought about more advancement in science and technology than all other centuries combined.
2. The advancements of science and technology have been beneficial to me personally.
3. There is scientific proof that some people have the gift of extra sensory perception.
4. There is scientific proof that astrology can be accurate.

The above items were rated on the following four-point scale: strongly agree; agree somewhat; disagree somewhat; strongly disagree. "Strongly agree" was the correct response to items one and two. "Strongly disagree" was the correct answer to items three and four.

Results

Figure 1 shows the percent correct (i.e., those who strongly agree) for the statement, "The twentieth century

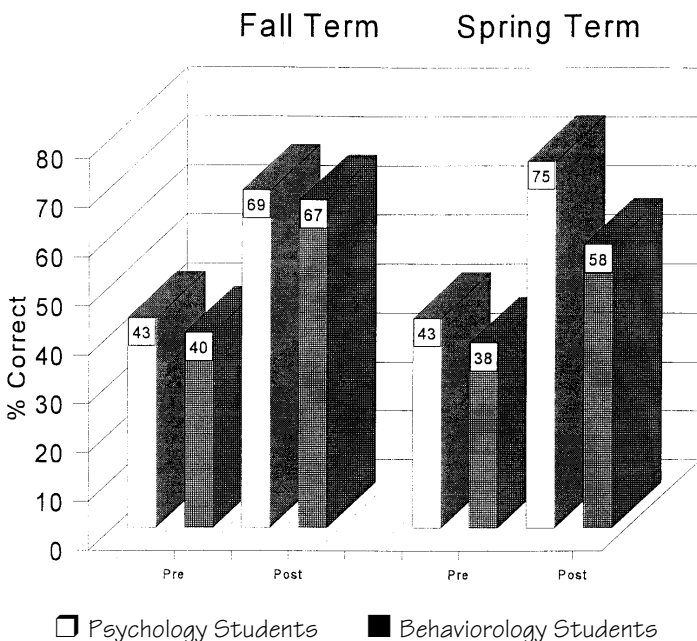


Figure 1: Those who agree strongly with the statement, "The twentieth century brought about more advancement in science and technology than all other centuries combined."

brought about more advancement in science and technology than all other centuries combined." After reading the novel, improvement was evident both for introductory psychology students and for introductory behaviorology students, and this was true for both semesters.

Figure 2 shows the percent correct (i.e., those who strongly agree) for the statement, "The advancements of science and technology have been beneficial to me personally." During the first semester, the percent correct was essentially identical for both psychology and behaviorology students, and did not change as a result of reading *The Millennium Man*. The importance of improved teaching methods is evident, however, in the second term when there was improvement in post-test scores for both groups of students, with behaviorology students improving slightly more than psychology students.

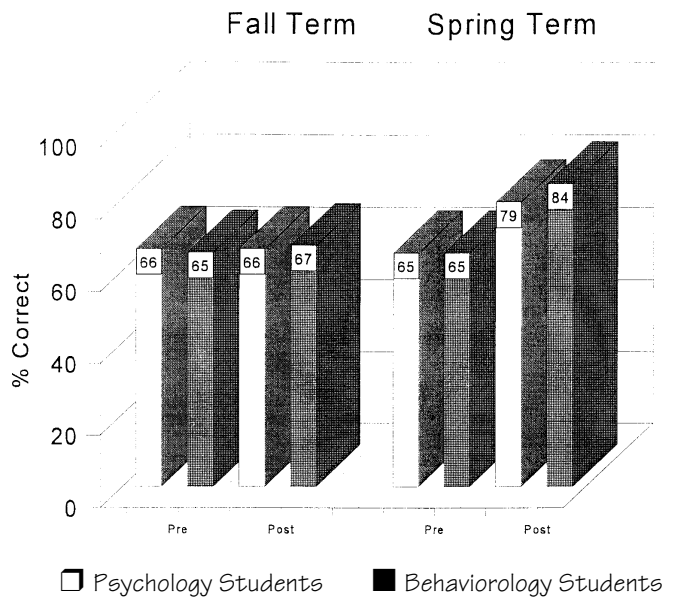


Figure 2: Those who agree strongly with the statement, "The advancements of science and technology have been beneficial to me personally."

Figure 3 shows the percent correct (i.e., those who strongly disagree) for the statement, "There is scientific proof that some people have the gift of extra sensory perception." This result is from an item that deals with the hoped-for goal of improved critical thinking skills. On the first semester's pre-test, only 9% of the psychology students, and only 10% of the behaviorology students, disagreed strongly with this statement. After reading and discussing *The Millennium Man* for one class period, the percent who strongly disagreed quadrupled for psychology students (to 37%) and tripled for behaviorology students (to 33%). During the second term, the proportions of improvement were the same or slightly better (although for reason unknown, the second semester's students registered lower percentages of correct responses on

the pre-test). Thus, responses to this item suggest that students' critical thinking skills, at least as regards a specific claim about one alleged paranormal phenomenon, improved as a result of reading the novel.

Figure 4 shows the percent correct (i.e., those who strongly disagree) for the statement, "There is scientific proof that astrology can be accurate." This item, which also dealt with critical thinking skills, yielded results similar to the results from item three. Improvement in the percent of students who "strongly disagree" occurred for both psychology and behaviorology students, and this was true for both semesters.

Discussion

The data show that *The Millennium Man*, a novel for ages 14 and up, is a useful tool for improving students' appreciation for science and technology, and for enhancing their critical thinking skills. And students enjoyed the novel, based on their informal comments.

Additionally, the novel would seem to be a useful tool with which to teach behaviorology/behavior analysis. As one reviewer put it, "The book is easy to follow and would have interesting potential as a supplement in a general psychology class, or an introductory class on behavior modification and analysis..." (Hummel, 1998).

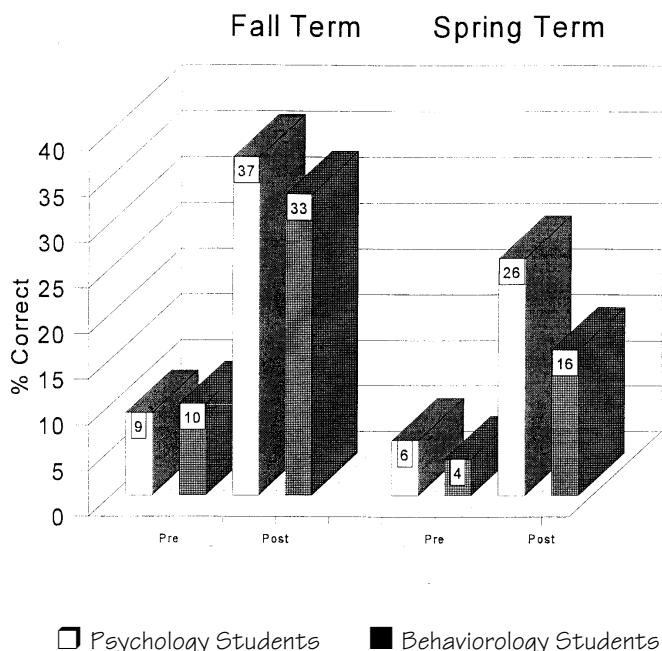


Figure 3: Those who disagree strongly with the statement, "There is scientific proof that some people have the gift of extra sensory perception."

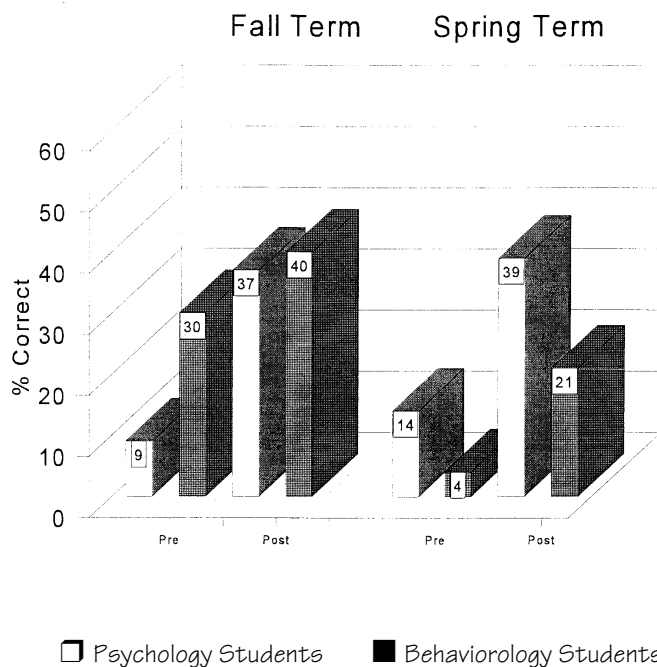


Figure 4: Those who disagree strongly with the statement, "There is scientific proof that astrology can be accurate."

Another reviewer said, "The novel, *The Millennium Man*, by W. Joseph Wyatt lives up to its honest billing as a 'positive look at behavior analysis'..." (Ledoux, 1998).

Endnote

These data were part of a larger presentation with Stephen F. Ledoux as coauthor that was presented under the title "Methods for pedagogical success with *The Millennium Man*," at the twenty-sixth convention of the Association for Behavior Analysis, Washington, DC, 26-30 May 2000 (see Ledoux, 2000).

References

Hummel, J.H. (1998). A novice's introduction to some principles of behavior. *Contemporary Psychology*, 43 (8), 581.

Ledoux, S.F. (1998). Carl Sagan is right again: A review of *The Millennium Man*. *TIBI News Time*, 1 (1), 21-23. [Also 2002: *Behaviorology Today*, 5 (2), 23-25.]

Ledoux, S.F. (2000). Methods for pedagogical success with *The Millennium Man*. *TIBI News Time*, 3 (1), 3-4. [Also 2002: *Behaviorology Today*, 5 (2), 28-29.]

Ledoux, S.F., Wyatt, W.J., & Bias, E.F. (1999). *Study Questions for W. Joseph Wyatt's The Millennium Man*. Canton, NY: ABCs.

Wyatt, W.J. (1997). *The Millennium Man*. Hurricane, WV: Third Millennium Press.

Methods for Pedagogical Success with The Millennium Man

Stephen F. Ledoux

SUNY Canton

Abstract: The collecting of student outcome data resulting from pedagogical changes is described. This type of data collection is then used to evaluate the relative success of different pedagogical methods for using the novel *The Millennium Man* by W. Joseph Wyatt.

§

Changes that faculty make in the methods they use to teach their courses are best evaluated using data-based measures. Without such data, one would have little confidence in statements about whether or not the changes were successful and so should be retained. Fraley (1980) examines a range of measures relevant to answering such questions for both faculty and administrators.

The measure most useful to faculty is the percent of a student's possible gain that was actually achieved by that student in a particular term. This measure is simply called the percent of possible gain achieved (Ledoux, 1995). Fraley called it the attained percent of possible or desired gain (Fraley, 1980). Its particular value to faculty inheres in the selective effect it can have on enhancing faculty production of pedagogical changes that effectively improve instruction.

Using pre-test and post-test scores, the possible gain is calculated by subtracting the pre-test score from the maximum possible score, while the actual gain is calculated by subtracting the pre-test score from the post-test score. Then, the percent of the possible gain that is actually achieved is calculated by dividing the actual gain by the possible gain and then—to change the resulting fraction into a percent—multiplying by 100 (i.e., the percent of possible gain achieved = [post-test score minus pre-test score] divided by [maximum possible score minus pre-test score] with the result multiplied by 100).

To compare across terms, one calculates the percentage of students in each term who reached some specific level of possible gain. The pedagogical techniques that were used in the term with the most successful student outcomes should be retained for further improvement and evaluation in an ongoing cycle.

Ma (1999) used the percent of possible gain achieved measure to evaluate the success of a particular pedagogical change across semesters in his "Introduction to Chinese History and Culture" course. He provided the same study questions for his texts in both terms, but he *did not require* the students to write out their answers to these questions in the first term. His change was to require the students in the second term to write out the answers to the study questions. Ma found that in the first term only 25% of his students achieved at least 60% of their possible gain while in the second term 67% of his students achieved at least 60% of their possible gain. Consequently he has continued to require the students to write out the answers to the study questions.

While no specific level is as yet generally accepted as a minimum standard for across-term comparisons, Ma (1999) held his evaluation to a minimum standard of how many students in each term achieved at least 60% of their possible gain. He did this because he "wanted to judge effectiveness at a higher standard" (p. 3) than the more common minimum standard of how many students in each term achieve at least 50% of their possible gain (Ledoux, 1995).

The present study evaluates student outcomes resulting from two different pedagogical methods for using the novel, *The Millennium Man* (Wyatt, 1997), and its booklet of study questions (Ledoux, Wyatt, & Bias, 1999), in two different terms. This study uses the percent of possible gain achieved measure, and it reports the data at both the 50% and 60% minimum standards.

Method

In the second term, the basic pedagogy for the students' coverage of the *Millennium Man* novel and its study questions was changed with respect to the pedagogy that was used in the first term. In the first term, due to schedule constraints outside the professor's purview, (a) only one class period was available to discuss the novel and its study questions and answers in class, and (b) only one other class period was available to assess the students, so the whole novel and all its study questions were covered by one long post-test. In the second term, with schedule constraints eased, (a) three class periods were available to discuss the novel and its study questions and answers in class, so the work was divided into three roughly equal parts following the three parts into which the study questions already divided the work, and (b) three other class periods were available to assess the students, so the previous long post-test was also divided into three shorter quizzes whose scores were later combined to provide the post-test score for each student.

