



Journal of Behaviorology

ISSN 2331-0774

A journal of TIBI: The International Behaviorology Institute

Behaviorology

Conductologia

Xingwei Xue

Gedragologie

Behaviourology

CONTENTS

NOTE: Prior to Volume 16, Number 1 (Spring 2013) the *Journal of Behaviorology* went by the name of *Behaviorology Today*, which occasionally published fully peer-reviewed articles, explicitly so labeled. Beginning with Volume 15, Number 1, in January 2012, *all* material receives full peer review. See the "Submission Guidelines" for details.

<i>Editorial</i>	2
<i>TIBI By-Laws</i> [Updated; last printed in 2005 in <i>Behaviorology Today</i>]	3
Visit www.behaviorology.org / Journal & Web Site Copyrights	9
<i>Submission Guidelines</i>	10
<i>Science and Life</i> LAWRENCE FRALEY	11
<i>Editorial Review Board & Guest Reviewers</i>	23
<i>Syllabus Directory*</i>	24
<i>Report on the TIBI 29th Behaviorology Anniversary Convention</i> [in Belgium] WERNER MATTHIJS	25
<i>Third Five-Year Index: Volumes 15-19</i>	26
<i>TIBIA Memberships Costs & Criteria & Benefits</i>	28
<i>TIBIA Membership Cost Details (and Application Form)</i>	29
<i>TIBI / TIBIA Purposes</i>	30
<i>About Behaviorology, TIBI, and Journal of Behaviorology</i>	31
<i>Some TIBI Board Member Contacts</i>	32

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

Editorial

James O’Heare

Companion Animal Science Institute—Ottawa, Canada

This issue of *Journal of Behaviorology* contains a fascinating article written by Lawrence Fraley that I hope you will enjoy as much as I did. Due to the need for a pre-publication use, the updated TIBI By-Laws appear before Fraley’s paper; the original version of the By-Laws appeared in volume 5 (then called *Behaviorology Today*). Next in this issue comes a report on the TIBI 29th Behaviorology Anniversary Convention, which was held in Belgium thanks to the organizational efforts of Werner Matthijs, among others. This issue wraps with the Third Five-Year Index for the Journal, covering volumes 15–19.

My three-years as editor for the journal comes to a close with this issue. It has been a joy to engage with authors and reviewers and help mediate the publication of various excellent contributions to our discipline. In particular, Fraley’s series of articles on reality, the project by Mike Shuler and Stephen Ledoux to update the terminology in *The Analysis of Behavior* by Holland and Skinner, John Ferreira’s *In Tune with TIBI* open letter to members, and the entire revamp of the TIBI curricular courses were particularly memorable. I hope the next editor will have as much fun with this as I have had, and I believe that likely to be the case. Indeed, we got this issue out extra early so that the new editor would have

more lead time before the next issue. It is so early, in fact, that the new editor has not yet been appointed. Is it you?

This is both an exciting and a challenging time in the development of TIBI and the discipline of behaviorology as a whole, and I will continue to exhibit discipline-enhancing behaviors as much as my contingencies demand. I hope others will be inspired to exhibit similar behaviors. Together, we can keep the flame of an independent natural science of behavior alive, growing, and contributing to helping resolve many of the problems facing individuals as well as national and global communities. If the people of the world will let us, I know we can contribute our share to saving that world.

By the way an incorrect version of Figure 1, in my article in the last issue, went to the printer. Our website contains the right version, which also appears on page 27 of this issue.

Finally, let me urge you to commit to submitting at least one article to the journal this coming year so that the rest of us may also benefit from your interaction with your environment. ☺

James O’Heare, DLBC,
Editor, *Journal of Behaviorology*

Visit BOOKS at www.behaviorology.org

At www.behaviorology.org TIBI provides information on as many behaviorology resources as possible, including books and audio/visual materials, as well as electronic versions of back issues of *Journal of Behaviorology* and its precursor *Behaviorology Today*. Some recent books are (a) two *Study Question* books, by Lisa Ramond, on Lawrence Fraley’s *Dignified Dying* book and his *Rehabilitation* book, and (b) *What Causes Human Behavior—Stars, Selves, or Contingencies?* by Stephen Ledoux. Check them out!

The International Behaviorology Institute By-laws

Article I (of 13): 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 2–A, and the purposes of TIBI as a *corporation* shall be described under Section 2–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 *Journal of Behaviorology* (originally called *TIBI News Time* and then *Behaviorology Today*) with editors being appointed by the TIBI Board of Directors, usually from among the TIBIA Advocate members; TIBI is a professional organization also dedicated to organizing behaviorological scientists and practitioners into an association (The International Behaviorology Institute Association—TIBIA) so they can engage in coordinated activities that carry out the purposes of TIBI/TIBIA (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 and TIBIA (to be printed in each issue of *Journal of Behaviorology*) 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.

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 *Journal of Behaviorology*. 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 *Journal of Behaviorology*.

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 *Journal of Behaviorology*) are:

<u>Membership Category</u>	<u>Dues (in US dollars —\$10 minimum)</u>
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, or from among the voting members who have served in one or another official TIBI capacity (e.g., as an editor or treasurer or convention organizer). 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 Directors dues shall be printed in each issue of *Journal of Behaviorology*.

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 *Journal of Behaviorology*. 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.

Also, the list of the TIBI Board of Directors and TIBI Faculty shall be printed in each issue of *Journal of Behaviorology*.

Section 4–B. Whenever the number of Associate and Advocate members reaches an appropriate level as determined by the TIBI Board of Directors, then Sections 4–B, 4–C, 4–D, 4–E, 4–F, 4–G, 4–H, 5–A, 6–A, 7–B, 7–C, and 7–D of these By-Laws will take effect.