Pre-test scores for both terms were obtained by giving the students the same long test (the one used for the first term post-test) as a “repertoire assessment” on the first day of the term to see what novel-related material they had already learned elsewhere and so were bringing with them into the course. The course could then not be credited with teaching them this material.

In both terms, percent of possible gain achieved data were collected to measure which pedagogy had the most beneficial effect on student outcomes. To compare across terms, the percentage of students in each term who reached or exceeded 50% and 60% of their possible gain was calculated. The most beneficial pedagogy would be retained (and, in an ongoing cycle, improved further.)

Results

Table 1 shows that of the 122 first-term students (who had only one class period for discussion and one class period for a single test) 12% achieved at least 60% of their possible gain while 22% achieved at least 50% of their possible gain. Table 1 also shows that of the 93 second-term students (who had three class periods for discussion and three class periods for three separate quizzes) 56% achieved at least 60% of their possible gain while 76% achieved at least 50% of their possible gain. Across terms, the percentage of students doing better increased.

<u>Achieved at least:</u>	<u>In first term:</u>	<u>In second term:</u>
60% of possible gain	12%	56%
50% of possible gain	22%	76%

Table 1: Percent of students achieving at least 50% or 60% of their possible gain in each term.

Discussion

These results confirm that merely requiring students to write out answers to the *Millennium Man* study questions while studying that novel generates some student success, but not a lot of it. (In an earlier term, students used only a book report to answer the questions posed for students in a review of the novel [see Ledoux, 1998]. Though not formally evaluated, the book report assignment seemed to produce far less learning than the study questions alone produced.) The additional allocation of six class periods per term—three for discussion and three for assessment—to work with *The Millennium Man* demonstrably boosts student success.

While these methods had a beneficial effect, there is always room for further pedagogical improvement. The allocation of six class periods along with requiring written out study question answers should be retained while other methods are also tried in the effort to boost student success even further. Additional changes can be introduced and evaluated using the same measure. If evaluation shows a further change to be effective, it should be retained. This kind of cycle encourages professors to devise and try new methods, including combinations of methods, while keeping those that prove to work.

Conclusion

The behaviorological evaluation method used in this study is useful across courses, curricula, and campuses. Pedagogical changes must be tested. Their retention must be supported by scientific data. Indeed, the soundness of any educational innovation must be established through the kind of scientific measure used in this study.✻

Endnotes

The material reported here was part of a larger work with W. Joseph Wyatt as coauthor. That work was presented under the same title at the twenty-sixth convention of the Association for Behavior Analysis, Washington, D.C., 26-30 May 2000.

References

- Fraley, L.E. (1980). The role of measures in the contingencies on teacher behavior. In L. E. Fraley. *Behavioral Analyses of Issues in Higher Education* (pp. 9-45). Reedsville, wv: Society for the Behavioral Analysis of Culture.
- Ledoux, S.F. (1995). Why and how to measure for pedagogy change success. Paper/poster provided at the seventh annual convention of The International Behaviorology Association, Gainesville, FL, 10-12 March.
- Ledoux, S.F. (1998). Carl Sagan is right again: A review of *The Millennium Man*. *TIBI News Time*, 1 (1), 21-23. [Also 2002: *Behaviorology Today*, 5 (2), 23-25.]
- Ledoux, S.F., Wyatt, W.J., & Bias, E.F. (1999). *Study Questions for W. Joseph Wyatt's The Millennium Man*. Canton, NY: ABCs.
- Ma Wen. (1999). Using data to measure pedagogical change effectiveness. *TIBI News Time*, 2 (2), 3-4. [Also 2002: *Behaviorology Today*, 5 (2), 30-31.]
- Wyatt, W.J. (1997). *The Millennium Man*. Hurricane, wv: Third Millennium Press.✻

Using Data to Measure Pedagogical Change Effectiveness

Ma Wen

TIBI & SUNY-CTC

Editor's Note: The author of this paper was a Visiting Scholar from China being sponsored by SUNY-Canton and TIBI during the duration of the project that led to this paper. As a professor at SUNY-Canton, I worked closely with the author, helping him design this project and write this paper—including allowing the appropriate repetition of phrasings from my previous reports of similar projects (e.g., Ledoux, 1995) which, as it turns out, I also used in a subsequent report (i.e., Ledoux, 2002) of another similar project. As a result, this paper reads, as it should, much like that Ledoux, 2002, paper (which appears on the pages before this paper). However, this paper originally appeared in the Fall 1999 issue while the Ledoux, 2002, paper originally appeared in the Spring 2000 issue. They appear together here in this issue of reprinted papers because they use similar methods to evaluate similar educational goals at two different times and in two different situations.—Ed.

§

Abstract: Verifiable student success can demonstrate the value of pedagogical change. This report provides such data for a particular pedagogical technique.

§

Faculty often make changes in the pedagogical techniques they use to teach their courses. However, without data, they cannot state with confidence whether or not the changes were beneficial, nor whether or not the changes should be retained. Measures and methods are available, though, for collecting and evaluating data relevant to answering these questions.

During the 1998 calendar year, this author twice taught a course called “Introduction to Chinese History and Culture,” once in the spring term and once in the fall term. In the fall term, one pedagogical change was introduced while everything else was kept the same. Data were

collected to measure whether or not this change had any beneficial effect on student outcomes. Retention of the change depended on the presence of beneficial effects.

Method

The pedagogical change for the fall term involved requiring the students to write out a prepared answer for each of the study questions that were assigned as homework (the same questions as in the previous spring term). The completion of these answers was checked for all students and verified by recitation from students called on at random. Earlier, in the spring term, writing out the answers had been recommended, but had not been required, although the same recitation had been attempted.

The measure used to evaluate that change is called the percent of possible gain achieved (Ledoux, 1995). Fraley called it the attained percent of possible or desired gain, and described it fully along with several others (Fraley, 1980).

The percent of possible gain achieved is the ratio between a student's actual gain and the gain that was possible for that student in that term. Based on calculations with pre-test and post-test scores, the actual gain is computed by subtracting the pre-test score from the post-test score, while the possible gain is computed by subtracting the pre-test score from the maximum possible score. Then, the percent of possible gain achieved is computed by dividing the actual gain by the possible gain and then multiplying by 100. The test used to obtain the pre-test and post-test scores was the same, being the “comprehensive final exam” composed for the course (in this case, an essay test).

To compare across terms, the percentage of students in each term reaching different levels (above or below 60%) of their possible gain was calculated. The cut-off was set at 60%, rather than the more common 50% (Ledoux, 1995), because this author wanted to judge effectiveness at a higher standard.

Results

Table 1 contains the data for the two classes in the spring and fall semesters respectively. As shown in that table, of spring term students, 25% achieved 60% or more of their possible gain, while 75% achieved below 60% of their possible gain. In comparison, of fall term students, 67% achieved 60% or more of their possible gain, while 33% achieved below 60% of their possible gain. Across terms, the percentage of students doing better increased.

Achieved \geq 60% of Possible Gain	25%	67%
Achieved $<$ 60% of Possible Gain	75%	33%
	Spring '98	Fall '98

Table 1: Percent of Students in Each Term Achieving \geq 60% of Their Possible Gain, or Achieving $<$ 60% of Their Possible Gain

Discussion

These results show that the small change of *requiring* students to write out answers to the study questions benefited the fall term students. Based on this, that change should be retained. While the small change evaluated here had a beneficial effect, there is always room for further pedagogical improvement. Additional changes can be introduced and evaluated in the same way. If evaluation shows a further change to be effective, it should be retained. This kind of cycle encourages instructors to try new techniques, including combinations of techniques, while keeping those that prove to work.

Further, this behaviorological evaluation method is useful across courses, curricula, and campuses. This author will use this approach to evaluate other courses, whether taught in the USA or China (this author's home country*) and, upon returning to China, will share this approach with other colleagues there as well.

Conclusion

Any innovation is not just for innovation's sake or for the novelty effect. Each pedagogical change must be field-tested, supported by scientific data, and serve educational goals. Indeed, sound pedagogical innovations and educational changes can only be reliably established through scientifically verifiable quantitative methods like the one used in this study.✻

References

- Fraley, L. E. (1980). The role of measures in the contingencies on teacher behavior. In L. E. Fraley. *Behavioral Analyses of Issues in Higher Education* (pp. 9-45). Reedsville, wv: Society for the Behavioral Analysis of Culture.
- Ledoux, S. F. (1995). Why and how to measure for pedagogy change success. Paper/poster provided at the

seventh annual convention of The International Behaviorology Association, Gainesville, FL, 10-12 March.

Ledoux, S. F. (2002). Methods for pedagogical success with *The Millennium Man*. *Behaviorology Today*, 5 (2), 28-29.✻



A Member's Perspective

Norman Somach

*M*y interest in behaviorology derives from interrupted graduate studies at Columbia in the mid '50s. I had courses with Woodworth, Keller, Schoenfeld, and other memorable folk. BFS occasionally dropped in on Keller's class and more or less took over. I was deeply impressed by the parallel views in Skinner and Darwin.

I had some friends who were active, for a time, in the Programmed Instruction movement, in the early '60s; and I attended an APA convention in Chicago at that time. I remember lively hallway discussions involving BFS and followers concerning the practical use of their ideas. All things seemed possible.

Over time, I mostly lost touch with these matters. I was in business in Allentown, PA. I kept up with several of Skinner's books, though, and I found British "Ordinary Language" philosophy, and Wittgenstein, interesting because of their functional views which seemed related to Skinner's. Sometime in the '70s, I think, BFS spoke at Muhlenberg College—a block from my home. I chatted with him about those similarities, and he told me that Willard Day had done a paper on just that. I got hold of it.

Now, in those early '60s, I had heard about the stir and challenge created by Chomsky, but I didn't appreciate that a cognitive ascendancy was taking place. Only with the time afforded by retirement, and my move to San Diego—where the University (UCSD) is a cognitive hotbed—have I been able to read and catch up with things. Now, a bit familiar with the literature and organizations, I'll be an interested observer, lending some small support and trying to keep some intellectual operants active.✻

The International Behaviorology Institute By-laws

Article I: Names

Section 1–A. The name of this corporation shall be The International Behaviorology Institute; that name shall be represented by the initials TIBI without periods.

Section 1–B. If “TIBI” is used as an adjective preceded by the article “the,” that combination, appearing as “...the TIBI...,” shall not be redundant.

Section 1–C. The name of the *association* component of TIBI shall be The International Behaviorology Institute Association; that name shall be represented by the initials TIBIA without periods.

Section 1–D. If “TIBIA” is used as an adjective preceded by the article “the,” that combination, appearing as “...the TIBIA...,” shall not be redundant.

Article II. Purposes

Section 2–A. The purposes of The International Behaviorology Institute (TIBI) as a *professional* body shall be described under Section II–A, and the purposes of TIBI as a *corporation* shall be described under Section II–B:

TIBI is a *professional* organization that 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 a professional organization also dedicated to expanding the behaviorological literature at least through the magazine/newsletter *Behaviorology Today* (originally called *TIBI News Time*) and the *Behaviorology and Radical Behaviorism* journal* (with editors being appointed by the TIBI Board of Directors 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 TIBI’s purposes** (activities such as [a] encouraging and assisting members to host visiting scholars who are studying behaviorology; [b] enabling TIBI faculty—who must also be TIBIA Advocate (or occasionally Associate) members—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** (to be printed in each issue of *Behaviorology Today*) are:

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

*This journal (BARB) is under development at this time and will appear only when its implementation can be fully and properly supported.—Ed.

**By virtue of being purposes of TIBI, these purposes are also the purposes of TIBIA!—Ed.

Section 2-B. As a corporation the purposes of TIBI are to receive tax-deductible charitable contributions and apply such funds as are received to support TIBI's purposes as specified in Section II-A above.

Article III: Membership

Section 3-A. TIBIA shall have four categories of membership, of which two are non-voting and two are voting. The two non-voting categories shall be Student and Affiliate. The two voting categories shall be Associate and Advocate. All new members shall be admitted provisionally to TIBIA at the appropriate membership level. Advocates will consider each provisional member and then vote on whether to elect each provisional member to the full status of her or his membership level or to accept the provisional member at a different membership level.

Admission to TIBIA in the Student membership category shall remain open to all persons who are undergraduate or graduate students who have not yet attained a doctoral level degree in behaviorology or in an acceptably appropriate area, and who complete the membership application form and pay the appropriate dues.

Admission to TIBIA in the Affiliate membership category shall remain open to all persons who wish to maintain contact with the organization, receive its publications, and go to its meetings, but who are not students and who may not have attained any graduate degree in behaviorology or in an acceptably appropriate area, and who complete the membership application form and pay the appropriate dues. On the basis of having earned TIBI Certificates, Affiliate members may nominate themselves, or may be invited by the TIBI Board of Directors or Faculty, to apply for an Associate membership.

Admission to TIBIA in the Associate membership category shall remain open to all persons who are not students, who document a behaviorological repertoire at or above the masters level or who have attained at least a masters level degree in behaviorology or in an acceptably appropriate area, who maintain the good record—typical of “early-career” professionals—of professional accomplishments of a behaviorological nature that support the integrity of the organized, independent discipline of behaviorology including its organizational manifestations such as TIBI and TIBIA, and who complete the membership application form and pay the appropriate dues. On the basis either of documenting a behaviorological repertoire at the doctoral level or of completing a doctoral level degree in behaviorology or in an acceptably appropriate area, an Associate member may apply for membership as an Advocate.

Admission to TIBIA in the Advocate membership category shall remain open to all persons who are not students, who document a behaviorological repertoire at the doctoral level or who have attained a doctoral level degree

in behaviorology or in an acceptably appropriate area, who maintain a good record of professional accomplishments of a behaviorological nature, who demonstrate a significant history—typical of experienced professionals—of work supporting the integrity of the organized, independent discipline of behaviorology including its organizational manifestations such as TIBI and TIBIA, and who complete the membership application form and pay the appropriate dues.

The criteria for each membership level shall be printed in each issue of *Behaviorology Today*. Also, lists of the members at each membership level shall be periodically provided to members in a letter or email, or in a directory, or in *Behaviorology Today*.

Section 3-B. The TIBI Board of Directors bears final responsibility regarding decisions on acceptably appropriate degree areas and specific criteria for each membership category. The criteria and degree areas for each membership category may be reviewed and, with the concurrence of the Board of Directors, edited as deemed appropriate by the officers—the “Executive Board”—of the voting members of TIBIA.

Section 3-C. With the concurrence of the Executive Board of the voting members of TIBIA, a group may hold a group-membership in TIBIA. At least one member of the group must hold an individual membership in TIBIA by fully meeting the criteria for the level of membership held, and one such member-person will be chosen by the group to act as the group's formal representative to TIBIA. The person serving as the group's representative to TIBIA may be changed at the discretion of the member group. At any given time, such a member group shall have only those rights and privileges normally attached to the category of membership in TIBIA held by its current representative. Any such member group shall have only one vote on matters upon which its representative is eligible to cast a vote, get only one free subscription to publications provided with membership, and receive only one copy of any other materials or benefits distributed to members. The person in the group, who is to act as the group's representative and who shall be a qualified individual member of TIBIA, shall, upon recognition by the highest ranking TIBIA officer present at, or in control of, any official TIBIA function, be authorized to speak, vote, or otherwise represent the group. Any such designated person shall function on behalf of the represented group *only* with the rights and privileges of the level of TIBIA individual membership held by that person. If during the tenure of a group membership, no member of a member-group qualifies as an individual member of TIBIA and accepts the appointment and responsibility for representing the group, then the group membership automatically ends.

Section 3-D. Establishing the annual dues structure for the different membership categories takes partially

into account, by means of percentages of annual income, the differences in income levels and currency values among the world's various countries. Thus, the annual dues for each membership category (which shall be printed in each issue of *Behaviorology Today*) are:

Membership Category	Dues (in US dollars —\$10 minimum)
Advocate	The lesser of 0.4% of annual income, or \$80.00
Associate	The lesser of 0.3% of annual income, or \$60.00
Affiliate	The lesser of 0.2% of annual income, or \$40.00
Student	The lesser of 0.1% of annual income, or \$20.00

Article IV: Board of Directors, Faculty, Officers, Terms, and Vacancies

Section 4-A. TIBI will have a Board of Directors and a Faculty. These shall be constituted as follows:

The TIBI Board of Directors shall consist initially of the founders of TIBI and the TIBIA President. The members of the TIBI Board of Directors may create additional membership seats on the TIBI Board of Directors by unanimous vote for each membership seat created, however the total number of members shall not exceed ten. For any additional seat created, the TIBI Board of Directors shall by unanimous vote elect a new Board member to fill the new seat from among the TIBI Faculty or from among past or present TIBIA elected officers. When a member of the TIBI Board of Directors resigns, the remaining members of the TIBI Board of Directors may by unanimous vote eliminate that membership seat, however the total number of Board members shall not be less than five. Members of the TIBI Board of Directors shall serve in that capacity until they resign.

Members of the TIBI Board of Directors will maintain TIBIA Advocate membership. Except for the TIBIA President, Board members will pay an annual Board of Directors dues of the lesser of 0.6% of annual income or US\$120.00 (minimum: US\$20.00). Failure to maintain TIBIA Advocate membership, or failure to pay annual Board of Directors dues, will constitute resignation from being a member of the TIBI Board of Directors. When the seat of a member of the TIBI Board of Directors who resigns is retained, the remaining members of the TIBI Board of Directors will replace him or her by electing a new Board member from among the TIBI Faculty or from among past or present TIBIA elected officers. Board of Di-

rectors dues shall be printed in each issue of the *Behaviorology Today* magazine/newsletter.

In addition to the TIBI founders who shall be TIBI Faculty members so long as they hold TIBIA Advocate membership and meet all other faculty requirements, the TIBI Faculty will be those accepting TIBI Faculty appointments made by the TIBI Board of Directors from among all TIBIA Advocates or by special exception as the TIBI Board of Directors deems appropriate. TIBI Faculty appointments may be for a specified or an unspecified period; in either case, the appointments may be rescinded. All TIBI Faculty will maintain TIBIA Advocate membership (unless an exception applies), as well as pay an annual Faculty dues of the lesser of 0.5% of annual income or US\$100.00 (minimum: US\$20.00). Failure to maintain TIBIA Advocate membership (unless an exception applies), or failure to pay annual Faculty dues, will constitute resignation from being a TIBI Faculty member. Faculty dues shall be printed in each issue of *Behaviorology Today*. Faculty may receive stipends from TIBI.

All doctoral level behaviorologists (a) who are TIBI Faculty members, or (b) who are offered and accept appointments as TIBI Faculty members, shall receive from TIBI the *DLBC* (Doctoral Level Behaviorology Certificate), recognizing the level of their behaviorological repertoire, as part of TIBI's expression of appreciation for their service contributing to the teaching of other behaviorologists.

Lists of the TIBI Board of Directors and all TIBI Faculty (and TIBI students asking to be listed) shall be printed in each issue of *Behaviorology Today*.

Section 4-B. TIBIA Officers will be (a) a President, (b) a Vice President, and (c) a Secretary. All three officers will be elected by the voting members of TIBIA from among the Advocates. Should the President be unable to carry out the duties of office, the Vice President shall assume those duties until the President—within her or his term of office—is again able to carry them out, and the Secretary will be third in that same line of succession. Should all three officers be unable to carry out the duties of office, the TIBI Board of Directors will review and act on available options.

The three elected officers shall appoint, from among the Advocates and Associates, other officers as they deem necessary for the successful operation of TIBIA.

TIBIA will have an Executive Board, with up to ten members, consisting of the three elected officers, the chair of the TIBI Board of Directors, the immediate TIBIA past president, and up to five senior appointed TIBIA officers.

Lists of the TIBIA Executive Board members and all elected and appointed officers and their terms shall be printed in each issue of *Behaviorology Today*.

Section 4-C. TIBIA officers shall have terms of three years duration. A person may serve as president for more than one term but may not be elected to consecutive full

terms. A person may serve as vice president for no more than three consecutive full terms, though a person may serve as vice president for more than three terms if the terms are not consecutive. A person may serve as secretary for no more than five consecutive full terms, though a person may serve as secretary for more than five terms if the terms are not consecutive. Appointed officers are not limited to any fixed number of terms.

Section 4–D. If an *elected* officer vacates office and one year or less remains in the unexpired term, the TIBIA Executive Board shall, within three months of the vacancy, appoint a replacement to finish the three-year term. If more than one year remains in the unexpired term, a special election shall be conducted by the TIBIA Executive Board within three months of the vacancy to fill that office for the remainder of the unexpired term. If an *appointed* officer vacates office before the expiration of his or her term, the TIBIA Executive Board shall act within three months of the vacancy either (1) to appoint a person to complete the unexpired term, (2) to allow the office to go unfilled until such time as the TIBIA Executive Board appoints a person to fill it, or (3) to eliminate the office.

Section 4–E. The three-year terms of each of the elected officers shall run concurrently, beginning on January 1. The terms of office for the first set of elected officers shall have begun on 1 January 1998 and shall end on 31 December 2000.

Section 4–F. An elected officer of TIBIA may be removed from office by a two-thirds majority vote of the voting members of TIBIA. Such a vote shall occur upon the presentation to the TIBIA Executive Board of a petition, signed by at least one-fifth of the current TIBIA voting members. The petition shall name the officer whose removal is sought, specify the reasons for the action to remove from office, and request that such a vote be taken. The officer whose removal is sought shall prepare a rebuttal at his or her option within ninety (90) days from notice of the petition action. The reasons for the removal and the rebuttal, if any, shall be presented to the voting members before they are asked to vote on a motion to remove an elected officer.

Section 4–G. An appointed officer, or a person appointed to any other official duty or task within TIBIA, may be removed by action of the TIBIA Executive Board from that position prior to the expiration of the appointed term of office regardless of how that term and the office are defined. The reasons for such a removal action shall be given to the person at least 30 days prior to an opportunity for that person to be heard by the TIBIA Executive Board regarding the removal action, which hearing must occur prior to the removal action taking effect.

Section 4–H. The TIBIA President and Vice President may divide and specify how the usual duties of such executive positions will be shared between them. The duties

of the TIBIA Secretary will include (a) taking the minutes of all official meetings, (b) verifying those minutes—within 30 days of the meeting—with those present or with a sub-group of them authorized by them to authenticate the minutes, (c) providing the verified minutes to the members, and to the *Behaviorology Today* magazine/newsletter editor, by letter or email, (d) carrying out the election procedures as needed, (e) sending “Thank You” correspondence to persons making material donations or monetary contributions to TIBIA, (f) verifying that responses have been made to correspondence addressed to TIBIA or any of its officers, (g) coordinating the production of a *TIBIA Directory*, and (h) distributing TIBIA announcements (e.g., of position statements or meetings).

Article V: Nominations And Elections

Section 5–A. Elections shall be conducted by the TIBIA Executive Board. Six months before an elected officer’s term begins, the nomination and election procedure is begun and proceeds as follows: Ballots calling for nominations shall be prepared and distributed to all voting members of TIBIA by the end of July, and returned, along with statements of willingness “to serve if elected” from those being nominated, by the end of September if they are to be counted. The names of the two persons receiving the highest number of nominations for each office, from among those who are both eligible and willing to serve if elected, shall be placed on the official TIBIA election ballots. Those ballots shall be prepared and distributed to all voting members of TIBIA before the end of October and returned before the end of November if they are to be counted. The results of such elections shall be available before the end of December and shall be reported to the members by letter or email and in *Behaviorology Today* and announced at the next TIBIA meeting. On 1 January each newly elected officer begins her or his term of office.

Article VI: Meetings

Section 6–A. The TIBIA President may call meetings of the TIBIA Executive Board, and must call a meeting when requested by a majority of the TIBIA Executive Board. The TIBIA Executive Board shall call general meetings of TIBIA members. An annual meeting of TIBIA/TIBIA members will be held. The proceedings of all these meetings will be reported to the members by letter or email or in the next issue of *Behaviorology Today* (and whenever possible, these meetings will be announced beforehand in *Behaviorology Today* as well).

Article VII: Quorum

Section 7–A. For the TIBIA Board of Directors to take any action, a quorum of *all* the Board members must be involved although the involvement need not require being

bodily present at a traditional meeting because involvement may be by electronic or other communications methods at different points in time. Should full consensus on a motion not be reached, members may vote through the communication means of their involvement either for or against the motion—or specifically abstain—and the motion will pass only if a minimal consensus of 80% is reached among board members in favor of the motion. Actions of the TIBI Board of Directors will be reported to the members by letter or email or in the next issue of *Behaviorology Today*.

Section 7-B. A quorum at business meetings of the TIBIA Executive Board shall consist of either the three elected officers plus two other TIBIA Executive Board members, or two of the three elected officers plus four other TIBIA Executive Board members. No valid business meeting of the TIBIA Executive Board can be conducted if a bona fide attempt was not made to provide timely notice of the meeting to each person eligible to participate.

Section 7-C. The TIBIA Executive Board may create an Executive Committee consisting of a subset of the TIBIA Executive Board members. The Executive Committee subset must have at least three members of which one must be a member of the TIBI Board of Directors. The proceedings of all Executive Committee meetings will be reported to the members by letter or email or in the next issue of *Behaviorology Today*. The quorum at business meetings of the Executive Committee shall be as indicated in the following chart:

Executive Committee	
<u>Number of Members</u>	<u>Quorum</u>
3-5	3
6 or 7	4
8 or more	70%

Section 7-D. The quorum at business meetings of other groups within TIBIA shall be determined by those groups, except that at *initial* organizational meetings of any such groups having predetermined numbers of members, the quorum at the first meeting shall be 50% of the previously defined membership.

Article VIII: Fiscal Matters and Treasurer Responsibilities

Section 8-A. Each member's dues shall be due and payable in or before the month of December before the next membership year.

Section 8-B. Members who qualify and apply for a change in membership status shall see an approved status change at the start of the next membership year.

Section 8-C. TIBI and, as part of TIBI, TIBIA shall share a Treasurer appointed by, and from among, the members of the TIBI Board of Directors. The Treasurer

shall be responsible for keeping records of billing of members for all types of dues and dues payments described in these By-laws. He or she shall be responsible for keeping records of any contributions received and disbursements made. She or he will prepare a report on the fiscal and membership status of TIBIA to be presented at each annual TIBIA Executive Board meeting and at each additional TIBIA Executive Board meeting at which a report describing the fiscal or membership status of TIBIA might be relevant. The report will also be distributed to the TIBI Board of Directors. Once each year or when requested, he or she will also prepare a report on the fiscal status of TIBI, including dues billed and paid, contributions received, and disbursements made. This report will be provided to the TIBI Board of Directors. All such reports shall be printed in the corporate record (along with the minutes of the legally required annual meeting of the TIBI Board of Directors) and shall be reported to the members by letter or email or in *Behaviorology Today*.

Section 8-D. In addition to the automatic allocation of adequate funds to support the *Behaviorology Today* magazine/newsletter, the *Behaviorology and Radical Behaviorism* journal, and the postage and supply costs incurred through the duties of the Secretary, the policies for (a) the investment of TIBIA funds, (b) expenditures, and (c) disbursements, policies which may result from actions of the TIBIA Executive Board or which may be proposed by TIBIA members, shall be approved by the voting members of TIBIA at the annual TIBIA meeting. Those policies shall be carried out by the TIBIA Executive Board. All such policies shall be reported to the members by letter or email or in *Behaviorology Today*.

Section 8-E. In addition to the automatic allocation of adequate funds to support the training of TIBI's students, the postage and supply costs and accounting agency fees incurred through the duties of the Treasurer, and support for the *Behaviorology Today* magazine/newsletter and the *Behaviorology and Radical Behaviorism* journal, the policies for (a) the investment of TIBI funds, (b) expenditures, and (c) disbursements shall be determined and carried out by the TIBI Board of Directors. All such policies shall be reported to the members by letter or email or in *Behaviorology Today*.

Section 8-F. In addition to treasurer responsibilities, the treasurer will bear some secretarial responsibilities. These will include (a) corresponding with those applying for training, and (b) maintaining the TIBI corporate seals, certificate stocks, and records of certificates earned/presented.

Article IX: Position Statements

Section 9-A. Position statements of TIBIA shall become official after both receiving the approval of the TIBIA voting members, according to voting arrangements specified and carried out by the TIBIA Executive Board, and

receiving the concurrence of the TIBI Board of Directors. Thereafter, dissemination of such position statements shall be considered official only if made by a member of the TIBI Board of Directors or by an elected officer of TIBIA, and in the event of publication, only if accompanied by a statement of endorsement as an official position statement of TIBIA. All official position statements shall be printed in the *Behaviorology Today* magazine/newsletter and the *Behaviorology and Radical Behaviorism* journal.

Section 9-B. Affiliated organizations, groups holding group memberships in TIBIA, TIBIA members, or other TIBIA related units are required to disclaim explicitly any implications of TIBIA endorsement of any position statements that they might adopt unless such statements have been formally approved by TIBIA as specified in Section 9-A.

Section 9-C. The TIBI and TIBIA names may not be used by any TIBIA member in any way that implies an official endorsement by the organization unless such an official endorsement has been extended by the organization and the member is acting in accordance with the provisions of that endorsement.

Section 9-D. Activities or works of any TIBIA member which mention TIBIA or TIBI, or names that could be confused with these names, are to carry a statement clarifying that no official TIBI or TIBIA endorsement of those activities and works has been sought or provided.

Article X: General

Section 10-A. The TIBI Board of Directors and the TIBIA Executive Board shall maintain a Policies and Procedures manual, the contents of which shall not contradict these TIBI By-laws. This manual shall reflect the preferences of these boards in running the day to day affairs of TIBI and TIBIA. The boards shall be guided by the policies and procedures set forth in this manual. This manual shall be printed in *Behaviorology Today* as should any changes to it.

Section 10-B. TIBI and TIBIA shall not have any policy, procedure, or by-law which makes race, color, creed, ethnicity, age, gender, physical condition, sexual preference, or national origin a criterion for granting admission to TIBIA membership or to any TIBI or TIBIA program or activity.

Section 10-C. Any member of TIBIA who resigns from membership in TIBIA or who allows her or his TIBIA membership to lapse by failing to pay dues and renew membership, shall thereby terminate all benefits, privileges, and opportunities of membership. Upon subsequently rejoining TIBIA, if that occurs, he or she shall be considered a new member in the appropriate membership category and shall receive no additional credit, status, or other benefits based on prior TIBIA membership except that should she or he pay the dues that would have

been assessed in the intervening years then he or she will be considered to have been a member for those years.

Article XI: Amendments to By-laws

Section 11-A. Amendments to these By-laws may be proposed by any member of the TIBI Board of Directors or by a petition signed by at least 70% of those listed as TIBIA voting members. These By-laws may be amended by any of three mechanisms: (a) These By-laws stand amended if 80% or more of the TIBI Board of Directors votes for the proposed amendment. Or (b) at any time that TIBIA has more than 50 voting members these By-laws stand amended if 90% or more of TIBIA voting members signs a petition requesting the change. Or (c) if an amendment is not adopted by action of the TIBI Board of Directors after that amendment was proposed by a petition signed by between 70% and 89% of TIBIA voting members (at any time that TIBIA has more than 50 voting members), then the TIBI Board of Directors must, within 30 days of their vote, distribute a report to all TIBIA voting members describing why the amendment was not adopted; however, if that report is not distributed in a timely manner, then the proposed amendment takes effect and the By-laws stand changed. All By-laws changes shall be reported in *Behaviorology Today*.

Article XII: Newsletter Communications

Section 12-A. The purposes of TIBI shall be printed in each issue of *Behaviorology Today* (the TIBI magazine/newsletter). [From (section) 2-A.]

Section 12-B. The criteria for each TIBIA membership level shall be printed in each issue of *Behaviorology Today*. [From 3-A.]

Section 12-C. The annual dues for each TIBIA membership category shall be printed in each issue of *Behaviorology Today*. [From 3-D.]

Section 12-D. Lists of the members of TIBIA at each membership level shall be periodically provided to members by letter or email, or in a directory, or in *Behaviorology Today*. [From 3-A.]

Section 12-E. Board of Directors dues and Faculty dues shall be printed in each issue of *Behaviorology Today*. [From 4-A.]

Section 12-F. Lists of the members of the TIBI Board of Directors and TIBI Faculty, (and TIBI students asking to be listed) shall be printed in each issue of *Behaviorology Today*. [From 4-A.]

Section 12-G. All Actions of the TIBI Board of Directors will be reported to the members by letter or email, or in the next issue of *Behaviorology Today*. [From 7-A.]

Section 12-H. The results of TIBIA elections shall be reported to the members by letter or email, or in the next issue of *Behaviorology Today*. [From 5-A.]

Section 12-I. Lists of the TIBIA Executive Board members and all elected and appointed officers and their terms shall be printed in *Behaviorology Today*. [From 4-B.]

Section 12-J. The proceedings of all TIBIA Executive Board, general, and annual meetings will be reported to the members by letter or email, or in the next *Behaviorology Today* (and whenever possible, these meetings will be announced beforehand in that periodical as well). [From 6-A.]

Section 12-K. The proceedings of all meetings of the Executive Committee of the TIBIA Executive Board will be reported to the members by letter or email, or in the next *Behaviorology Today*. [From 7-C.]

Section 12-L. All reports from the TIBI/A Treasurer shall be provided to the members by letter or email, or in the next issue of *Behaviorology Today*. [From 8-C.]

Section 12-M. All TIBI and TIBIA fiscal policies regarding income, expenditures, disbursements, and temporary investment of income prior to disbursement, shall be reported to the members by letter or email, or in *Behaviorology Today*. [From 8-D and 8-E.]

Section 12-N. All official TIBIA position statements shall be printed in the *Behaviorology Today* magazine/newsletter and in the *Behaviorology and Radical Behaviorism* journal. [From 9-A.]

Section 12-O. The updated/current version of these By-laws, and the Policies and Procedures manual of the TIBI Board of Directors and the TIBIA Executive Board, shall be printed in *Behaviorology Today* when they change. [From 10-A.]

Section 12-P. By-laws changes shall be reported in *Behaviorology Today*. [From 11-A.]

Article XIII: Rules of Procedure

Section 13-A. The rules contained in the most recent edition of *Robert's Rules of Order (Newly Revised)* shall govern TIBI, including TIBIA, in all cases to which they are applicable and in which they are consistent with these By-laws and with any special rules, policies, or traditions that TIBI or TIBIA might recognize; otherwise, these By-laws and the special rules, policies, and traditions of TIBI or TIBIA shall govern.

Article XIV: Dissolution

Section 14-A. In the event of the dissolution or termination of TIBIA, the association component of TIBI, all of the assets and title to and possession of the property of TIBIA shall pass to TIBI.

Section 14-B. In the event of the dissolution or termination of TIBI, all of the assets and title to and possession of the property of TIBI shall pass to a scientific educational organization selected by the TIBI Board of Directors.☺☺

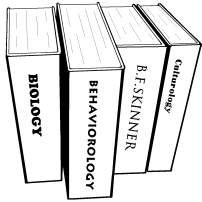
The International Behaviorology Institute

Policies and Procedures

Editor's Note

Some might wonder why offering training in behaviorology is an important professional activity in which to engage. Here [adapted from the editorial in *TIBI News Time*, 2 (1) 1999] is one brief answer (and you can and should supply others, perhaps with even more detail; send them to this editor for inclusion in a future issue):

Many have made guesses about why people do what they do and—as we behaviorological scientists and practitioners emphasize—what can be done about it. Occasionally one or another of these guesses has turned out to be the same as the answers provided through the systematic, experimental research of our natural science of behavior. Such guesses, offered without the context of the science, leave the guessers ill-prepared for changes in the circumstances surrounding the application of their guess; they are left without foundations for figuring out what to do under changed circumstances, which reduces their effectiveness in working with those whom they want to help. In contrast, when answers to those fundamental questions come in the context of the systematic, experimental research of our natural science of behavior, that context prepares the user to take informed actions when circumstances change, actions that are thereby more likely to prove effective and thus helpful. For example, as with parents and teachers in general, those who have little behaviorological training yet work one-to-one with autistic children would find their skills in that situation much enhanced by appropriate behaviorological training, and the children would benefit. Such training, however, is not yet widely available either for parents or for teachers or for those who work with autistic children. One reason why TIBI offers training in behaviorology is to increase that availability. Furthermore, for those who study behaviorology, TIBI provides certificates acknowledging specific levels of behaviorological repertoire, including a *Certificate in Effective Autism Intervention*. At www.behaviorology.org you can explore these certificates and the courses they include. (Some TIBI faculty or other behaviorology professors may have already trained some of their students to repertoire levels that merit certificates; if so, this should be brought to the attention of the Institute so that these students can receive the certificates that they have earned.)—Ed.☺



The International Behaviorology Institute

Behaviorology

Conductologia

Xingwei Xue

Gedragsofologie

Behaviourology

TIBI BOARD OF DIRECTORS/FACULTY

John W. Eshleman, ed.D. (Chair)

ELS, Inc.

Tucker, GA

JohnEshleman@aol.com

David R. Feeney, ed.D.

Director of Digital Education

Fox School of Business & Management

Temple University, Philadelphia, PA

DavidFeeney@aol.com

Lawrence E. Fraley, ed.D. (Retired)

Professor

West Virginia University at Morgantown

Route 1 Box 233A/Reedsville WV 26547

304-864-3443 lfraley@citlink.net

Glenn I. Latham, ed.D. (1931-2001)

Professor

Utah State University at Logan

Co-Founder & Member In Perpetuity

Stephen F. Ledoux, ph.D.

Professor

State University of New York at Canton

ledoux@canton.edu

Doreen E. Vieitez, ed.D.

Professor

Joliet Junior College, Joliet IL

dvieitez@accesschicago.net

TIBI Instructional Design Manager

John W. Eshleman

TIBI Digital Course Master

David R. Feeney

TIBI Treasurer

Stephen F. Ledoux

Behaviorology Today

WT Magazine/Newsletter Editor

Stephen F. Ledoux

A non-profit educational corporation with offices at:

9 Farmer Street • Canton NY 13617-1120 • USA

Phone • Fax: (315) 386-7423 • 386-7961

Web: www.behaviorology.org

TIBI Policies and Procedures

Effective Date: 2001 December 1

& **General**

& **Primary Course Descriptions**

& **Curricula Brochure Panels**

The International Behaviorology Institute

Policies and Procedures

General

Meetings

In addition to scheduled meetings, whenever either TIBI personnel or TIBIA members find themselves in the same place at the same time (e.g., at the convention of another disciplinary organization) in numbers that meet the by-laws quorum requirements, they may organize a meeting. The activities of such meetings must be properly recorded, submitted to the TIBI office, and reported in the newsletter.

TIBI. The Institute will have at least one official corporate meeting each calendar year. Such meetings will be scheduled in conjunction with other relevant meetings such as those of the Board of Directors or faculty.

TIBIA. The Association will have at least one official membership/business/presentation meeting each calendar year. Such meetings will be scheduled in conjunction with other relevant meetings such as those of TIBI.

Membership & Dues Concerns

Membership. Regular membership levels are defined in the By-laws and printed in each issue of *Behaviorology Today*. Any additional “online” membership levels, and “donor” levels, will be published online. A complete and up-to-date vita will be requested from professionals who initially join as Associate or Advocate members. This will provide a record of the appropriateness of their membership level as well as the information upon which to base an invitation/appointment to TIBI faculty status.

Dues. Retired professionals who request a dues reduction will be granted a 50% reduction.

Encouraged Activities

TIBIA members are encouraged to participate in the activities of the behaviorology discipline in as many ways as possible. This will help to expand the discipline and its contributions to the culture.

Training. Members are encouraged to help organize and prepare (and, as appointed faculty, teach) behaviorology courses, especially the Institute’s courses, either face to face or by mail (regular or electronic).

Hosting. While TIBI’s online courses are a more workable option for behaviorology training even to potential visiting scholars, members might also host visiting schol-

ars from countries where behaviorological training opportunities are scarce and/or where the scholars cannot afford the training otherwise. Hosts can help arrange the training, locally or through TIBI, or provide the training themselves if they are also TIBI faculty. (To avoid compromising their status as potential hosts for official visiting scholars studying behaviorology through TIBI, members are advised not to write separate, personal financial support letters for foreign visitors.)

Since documenting the economic facts of hosting activity is helpful with respect to possible future grant applications to support this activity, some preferred procedures are involved. When several contributors have donated sufficient funds to cover the support needed for a particular visiting scholar, then TIBI will pay for the provision of that support. At other times, one or another member will offer to be a host and so support a visiting scholar. To document this circumstance, the host makes a tax-deductible contribution of US\$2,000 to TIBI expressly to cover the room and board for a particular visiting scholar for a ten-month academic year. TIBI then pays the host \$2,000 to host—provide room and board and local transportation for—that scholar. For support for a full calendar year, the amount should be US\$2,400; for a stay of six months, the amount should be US\$1,200. (Hosts should consult with their tax professional about incurred expenses deductible against that income, etc.) Note that in this document *all* dollar amounts are US dollars (US\$) even if the “us” is not stated.

Inventing. Members are encouraged to invent other ways to participate, and to improve upon the ways others have invented. (For example, members can organize outreach methods to bring behaviorology to the wider culture by [a] designing new, and disseminating old and new, instructional materials—alone or in whole-course collections for further course development and use—for teaching behaviorology at all educational levels, and/or [b] by working to bring behaviorological science to educators and so help reduce both academic child abuse and teacher abuse.)

Certificates & Courses

Certificates. The Institute provides training leading to six *primary* certificates. Some details about these certificates will be found on pages 176–180 of the book *Origins and Components of Behaviorology—Second Edition* (2002; Canton, NY: ABCs). Here are the six certificates:

- ❧ the *Behavior Literacy Certificate* (BLC)
- ❧ the *Associate of Behaviorology Certificate* (ABC),
- ❧ the *Baccalaureate Level Behaviorology Certificate* (BLBC)
- ❧ the *Professional Studies in Behaviorology Certificate* (PSBC)
- ❧ the *Masters Level Behaviorology Certificate* (MLBC)
- ❧ the *Doctoral Level Behaviorology Certificate* (DLBC)

The BLC, ABC, and BLBC are undergraduate level certificates. The PSBC, MLBC, and DLBC are graduate level certificates. The Institute may add other types of certificates in the future.

Work for the BLC must include full coverage of all of the contents, especially the history, scope, and mission-of-behaviorology topics, of *Origins and Components of Behaviorology—Second Edition* (2002; Canton, NY: ABCs). This can best be done by using that book itself, and supplementing the book when even more complete sources become available that cover those contents and topics.

The Institute is an *independent*, non-profit educational corporation. As such, the validity and significance of the Institute's training, and hence certificates, is to be evaluated on the basis of the success of the research and application skills of its graduates. These are initially implied by the certificate levels that the graduates have attained. Put another way, the credentials of a graduate should not be judged adversely just because no initials of "degrees" (such as the A.A., B.A., M.A., or Ph.D.) appear after the graduate's name. (Graduates may, if they so desire, put the initials of their certificate after their names.)

Courses. The behaviorology courses required for the Institute's primary certificates are listed in the Institute's "Curricula Brochure" supplement of these *Policies and Procedures*, while descriptions of these courses are provided in the "Course Descriptions" supplement of these *Policies and Procedures*. (The titles of any courses or certificates added beyond the courses of the Institute's primary certificates are provided at the end of this section, while descriptions of added courses are provided online.)

TIBI courses should be completed within a standard time frame of four months *or less*. Few courses will need that much time, unless several are being taken concurrently. If a particular course is the main activity occupying a student's time, that course could be completed in as little as three weeks (based on a standard university single-course, three-week summer session pattern involving nine hours per day—three "in class" and six "outside class"—for five days per week for the three weeks).

For students whose full-time activity is studying behaviorology courses with the Institute (e.g., professionals who have already graduated from college but who want to add behavioral science and technology rapidly to their professional repertoires) the standard time frame extrapolates to completing perhaps 15 courses in a year. (The actual number will depend on other factors such as effort, background, study skill, etc.). Starting from the beginning, this is sufficient time for such students to complete the PSBC in an academic year.

Regarding course completion, the goal, expectation, and plan of TIBI, its faculty, and its students is that coursework be, if necessary, auto-remediated within a course to the "A" level. Under this goal a course is best

completed when that level is attained. This can be done within TIBI's standard course time frame.

Note that the Institute provides *certificates* for completed training to recognize the expansion of any student's repertoire. The Institute does not grant "degrees" as it is not chartered to do so. The formally organized behaviorology discipline is not yet a regular part of the academic scene; in 1998 only one chartered institution in the whole USA was granting a graduate degree *explicitly* in that discipline: the M.A. in Behavior Analysis—an older name for Behaviorology—from the Department of Behavior analysis at the University of North Texas. Even taking into account programs that only *implicitly* offer degrees in behavioral science—by offering them from within the departments of other disciplines or fields—the opportunities to study behaviorology are currently rather sparse in the USA. One of the major reasons why *The International Behaviorology Institute* exists is precisely that scarcity of opportunities!

Beyond the courses of the Institute's *primary* certificates, here are the titles both of additional courses, and of additional certificates (along with the course numbers whose completion fulfill the certificate's requirements):

Added Certificates: The one certificate that has been added beyond the primary certificates is the *Certificate in Effective Autism Intervention*. The course numbers whose completion fulfill this certificate's requirements are: BEHG 101, BEHG 102, and BEHG 201—which are the three courses of the BLC—plus BEHG 415, and BEHG 425.

Added Courses: Four courses have been added beyond the courses of the primary certificates. Here are the titles of these four courses:

- ❧ BEHG 400: The Behaviorology of Rehabilitation;
- ❧ BEHG 415: The Behaviorology of Basic Autism Intervention Methods;
- ❧ BEHG 420: The Behaviorology of Performance Management and Preventing Workplace violence;
- ❧ BEHG 425: The Behaviorology of Non-Coercive Classroom Management and Preventing School violence.

How to Enroll in TIBI Courses

To enroll in TIBI courses and work towards TIBI certificates, simply contact the Institute or any TIBI faculty member. Applicants will specify their goals and their prior contact, if any, with courses and degree programs having behavioral content. (Transcripts, available course descriptions and/or syllabi, products completed during the coursework, and/or a complete and up-to-date vita may need to be supplied.)

Based on that information, applicants will consult with TIBI faculty regarding which certificate they should work toward, and which course should be their first

course. Then they can pay the tuition-like fees (hereafter, simply “fees”) and begin their first course.

Substitute Credit from Other Sources

Before, or while, working to fulfill requirements for one of the Institute’s certificates, a student may cover behaviorological content in one or more of the courses of other institutions or in self-study. Upon receiving a written request, the Institute may consider whether or not that work would be an adequate substitute for Institute work. (Remediation to “A” level may be required.)

If deemed adequate, the Institute may list that work as fulfilling the requirements of one or another, or part of one or another, of its own courses. The consideration will be made by two to three TIBI faculty members of whom at least one is a member of the Board of Directors, with at least two agreeing to the decision. (Appeals will be heard by a panel, appointed by the Board of Directors, of three TIBI faculty, two of whom are Board of Directors members; any decision to change a previous determination must be unanimous. The decision of this panel is final.)

The information usually contained in course descriptions and syllabi, along with the products completed during the work, if available, will be among the materials that need to be submitted along with the request for substitute credit. Any further information needed for the consideration will be supplied by the student requesting the consideration.

In addition, a processing charge of 10% of the fee value of the work to be replaced by the outside work will accompany the request. (This amount will be determined by consulting a TIBI faculty member—who will serve as one of the faculty members considering the matter, and who will organize the other faculty to consider the matter—prior to preparing the written request.) Half of this charge will be refunded if the request is denied. If an appeal is made and the original decision changed, then the refund must be resubmitted before the result of the appeal can be carried out.

TIBI faculty teaching at other institutions may request a free predetermination on the extent to which their regular behaviorological courses match TIBI course content or certificate requirements. Courses which do so will be considered as automatic substitutes for TIBI work. Students taking courses predetermined to be adequate substitutes will automatically receive fee-free credit toward TIBI certificates. When students earn a certificate this way, the faculty member will receive certificates from TIBI for those students upon receipt of the students names and other pertinent information.

Recognition of Previously Acquired Repertoires

Students, or professionals who are behaviorological scientists and practitioners with official degrees in other

disciplines or fields, may request an evaluation from TIBI to see at what Institute certificate level their previous training and experience would place them. The request will be in writing and will be accompanied by a complete and up-to-date vita and a non-refundable fee of \$20 (free to TIBIA members). Should other information be needed (e.g., course descriptions or syllabi) it will be supplied by the student or professional requesting the evaluation. Non-TIBIA members who request and pay for an evaluation, and later either (a) join TIBIA, or (b) enroll in an Institute course to further their behaviorological education, will have the \$20 credited toward either the cost of membership or the fee cost of their first course. Those for whom this evaluation has been done will receive the TIBI certificate for which their prior training and experience qualifies them, and/or a description of what is necessary to complete the next certificate level.

The evaluation will be made by consensus among two to three TIBI faculty members of whom at least one is a member of the Board of Directors. (Appeals will be heard and decided by consensus among three TIBI faculty—two of whom are Board of Directors members—appointed by the Board of Directors. The decision of this panel is final.)

Web Site

TIBI’s web site is “www.behaviorology.org” and the contact for the site will be TIBI’s “Instructional Design Manager.” She or he will receive a stipend from TIBI (in an amount determined by the Board of Directors) for managing (a) the site, (b) the e-mail links at the site, (c) the printed materials on the site (e.g., the magazine), (d) the quality and placement of TIBI’s web courses, and (e) the connection of students with their distance-learning behaviorology courses and faculty.

Fees

The Institute’s courses are generally conceived as three-credit courses, each to be completed in the standard time frame of four months *or less* (although some courses can be taken concurrently). When certificates are completed in a timely manner, the Institute’s fee rates, which are applicable to everyone regardless of geographical home, become essentially equivalent to \$67 per credit hour for its undergraduate courses (i.e., \$200 per course) and \$100 per credit hour for its graduate courses (i.e., \$300 per course). (This [a] is about half of the typical 1998 “resident” [i.e., in-state] rate at a state university such as SUNY [using 1998 figures], and [b] is much less costly than the non-resident, out-of-state rate.) Here are details:

Where courses are offered *only at one level* (either undergraduate or graduate) the level of the course, not the level of the certificate for which the course is required, determines the fee level and therefore the amount. Where

a course is offered *at both undergraduate and graduate levels*, the level of the certificate for which the course is required determines the level of the course, and *that* determines the fee level and therefore the amount.

Undergraduate Level Courses. The official fee for undergraduate courses is \$300 per course. However, successful course completion within the standard time frame generates a \$100 credit toward the \$300 fee for the next course (essentially making undergraduate fees become equivalent to \$67 per credit hour).

Upon completion of the requirements for a certificate, and if at least one full-fee Institute undergraduate course has been completed for this certificate, the earned certificate will be delivered accompanied by a completion award in the form of a check for \$100 (which may, if so desired, be applied to the fee for the first course of a further certificate).

Graduate Level Courses. The fee for graduate courses is \$450 per course. However, successful course completion within the standard time frame generates a \$150 credit toward the \$450 fee for the next course (essentially making graduate fees become equivalent to \$100 per credit hour).

Upon completion of the requirements for a certificate, and if at least one full-fee Institute graduate course has been completed for this certificate, the earned certificate will be delivered accompanied by a completion award in the form of a check for \$150 (which may, if so desired, be applied to the fee for another course).

Refunds

If a student does not finish a course and requests a refund, a refund will be provided. If requested within the first week of the course, 100% of the fee paid will be refunded. If requested in the second or third week of the course, 50% of the fee paid will be refunded. If requested later than the third week of the course, 10% of the fee paid will be refunded.

Faculty Stipend

For the time and effort needed to move a student successfully through a course, and regardless of the mode of course delivery (face-to-face, regular mail, or online interaction), the faculty member will receive 50% of the final fee paid for the course (generally amounting to \$100 per student for an undergraduate course, and \$150 per student for a graduate course). Where two or more faculty share responsibility for a student's course (possible with online courses) the faculty will share the stipend.

Student Files

TIBI faculty will regularly come into possession of materials that a student produces as part of her or his Institute training courses. Those materials are to be kept

until one year after the course or certificate, for which those materials were produced, has been completed. Then those materials are to be returned to the student by shipment to the student's last known address for disposition at his or her discretion. (The address *will* be current if the student has maintained TIBIA membership.)

Revisions

TIBI regularly reviews its *Policies and Procedures*, and makes improvements when possible. Revised versions carry a new "effective date" on the cover. The version with the latest effective date is the official current version.

Support for Visiting Scholars

General. The Institute supports visiting scholar programs. However, various circumstances worldwide have reduced the opportunities for such programs. At the same time, other circumstances have expanded opportunities in distance education and online learning. Thus, the Institute places far greater emphasis on distance education and online learning for its own courses to fill the need for behaviorological training opportunities. The Institute also supports the behaviorological distance education and online learning offerings of other higher education institutions (e.g., the online behaviorology courses offered by the State University of New York at Canton to China and other countries). Still, the Institute has policies and procedures for those rare occasions when it can participate in a visiting scholar program. These receive consideration in the rest of this section.

In some countries, behaviorological training opportunities are rare. Some professionals in those countries may seek to come to the USA to study behaviorology and so be able to bring its benefits back to their home countries, especially in the areas of education and child care. Some of these professionals may have full and adequate support, perhaps from their home universities or governments. Others may have only limited funds of their own. Some may be able to cover (a) travel to the training site in the USA as well as their return home when their studies are completed, (b) fees, and (c) living expenses (room and board) while studying. Others may only be able to cover some, or only one, of these costs.

Visiting scholars who can meet the costs of behaviorological training in the USA can be welcomed without special financial arrangements. Those visiting scholars with financial needs must document those needs. Then, the Institute may provide some support, for some of the costs for visiting scholars with financial needs, to study behaviorology in the USA. Such support would occur *only* when the Institute deems distance education and online learning opportunities to be inappropriate.

Even in those circumstances when visiting scholar support is deemed appropriate, the amount of funding

available for that support is finite. So, to enable that support to help as many needy students as possible, those who need to use this support must commit to asking for and using only what they really need so that others can benefit also. (For example, if they come into additional funds while receiving Institute support, they need to expend some of those funds in ways that reduce the support they receive from the Institute, thereby helping the Institute support others.)

All visiting scholars will be responsible for certain costs. They will need to cover their travel to the training site in the USA as well as their return home when their studies are completed. They also need to be prepared to cover different kinds of expenses. These include “personal items” (e.g., toiletries), “resource materials” (e.g., books), and “non-local travel” (e.g., sight seeing, especially if self-undertaken, although hosts will often expect visiting scholars to join family trips where their presence costs little extra). Those who can afford to cover fees and living expenses will need to cover these also.

Occasionally some visiting scholars (even those with university, government, or other grants) may be unable to afford *both* fees and living expenses. In this case, the Institute expects the visiting scholar to cover fees while the Institute arranges some or all room and board. (In this document “room and board” always includes local travel expenses.) Rarely, a visiting scholar with a solid commitment to study behaviorology will be unable to afford either fees or living expenses. In this case, the Institute may arrange room and board as well as grant a type of “waiver” of some or most of the fees. Then the visiting scholar would initially find a way to pay all the fees for the training, and the Institute would provide the granted waiver of the fees *by reimbursing to the visiting scholar the waived amount of the paid fees upon his or her return to her or his home country.*

Students with documented financial needs who can study the Institute’s online courses from their home country, rather than come to the USA to study, may also be eligible for a waiver of some fees. These would be applied immediately as a reduction in the amount the students pay for courses.

Restrictions. Some restrictions apply to the Institute’s support. Some restrictions concern the time frame for Institute support. Other restrictions concern the type and/or amount of Institute support. Regarding the time frame, Institute coverage of room and board is usually offered to individual visiting scholars for only one academic or calendar year. Regarding the type and/or amount of Institute support, each will receive detailed attention. (In order to respect some requests, or meet some needs, of some co-sponsoring institutions or organizations, some of these restrictions will not apply to some visiting scholars.)

The maximum amount of fees waived is 90% of full fees. (The minimum amount of fees waiver is 50% of full fees.) Whenever any fee is waived, fee credits and completion awards are not applicable.

All “room and board” support expenditures that the Institute incurs for a visiting scholar are only a temporary form of support provided while the visiting scholar is in the USA studying behaviorology. That support only becomes permanent when the visiting scholar returns home when finished studying behaviorology in the USA. If the visiting scholar does not then return, all support expenditures become immediately due and must be paid.

(If a supported visiting scholar fails to make progress on plans of study at a reasonable approximation of the agreed upon rate, then the Institute may withdraw its support. That scholar would then have to reimburse the Institute for previously provided support while also arranging for room and board until returning home. This policy would not apply to difficulties due to illness, etc.)

Application & Acceptance. To apply to the Institute as a visiting scholar to enroll in TIBI courses and work towards TIBI certificates (and receive TIBI support if needed), applicants are to write to the Institute. In their letter, applicants will specify (a) the extent of the behaviorological education and training they hope to receive from the Institute (i.e., the certificate levels that are their initial and ultimate goals), and (b) how they hope to apply behaviorology after completing their formal behaviorological education (i.e., their application goals). Their letter should also describe, with separate documentation, any support needs they have as well as their prior contact, if any, with courses and degree programs having behaviorological content. (Documentation should include available transcripts, course descriptions and syllabi, products completed during the coursework, and a complete and up-to-date vita.)

Based on that information, the Institute will inform each applicant about the certificate she or he should initially work toward, which course should be his or her first course, how to begin that first course, what support is possible (if any is needed), and the time period during which support will be provided.

If the applicant agrees to this, the Institute will begin organizing arrangements for any needed support, and for the start of coursework. Applicants document their agreement through a signed statement: Applicants will receive a copy of the TIBI *Policies and Procedures*, and will be asked to sign a statement, after reading this document, indicating that they have read that document and agree to abide by its contents as students of the Institute. By signing and returning this statement applicants also indicate acceptance of the Institute’s curricular arrangements as well as any support arrangements.

Requirements & Recommendations for Visiting Scholars

Requirements. Visiting scholars studying behaviorology, especially those receiving Institute support, are expected to abide by a few requirements. These concern necessary activities as well as activities they should avoid. (Again, in order to respect some requests, or meet some needs, of some co-sponsoring institutions or organizations, some of these requirements will not apply to some visiting scholars.)

Visiting scholars are in the USA to learn, and so they are expected to earn at least the PSBC during a stay of one academic year. (If they have already completed the BLC before coming to the USA, then a calendar year of full time study should be enough time to earn the MLBC.)

On the other hand, visiting scholars are not in the USA to engage in extensive activities that detract from their ability to study, learn, and earn the repertoire and certificates that will help fulfill their stated goals upon their return home. For example, they are not in the USA to learn to drive, or to work to make money, or to search for and try to arrange educational programs elsewhere. (However, the Institute will not interfere with those who wish—and who are permitted by their visa and their home university and government—to stay for longer than one year to engage in more behaviorology study at another institution, after they have fulfilled their Institute commitments).

Should a TIBI-supported visiting scholar (i.e., one receiving any fee waiver or being helped with room and board) earn money from work in the USA during the year with the Institute, the scholar agrees to apply 50% of the paycheck funds for that work to reimburse the Institute up to the total amount of provided support so that those support funds will be available for others who are less fortunate. (This applies also to money earned for work done for co-sponsoring institutions, such as teaching done to earn the support funds provided by the university that writes the scholar's visa application so that the scholar will be a visiting scholar *at that university* also while studying behaviorology with the Institute. This is because co-sponsoring institutions sponsor visa applications with full knowledge of, and agreement with, the scholar's initial purpose in coming to the USA, which is to study behaviorology.) Actually, the Institute would prefer that, rather than working for money (except for work required by other supporting institutions), visiting scholars concentrate on applying themselves to their studies and so make the best use of this opportunity so that they can be as effective as possible upon their return home.

Why Requirements? These requirements are made partly to help visiting scholars make the best of this training opportunity. These requirements are also made partly in exchange for the savings the Institute makes possible

for a visiting scholar when compared with the costs the scholar would incur trying to get a “degree” at an existing university in the USA. (Remember that the Institute provides *certificates* for completed training to recognize the expansion of any student's repertoire, visiting-scholar or not. The Institute does not grant “degrees,” as it is not chartered to do so.)

The savings the Institute provides for the visiting scholar can be considered this way: The typical cost of tuition for a non-resident to take one graduate class at a state university (like SUNY [using 1998 figures]) would be about \$1,000 (\$15,000 for 15 classes); meanwhile, 15 graduate courses at *full* fees with the Institute costs about \$4,500. This is a savings of over \$10,000 even if no fee waiver is involved (with more saved if the Institute covers some living expenses; even more is saved if a fee waiver results in a fee reimbursement upon returning home). The Institutes operates this way because (a) it is fully committed to its purpose, and (b) it expects a full commitment-to-study on the part of its visiting-scholar students. The Institute's purpose is to increase the contributions of behaviorology to human culture. This purpose is served, in part, by providing those financial savings as well as the intellectual rigor for students to build their behaviorological repertoires so that they can help behaviorology contribute in their home countries.

Recommendations. While not required, experience suggests that the Institute make certain recommendations, some to hosts and some to visiting scholars. For example, many visiting scholars have family back at home. Quite understandably, everyone misses each other. (TIBI faculty hosts who have travelled abroad have also experienced this feeling—first hand.) Hosts will recommend different actions to be taken to help with these feelings. One action involves the visiting scholar calling home regularly and frequently, in addition to letter writing. Another involves the visiting scholar purchasing and sending small but special gifts back home *regularly* and by *airmail* (so that the gifts arrive in a timely manner). Through these calls and gifts, the family at home becomes a part of, has a stake in, and shares the benefits of the visiting scholar's cross-cultural experience. Thus they will find it easier to live with the scholar's extended absence from home, which makes studying easier... (For such benefits, the cost is *not* significant!)

Hosts may also wish to introduce visiting scholars to others locally who are from the same country, as their experience may help the visiting scholar adapt to local conditions. However, problems may be avoided if the local others have read at least this section (“Requirements & Recommendations for Visiting Scholars”) of these *Policies and Procedures*.

Visiting Scholar Application Process & Form:

Since at this time the Institute only has available English speaking faculty in the USA, all training there is done in English. Therefore, (a) all applicants must be able to read, write, and speak English *fluently*, and (b) the instructions for applying to the Institute must be carried out *by the applicant herself or himself in fluent English*.

Use this form to apply to the Institute to enroll in TIBI courses, work towards TIBI certificates (and receive TIBI support if needed). Follow these four instructions:

(1) Copy this form; read it, fill it out, and sign it.

(2) Write, and attach to this completed form, a letter to the Institute. In the letter (a) describe any previous contact you have had with talks, lectures, courses, or programs having behaviorological content, (b) specify the extent of the behaviorological education and training you hope to receive from the Institute (i.e., the certificate levels that are your initial and ultimate goals), (c) state how you hope to apply behaviorology after completing your formal behaviorological education (i.e., your application goals), and (d) describe, with full documentation, what support *resources* you do have and what support *needs* you might have.

(3) To this form and the letter, attach documentation that includes copies of any and all of the following that are available: (a) for all of your previous higher education work: transcripts; (b) for any/all previous behaviorology-related coursework: course descriptions, syllabi, and, if available, course products completed; (c) a complete and up-to-date vita that also contains all relevant personal information (including name, address, date of birth, place of birth, place of work, job description, passport number and expiration date, etc.); and (d) authorized statements about the amount of personal, grant, and other financial support available to you from your home country to use to study behaviorology in the USA.

(4) Send all application materials to the Institute.

What Happens Next? The Institute will evaluate each complete application that it receives. Each applicant will then be informed about (a) whether or not the Institute can accept the applicant as a student, (b) when the student's term of study in the USA can begin and end (taking into account when a host is available if one is needed), (c) what courses the student can do (and how she or he can do them) prior to coming to the USA, and (d) what type and amount of support, if needed, the institute and/or others can provide. When the Institute and the accepted applicant are in agreement about what, when, and where to study, and any support considerations, then the Institute will begin arranging for any needed support and the start of coursework. You will be kept informed and are expected to keep the Institute informed, especially of any changes in your status or circumstances that could affect any study or support plans. ❁

Statement for Signature:

As part of your application and this form, you are making and signing these statements:

“Having read the *Policies and Procedures* and this form myself, and having written and attached the necessary letter to this form myself, and having gathered all the available, helpful, and necessary documents and attached them to this form myself, I now complete my application by making this and the following statement and affixing my name and signature to this form and statements to attest (a) that the attached letter and documents represent the truth to the best of my knowledge, (b) that my English skills are fluent enough by the Institute's standards for me to succeed in studying behaviorology, and (c) that the words in the statements I now make and sign are also my own words:

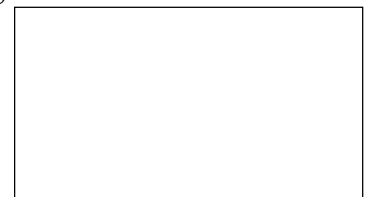
“My signature on this page indicates that I,

[print full name:] _____,
(a) hereby make application to study behaviorology with *The International Behaviorology Institute*, (b) have received and thoroughly read a copy of the TIBI *Policies and Procedures*, (c) consent and agree to abide by the spirit and contents of those *Policies and Procedures* as a student of the Institute, and (d) am prepared to accept the Institute's decisions regarding curriculum and any support;”

Signed in English: _____

& in my native language: _____

& with my seal (if I have one) in this box:



on this date: _____.

[This space, & other side, for Institute use only; do not use.]

Primary Course Descriptions

The descriptions of courses required for the Institute's primary certificates come from pages 181-185 of the book *Origins and Components of Behaviorology—Second Edition* (2002; Canton, NY: ABCs). Those descriptions included logical prerequisites as well as an asterisk (*) after the numbers for courses that were explicitly specified for the BLBC (with the exception that either BEHG 495 or BEHG 496 fills the same explicit requirement). (Course offerings are subject to faculty availability.) While additional courses are also offered (with their descriptions available online), here are the descriptions of the courses for the primary certificates, with any TIBI-adopted changes, and including a range of potential elective courses:

BEHG 101*: Introduction to Behaviorology I. *Introduction to Behaviorology* is a two-course sequence, for both majors and non-majors, on the science of the variables controlling the behavior of humans and other animals. This first course of that sequence introduces the student to the range of components that comprise the discipline of behaviorology including (a) its philosophy of science and selection paradigm, and (b) its experimental methods, theory, and technology. The philosophy and paradigm include the criteria for natural science, the fallacy of inner causes, the significance of control and selection, the status of private events, and the behavior of the scientist. Methods include basic single-subject designs and measurement. Theory includes the fundamental natural laws describing the antecedent and postcedent relations between behavior and its controlling variables; these include such basic principles as added and subtracted reinforcement and punishment, extinction, simple schedules, stimulus control, and establishing operations. Technology includes the basic practices used to apply behaviorological principles to change accessible variables so as to change and especially to expand behavior repertoires through behavioral engineering. Basic techniques include differential reinforcement, shaping, fading, chaining, modeling and imitation, and time out. Other topics include superstitious behavior, emotion, escape and avoidance, and deprivation and satiation. The course includes a laboratory component on the basic principles and methods.

BEHG 102*: Introduction to Behaviorology II. *Introduction to Behaviorology* is a two-course sequence for both majors and non-majors. This second course of that sequence begins by introducing the student to the basic application of behaviorological principles and techniques to the prevention and solution of mild to moderate (non-incapacitating) behavior problems in the most common settings (e.g., child rearing, education, business and industry and organization management). The course

includes a laboratory component on applied behaviorology research and methods, starting with the student changing his or her own behavior. The course also introduces analyses of complex behaviors and the variables of which they are a function, such as event-shaped and verbally-mediated behaviors, social behavior, verbal behavior, stimulus equivalence relations, multi-term contingencies, personal control, group control, cultural design, and various controlling agencies (such as in economics, education, government, law, religion). The course also includes analyses of (a) the preference for design rather than accident or chance in the control of both individual behavior and, especially, cultural practices, and (b) the relevance of science to ethics and morality. (Pre: BEHG 101.)

BEHG 201*: The Behaviorology of Child-Rearing Practices. This course covers, in two parts, the science and technology of behaviorology applied to the child-care repertoires of parents. The first part covers some methods applicable throughout pre-adult years which encourage the *prevention* of the common behavior problems of these years. Some common problems that can be avoided are associated with bedtime, eating, dressing, shopping, and automobile travel. Some methods to prevent these problems include "catch 'em being good," let kids help, monitor kids, orderly routines, time out, and other forms of discipline. The second part covers some methods applicable to helping distraught parents change problem behaviors that have occurred (i.e., "cure" techniques, rather than prevention techniques). Other topics include toilet training, language, intelligence, creativity, achievement, reading, Aircribs, and morality. (Pre or Co: BEHG 102.)

BEHG 320*: History and Philosophy of Behaviorology. This course is an in-depth treatment both of the history of the emergence of behaviorology as a discipline and of the philosophy of science of this discipline, tracing the development of the philosophy since the early twentieth century, 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. (Pre or Co: BEHG 102.)

BEHG 325*: Behaviorology and Culture. This course is a probe of the relevance of behaviorology to cultures and their survival and improvement (a) by examining such previously progressive concepts as freedom and dignity and the current effect of these on the development of more effective cultural practices, and (b) by examining a range of scientifically based and improved cultural practices working in concert and producing a better world as represented in the behavioral "utopian" literature. (Pre: BEHG 102.)

BEHG 326*: Readings in Behaviorology: Skinner's Later Writings. This course (continuing the content of BEHG 325) includes coverage of the implications, relevant to the present and future of behavior science and its professionals, the culture, and the world at large, that are inherent in the later writings of B.F. Skinner (i.e., *Reflections on Behaviorism and Society* [1978] and later works). (Pre: BEHG 325.)

BEHG 335: Survey of Behaviorology Applications. This course surveys the application of behaviorological principles and techniques to therapy and clinical behaviorology with respect to the common and uncommon solutions for moderate to severe (incapacitating) abnormal behavior problems in common and uncommon settings. The course includes the measurement and classification of the behaviors it surveys. The course also includes lab/fieldwork in measurement and applied methods and research. (Pre: BEHG 201.)

BEHG 340*: Behaviorology in Education. This course is an examination of the interaction between instructional design and human behavior in educational settings from two vantage points: (a) the theoretical, historical, and philosophical aspects of the facts of teaching and learning, including the reasons for effective and non-effective methods, the role of technology in teaching, and the teaching of thinking, motivation, creativity, and discipline, and (b) the practical aspects of the teaching effort, including teaching as the management of the learning environment, the measurement and evaluation of behavior change, the educational techniques of behavior change, and the expansion of the learner's behavior repertoire as a function of teaching. The course includes a laboratory component in which the student prepares and tests teaching materials, designs a course, and addresses the issues of systematic mastery, fluency, and cybernetics in instructional design. (Pre: ABC.)

BEHG 345*: Experimental Behaviorology: A Survey. This course surveys complex behavior-environment relationships including stimulus equivalence classes and complex schedules of reinforcement, as well as other complex antecedent and postcedent factors of which behavior is a function. The course includes a laboratory component on the complex relationships surveyed. (Pre: ABC.)

BEHG 350/450: Behaviorology Research Lab: General. In this course the student will assist in the ongoing work of two to four current research experiments, in two or more different laboratories or under two or more different project researchers in the same laboratory. For each of the two or more projects, the student will become familiar with the background experiments and issues of the project, the current work of the project, and some of the potential directions of the project. (Pre: BEHG 345.)

BEHG 355*: Verbal Behavior I. This course is an introduction to B.F. Skinner's scientific approach to consid-

ering language as verbal behavior (vB), including coverage of multiple control and the elementary relationships between the controlling environment and verbal behavior, plus investigation of the development and applications of this approach from its appearance, through evaluative and technological research reported in the literature, to the present. The course includes not only an introduction to the book *Verbal Behavior* (Skinner, 1957) but also reviews of the book (the book itself being more thoroughly covered in a more advanced course). The course includes a laboratory component on vB research. (Pre: ABC.)

BEHG 360/460: Non-Humans and Verbal Behavior. This course covers the research, controversy, and further developments in the non-human language field, emphasizing the work with sign language and primates as well as the implications of this research to understanding human verbal behavior. (Pre: BEHG 355.)

BEHG 365*: Advanced Behaviorology I. This course is a theoretical analysis of phylogenic and ontogenic contingencies. Topics related to this analysis include the design of cultures and the environments that produce the designs, the question of purpose in light of the experimental analysis of behavior, the concern with problem solving behavior and the related issues of event-shaped and verbally mediated behavior, the critique of theories alternative to this analysis, the question of whether or not "theories" of learning are necessary, and the problem of freedom and control as it relates to the control of human beings. (Pre: ABC.)

BEHG 370/470: Advanced Behaviorology II. In this course the student will learn to evaluate criticisms of behaviorological science. The course includes review of critical commentary, and response to that commentary, such as is available in the "Canonical Papers of B.F. Skinner" issue of *The Behavioral and Brain Sciences* (7, 4, 1984) and/or other similar sources. (Pre: BEHG 365.)

BEHG 375/475: Verbal Behavior II. This course provides comprehensive coverage of all aspects of verbal behavior (vB) as presented in the original work on this topic (i.e., the book, *Verbal Behavior*, by B.F. Skinner, 1957) and in more recent literature updates. The course includes a laboratory component on vB research. (Pre: BEHG 355.)

BEHG 380/480: Human Development. This course is an analysis of the phylogenic and ontogenic contingencies operating in the subject matter of the field of human development. (Pre: BEHG 355.)

BEHG 385*: Behavior Technology: A Survey. This course provides training in two major repertoires that are needed for effectiveness in the work of behavioral engineering: (a) training *about* the techniques stemming from the laws of behavior that are used to generate, maintain, increase, and decrease behavior in applied settings,

and (b) training *in the actual use*, or application, of these techniques as reported in the research literature. The course includes a lab/fieldwork component in course-related applied research. (Pre: BEHG 345.)

BEHG 390/490: Behavior Technology Fieldwork: General Experience. In this course the student will assist in ongoing behaviorological engineering work at two to four different field settings such as clinics, schools, and other institutions. Data gathering and paper presentation will be included. (Pre: BEHG 385.)

BEHG 395*: The Teaching of Behaviorology. This course introduces the student to the application of scientific teaching methods (e.g., self-paced, systematic mastery and fluency designs, precision teaching, and instructional designs that are cybernetic) while the student practices these methods by assisting comprehensively in the teaching of another behaviorology course (such as BEHG 101 and BEHG 102). May be repeated for credit. (Pre: BEHG 340 plus the course in which the student is to assist.)

BEHG 440: Seminar: A Survey of the Contributions of Behaviorology. This course is a seminar on selected materials from relevant sources elaborating on the actual and potential contributions of behaviorology to a wide variety of applied behavioral fields and other disciplines. (Pre: ABC.)

BEHG 465: Seminar: Current Issues in Behaviorology. This course considers the major current issues in behaviorology as represented in current and recent issues of the discipline's journals, and in recent books in the discipline. (Pre: ABC.)

BEHG 485: Directed Reading in Behaviorology. This course provides directed reading on discipline-related topics or sources not comprehensively covered in other courses. (Pre: ABC.)

BEHG 495*: Personal Project or Paper. This course is a project (with a report), or a paper (with the goal of publication), relating behaviorology to (and/or improving, with a behaviorological perspective) the popular cultural view of a topic selected by the student and the faculty member in consultation. (Pre: BEHG 355 plus others that are program specific.)

BEHG 496*: Professional Paper. This course is a library and/or field research paper, with the goal of publication, relating behaviorology to the student's preferred applied behavioral field, including the importance, relevance, and contributions of behaviorology to the selected area. (Pre: BEHG 355 plus others that are program specific.)

A Selection of Additional Courses

Several additional behaviorology courses are probably more valuable to the advanced student, according to his or her specific career focus. So these courses are more likely to be found in graduate programs. Here, however,

course numbers reflect both undergraduate and graduate status in order to show the relation of such courses to the courses already described. The amount of course credit earned will range from one to three, depending on variables inherent in the subjects actually covered. Here is a sample of such courses:

BEHG 346/446, 347/447, 348/448, 349/449: The Experimental Analysis of [a Selected Topic]. This course is an examination of the background experiments and issues of [the topic], the current work on [the topic], and some of the potential directions of research on [the topic]. (Pre: BEHG 345.)

BEHG 351/451, 352/452, 353/453, 354/454: Behaviorology Research Lab on [a Selected Topic]. In this course the student will assist in ongoing experimental research on [the topic], including the preparation of reports for publication. (Pre: BEHG 350/450 and the course on The Experimental Analysis of [the same Topic].)

BEHG 386/486, 387/487, 388/488, 389/489: Behavior Technology in [a Selected Setting]. This course is an examination of the concerns and issues relevant to technological applications in [the selected setting] and of the prevalent techniques (and their supporting research) that are used in [the selected setting]. (Pre: BEHG 385.)

BEHG 391/491, 392/492, 393/493, 394/494: Behavior Technology Fieldwork in [a Selected Setting]. In this course the student will assist in ongoing behaviorological engineering work in [the selected setting]. Data gathering and paper presentation will be included. (Pre: BEHG 390/490 and the course on Behavior Technology in [the same Setting].)

BEHG 430, 431, 432, ..., 439: Seminar on Behaviorology and [a Selected Topic]. This course provides a seminar on [the selected topic] in behaviorology. (Pre: ABC.) [These would be topics not covered in depth in another course. Examples of potential topics include ethics or epistemology.]

BEHG 441, 442, ..., 449: Seminar: The Contributions of Behaviorology in [a Selected Area]. This course provides a seminar on the contributions, both actual and potential, of behaviorology to [the selected area]. (Pre: BEHG 440.) [The selected area would be one that is not already covered in depth in another offered course. Such areas could involve the impact of behaviorology specifically in a particular human service, human development, or other applied behavioral field.]

Note: For the standard sequences of experimental and applied courses, see Appendix 3 of the book: Ledoux, S.F. (2002). *Origins and Components of Behaviorology—Second Edition*. Canton, NY: ABCs (ISBN: 1-882508-08-4).

Curricula Brochure Panels

(Rearranged on next pages) ↻

Some of the panels of the 5/02 iteration of the curriculum brochure were used in this issue of the newsletter (BgTyV5#2) in place of this page

The rest of the panels of the 5/02 iteration of the curriculum brochure were used in this issue of the newsletter (BgTyV5#2) in place of this page

Minutes of the May 2002 Meeting of the TIBI Board of Directors

Within the parameters of the organization's by-laws, the TIBI Board of Directors held a set of online meetings on 20-21 May 2002, as the TIBI annual meeting. All five board members were present.

The action items (which the members discussed by email and phone for several weeks before the meeting as well as during the meeting) concerned (a) web site management, tools, and costs, and (b) membership levels. While members made, seconded, and voted on formal motions because doing so better supported using the online venue, each action was still taken by consensus and was unanimous, and each will be described in turn.

Web site. The web site uses a portal that has led to two BlackBoard (BB.COM) "courses," one for the "Behaviorology Community" with our archives and free educational course offerings, and the other for our for-credit (and thus for tuition-like fees) educational course offerings that can earn TIBI certificates. The portal was not a concern. The question involved whether or not we still needed, and wished to fund, two BlackBoard "courses" since the associated costs were about to triple.

A motion was made to renew only one BlackBoard "course" and to use it for both previous purposes by porting both previous "courses" into this one "course," and to manage this one "course" using more of the management tools offered by BB.COM as appropriate.

Membership levels. With the growing availability of web-based behaviorology resources, and the ability of the world-wide-web (www) to interest more people in accessing these resources, the Board was concerned that a gap might exist in our membership levels. Consequently, this two-part motion was made and passed [The merely informational material, most of which is provided elsewhere in this issue, was removed first.—Ed.]:

Whereas the value of added membership levels has been well-covered in the last month's emails, and whereas additional membership levels need to dovetail with our established levels and their benefits [For context, our established membership levels and their dues and benefits are published in this and every issue of *Behaviorology Today*.—Ed.], this motion has two-parts:

(Part A) That the following new membership and donor levels and benefits become TIBI policy, being added to our Policies and Procedures, and being published and publicized in *Behaviorology Today* and on our web site (see Part B):

Free-online membership (through which a visitor may elect to register online as a free member, much as is the case now). Benefits: (a) Access to previews (like the descriptions here in this motion) of the benefits of other membership levels, and (b) access—such as through BlackBoard's public *preview* options—to selected articles, links, and issues of Features (i.e., those articles, links, and Features issues that are of more general interest).

\$5 (to \$19) *Basic-online membership*. Benefits: All above plus these: Access to *all* Features issues, *all* links, and *all* *Behaviorology Today* articles online. (This is the only *new* membership level.)

\$20 (to \$39) *Subscription membership*. Benefits: All above plus this: A subscription to the paper-printed issues of *Behaviorology Today*. (This actually is already our subscription price.)

Contribution amounts beyond those first three levels are Donor levels and are listed after the remaining membership levels. All memberships are per year. For comparison of continuity, here is the place of our established membership levels and their basic benefits:

\$20 *Behaviorology Student membership* (requires paper membership application co-signed by advisor or department chair). Benefits: All above plus these: Access to organizational activities (e.g., invitations to attend or participate [as appropriate] in conferences, conventions, workshops, etc.).

\$40 *Affiliate membership* (requires paper membership application). Benefits: All above plus these: Access to advanced levels for those acquiring the additional qualifications that come from pursuing a professional behaviorology track.

\$60 *Associate membership* (requires paper membership application, and is only available to qualifying individuals). Benefits: All above, plus voting rights.

\$80 *Advocate membership* (requires paper membership application, and is only available to qualifying individuals). Benefits: All above plus may be elected office holder.

Intermediate summary: Thus our member levels would be these:

- ✦ Free online member (free);
- ✦ Basic online member (\$5...)—the only new level;
- ✦ Subscription member (\$20...);
- ✦ Student (of behaviorology) member (\$20...);
- ✦ Affiliate member (\$40...);
- ✦ Associate member (\$60...)—voting;
- ✦ Advocate member (\$80...)—voting/office holder.

Donors: Benefits, Amounts, and Titles:

Benefits: All donors (a) receive the benefits of the Affiliate member level, and (b) have their name listed, if they wish, under their donor title in one issue of *Behaviorology Today* per year.

Per Year Donors (Note: Those who donate \$40 to \$49 still fall in the Affiliate membership category.):

\$50 (to \$99): Donor

\$100 (to \$249): Supporter

\$250 (to \$499): Patron

\$500 (to \$999): Sponsor

\$1,000 (to \$1,999): [awaiting a title]

Lifetime Donors:

\$2,000 (to \$4,999): Lifetime Donor

\$5,000 (to \$9,999): Lifetime Supporter

\$10,000 (to \$19,999): Lifetime Patron

\$20,000 (to \$49,999): Lifetime Sponsor

\$50,000 or more: Lifetime [awaiting a title]

(Part B) That our old member and donor levels and benefits, and any that are newly adopted via Part A of this motion, be made public as part of an officially Board approved campaign to encourage the public to visit our web site and assume membership *after* the site is overhauled, in a manner to be first approved by the Board, to include current and new contents and support mechanisms (e.g., privacy notice, credit card payments, automatic access to benefits, and a visitor counter that shows the date from which the count began) in user friendly ways.

Standard procedure for minutes of meetings of the Board of Directors. The chair drafts the minutes and provides them to the other Board members who verify them, indicating additions and corrections. The chair then incorporates the changes and publishes the minutes in the corporate records and magazine/newsletter. These procedures have been followed with the current minutes. (Added at the end of the corporate-records copy is the dated signature of a TIBI officer.) ❧



Editor's Note

This is a restatement of David Feeney's original announcement about TIBI's web site, "behaviorology.anywhere":

The International Behaviorology Institute invites everyone to stop by our new www portal and community. You can find these at "behaviorology.anywhere":

❧ www.behaviorology.org

❧ www.behaviorology.com

❧ www.behaviorology.net

The TIBI web portal gives the public access to articles and contact information as well as clickable entry into "Behaviorology Community," an online meeting and teaching and learning place open to visitors and TIBI members.

You will want to visit the site regularly: Issues of *Behaviorology Today* will be available online. And all of TIBI's educational courses will also be offered through the site (fee free for those who do not need course credit but still want the knowledge).

So, everyone go to behaviorology.anywhere and get your membership in the Behaviorology Community! ❧

Always More at behaviorology.org

Be sure to visit TIBI's ever-expanding web site regularly (www.behaviorology.org). Material is always being added and updated. After entering (as a visitor or as a member) you will be in the "Course Announcements" area, with several navigation buttons that are *always* to the left of the screen. Use these buttons to get where you want to go.

Several types of material from the magazine are available. If you click on the "Course Information" button and then on the "Current Institute Info Docs" folder, you will find the most up-to-date Institute information documents. If you click on the "Course Information" button and then on the "Selected ... Articles" folder, you will find a selection of useful newsletter/magazine articles. If you click on the "Course Information" button and then on the "... Archives" folder, you will find the complete periodical archives.

Two other information areas receive regular additions. If you click on the "Course Information" button and then on the "TIBI Certificate Programs and Courses" folder, you will find the Institute's educational offerings. If you click on the "External Links" button, you can access all the "Features" articles and links.

The other navigation buttons also lead to interesting materials. Be sure to try them as well. Also be sure to provide feedback on you site-visit experience. Your input is needed and welcome. ❧

Subscriptions and Back Issues

People can receive copies of *Behaviorology Today* in ways other than as a member. People can subscribe without membership for US\$20, and people can obtain back issues for US\$10 each. Photocopy, fill out, and send in the “membership” form on the next page. As applicable, check the “subscription” box, and/or list which back issues you are ordering. *Contributions* are also welcome, and are tax-deductible as TIBI is non-profit (under 501-C-3). ☺

TIBIA Membership Benefits

Beyond the intrinsic value that TIBIA membership bestows by virtue of making the member a contributing part of an organization helping to extend and disseminate the findings and applications of the natural science of behavior for the benefit of humanity, and beyond the benefit of receiving the organization’s publications, TIBIA membership benefits include the following:

- ✦ Members will have opportunities to present papers, posters, and demonstrations, etc., at the organization’s meetings;
- ✦ Members who first join TIBIA in the last third of the calendar year will be considered as members through the end of the following calendar year;
- ✦ Members who first join TIBIA in the middle third of the calendar year will be allowed to pay one-half the regular dues for the following calendar year;
- ✦ A TIBIA member may request the Institute to evaluate his or her credentials to ascertain which TIBI certificate level most accurately reflects the work (and so, by implication, the repertoire) behind those credentials. The Institute will then grant that certificate to the member; as part of this evaluation, the Institute will also describe what work needs to be accomplished to reach the next certificate level. The normal processing fee for this service (US\$20) will be waived for members. For the processing fee of US\$20, a non-member may also request this evaluation and, should she or he ever join TIBIA, the US\$20 already paid will be applied to the initial membership dues owed. (Faculty teaching behaviorology courses can encourage their students to request this evaluation.)

TIBIA continuously considers additional membership benefits. Future iterations of this column will report all new benefits upon their approval. ☺

TIBIA Membership Criteria and Costs

TIBIA has four categories of membership, of which two are non-voting and two are voting. The two non-voting categories are Student and Affiliate. The two voting categories are Associate and Advocate. All new members are admitted provisionally to TIBIA at the appropriate membership level. Advocate members consider each provisional member and then vote on whether to elect each provisional member to the full status of her or his membership level or to accept the provisional member at a different membership level.

Admission to TIBIA in the Student membership category shall remain open to all persons who are undergraduate or graduate students who have not yet attained a doctoral level degree in behaviorology or in an acceptably appropriate area.

Admission to TIBIA in the Affiliate membership category shall remain open to all persons who wish to maintain contact with the organization, receive its publications, and go to its meetings, but who are not students and who may not have attained any graduate degree in behaviorology or in an acceptably appropriate area. On the basis of having earned TIBI Certificates, Affiliate members may nominate themselves, or may be invited by the TIBI Board of Directors or Faculty, to apply for an Associate membership.

Admission to TIBIA in the Associate membership category shall remain open to all persons who are not students, who document a behaviorological repertoire at or above the masters level or who have attained at least a masters level degree in behaviorology or in an acceptably appropriate area, and who maintain the good record—typical of “early-career” professionals—of professional accomplishments of a behaviorological nature that support the integrity of the organized, independent discipline of behaviorology including its organizational manifestations such as TIBI and TIBIA. On the basis either of documenting a behaviorological repertoire at the doctoral level or of completing a doctoral level degree in behaviorology or in an acceptably appropriate area, an Associate member may apply for membership as an Advocate.

Admission to TIBIA in the Advocate membership category shall remain open to all persons who are not students, who document a behaviorological repertoire at the doctoral level or who have attained a doctoral level degree in behaviorology or in an acceptably appropriate area, who maintain a good record of professional accomplishments of a behaviorological nature, and who demonstrate a significant history—typical of experienced professionals—of work supporting the integrity of the organized, independent discipline of behaviorology including its organizational manifestations such as TIBI and TIBIA.

For all membership levels, prospective members need to complete the membership application form and pay the appropriate dues.

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

Other Category	Dues (in US dollars —\$20 minimum)
Board of Directors member	The lesser of 0.6% of annual income, or \$120.00
Faculty member	The lesser of 0.5% of annual income, or \$100.00

Membership Category	Dues (in US dollars —\$10 minimum)
Advocate member	The lesser of 0.4% of annual income, or \$80.00
Associate member	The lesser of 0.3% of annual income, or \$60.00
Affiliate member	The lesser of 0.2% of annual income, or \$40.00
Student member	The lesser of 0.1% of annual income, or \$20.00

TIBIA MEMBERSHIP APPLICATION FORM

(SEE THE NEXT PAGE FOR THE TIBI / TIBIA PURPOSES.)

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

Dr. Stephen Ledoux
TIBIA Treasurer
SUNY-CTC
34 Cornell Drive
Canton NY 13617 USA

Check if applies:

- Contribution:
- Subscription:*
- Back issues:*
- ✻ Vol. __, # __
- ✻ Vol. __, # __

Name: _____

Member Category: _____

Office Address: _____

Amount enclosed: us\$ _____

Home Address: _____

Office Phone #: _____

Home Phone #: _____

FAX #: _____

CHECK PREFERRED MAILING ADDRESS:

E-mail: _____

Office: Home:

Degree/Institution:** _____

Sign & Date: _____

*Subscriptions: us\$20/year; back issues: us\$10 each.

**For Student Membership:

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

Name & Signature of Advisor or Dept. Chair: _____

TIBI / TIBIA Purposes*

TIBI, 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 a professional organization also dedicated to expanding the behaviorological literature at least through the magazine/newsletter *Behaviorology Today* (originally called *TIBI News Time*) and the *Behaviorology and Radical Behaviorism* journal;** 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 their shared purposes. These activities include (a) encouraging and assisting members to host visiting scholars who are studying behaviorology; (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 separate, independent 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 are:

- A. to foster the philosophy of science known as radical behaviorism;
- B. to nurture experimental and applied research analyzing the effects of physical, biological, behavioral, and cultural variables on the behavior of organisms, with selection by consequences being an important causal mode relating these variables at the different levels of organization in the life sciences;
- C. to extend technological application of behaviorological research results to areas of human concern;
- D. to interpret, consistent with scientific foundations, complex behavioral relations;

- E. to support methodologies relevant to the scientific analysis, interpretation, and change of both behavior and its relations with other events;
- F. to sustain scientific study in diverse specialized areas of behaviorological phenomena;
- G. to integrate the concepts, data, and technologies of the discipline's various sub-fields;
- H. to develop a verbal community of behaviorologists;
- I. to assist programs and departments of behaviorology to teach the philosophical foundations, scientific analyses and methodologies, and technological extensions of the discipline;
- J. to promote a scientific "Behavior Literacy" graduation requirement of appropriate content and depth at all levels of educational institutions from kindergarten through university;
- K. to encourage the full use of behaviorology as the essential scientific foundation for behavior related work within all fields of human affairs;
- L. to cooperate on mutually important concerns with other humanistic and scientific disciplines and technological fields where their members pursue interests overlapping those of behaviorologists; and
- M. to communicate to the general public the importance of the behaviorological perspective for the development, well-being, and survival of humankind.☺☻

Periodical Information

Behaviorology Today [known as *TIBI News Time* for the first 4 volumes / 8 issues], is the magazine/newsletter of The International Behaviorology Institute, a non-profit educational corporation, and is published in the spring and fall each year.

TIBI can be contacted through:

9 Farmer Street • Canton NY 13617-1120 • USA
 Phone • Fax: (315) 386-2684 • 386-7961
 Web Site: www.behaviorology.org

To submit items for publication, contact the editor. Send items on a 3.5 inch Mac-formatted disk, in a program that can be placed in PageMaker, along with a hard copy, to the editor:

Stephen F. Ledoux, Editor
 SUNY-CTC • Arts and Sciences • Cornell Drive
 Canton NY 13617-1096 • USA
 Phone • Fax: (315) 386-7423 • 386-7961
 E-mail: ledoux@canton.edu

Authors' views need not coincide with official positions of TIBI. (Authors retain copyrights.)

*This statement of the TIBI / TIBIA purposes has been adapted from the TIBI by-laws.

**This journal (BARB) is under development at this time and will appear only when its implementation can be fully and properly supported.—Ed.