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 TIBIA 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 reported to all the members at least annually (e.g., in a Directory of member information).

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 *Journal of Behaviorology* 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/A, (f) verifying that responses have been made to correspondence addressed to TIBIA or any of its officers, (g) coordinating the production of a *TIBIA/A 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 *Journal of Behaviorology* 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 TIBI/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 *Journal of Behaviorology* (and whenever possible, these meetings will be announced beforehand in *Journal of Behaviorology* as well).

Article VII: Quorum

Section 7-A. For the TIBI 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 *Journal of Behaviorology*.

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 *Journal of Behaviorology*. The quorum at business meetings of the Executive Committee shall be as indicated in the following chart:

Executive Committee	
Number of Members	Quorum
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 the TIBI Board of Directors from among the voting TIBIA members. 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 *Journal of Behaviorology*.

Section 8-D. In addition to the automatic allocation of adequate funds to support the *Journal of Behaviorology* 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 *Journal of Behaviorology*.

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 *Journal of Behaviorology*, 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 *Journal of Behaviorology*.

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 *Journal of Behaviorology*.

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 *Journal of Behaviorology* 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 *Journal of Behaviorology*.

Article XII: Communications Via Journal

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

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

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

Section 12-E. Board of Directors dues and Faculty dues shall be printed in each issue of *Journal of Behaviorology*. [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 *Journal of Behaviorology*. [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 *Journal of Behaviorology*. [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 *Journal of Behaviorology*. [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 *Journal of Behaviorology*. [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 *Journal of Behaviorology* (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 *Journal of Behaviorology*. [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 *Journal of Behaviorology*. [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

Journal of Behaviorology. [From 8-D and 8-E.]

Section 12-N. All official TIBIA position statements shall be printed in *Journal of Behaviorology*. [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 *Journal of Behaviorology* when they change. [From 10-A.]

Section 12-P. By-laws changes shall be reported in *Journal of Behaviorology*. [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. ☺

Visit www.behaviorology.org

Stay informed by visiting the TIBI web site regularly (www.behaviorology.org). We are always adding and updating material.

You can find a wide selection of useful articles, many from *Behaviorology Today / Journal of Behaviorology*, in Adobe PDF format. (If you need it, you will find a button to click, for a free download of Adobe's Acrobat Reader software, in the "First 10-years Archive" part of the site.) Also in the "First 10-years Archive," the articles are organized on several topical category pages (e.g., contributions to parenting and education, book reviews, and behaviorology around the world). The rest of the site features a single PDF for each full issue of both *Behaviorology Today* and *Journal of Behaviorology*. Other selections feature descriptions of numerous behaviorology texts and study-question books, TIBI's certificate programs, course syllabi, and links to some other helpful related web sites. Explore! ☺

Journal & Web Site Copyrights

While authors retain copyrights to their articles, *The International Behaviorology Institute* (TIBI) holds the copyright to www.behaviorology.org and to *Journal of Behaviorology*, the TIBI journal:
Copyright © 2017 TIBI, Inc.

Submission Guidelines

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

To submit items, contact the Editor for Volumes 18, 19, 20 (who will direct you to the new editor for Volumes 21, 22, 23):

Dr. James O’Heare
Companion Animal Sciences Institute
1333 Rainbow Crescent
Ottawa Ontario K1J 8E3
CANADA
E-mail: jamesoheare@gmail.com

Considerations

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

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

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

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

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

Mechanics

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

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

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

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

Science and Life

Lawrence E. Fraley*

West Virginia University—Morgantown (retired)

Abstract: Behavior is such a common phenomenon that differing descriptions of it arise, both explicitly and implicatively, from within various “schools of thought.” Many of the differences among those various concepts of behavior tend to result from the differing and often private philosophical assumptions that their advocates bring to public expositions. While overt analytical revelations of such otherwise private philosophical assumptions would be important for effective communication among philosophically diverse individuals, a culture-wide tendency exists to withhold the philosophical assumptions that underpin one’s overt public positions, which tends to avoid flaunting the philosophical details that influence one’s overt behavior. This cultural norm endures as a somewhat respected practice that ranks both tolerance of philosophical diversity and intra-cultural tranquility above communicative clarity. While this tends to foster our “getting along” with one another in spite of our philosophical diversity, such obscuration of important differences may have critical implications. This article reviews how behaviorology relates to such considerations. Incidentally, as it does so, this article provides a behaviorological solution to the “great mystery of life.”

The Role of Philosophy in a Scientific Perspective on Behavioral Phenomena

Natural Science and its Behaviorological Component

This article derives from a tradition of “natural science.” Among other things that phrase connotes that all detectable and measurable events are (a) functionally related to certain antecedent phenomena and (b) share in the functional determination of certain subsequent events. According to the philosophy of natural science, while the links of such functionality, continuously chaining without breaks, may remain partly or entirely undescribed during considerations of behavior (or any other kind of detectable and measurable event), that unbroken functionality is always assumed (a) to be in place and (b) never to be interrupted by unnatural intrusions. Such assumptions represent practical conceptual leaps beyond the accumulated evidence and tend to occur when that evidence is both ample and characterized by a complete absence of demonstrable exceptions. In common parlance, these characteristics of a natural science perspective may be approximated as follows: Presumably every detectable and measurable event occurs exclusively for rational and potentially explicable reasons, although some of those contributing

factors nevertheless may remain undescribed and perhaps unsuspected, especially the insignificant contributors.

Natural scientists, while working toward more complete explanations, do not pave over unresolved explanatory gaps with recourse to supernatural accounts. Until such a gap can be filled objectively with a scientifically reliable account, that ignorance is as carefully delineated and preserved as will be the objective account that ultimately may replace it. Nevertheless, as theoretically complete accounts are approached the costs associated with further explication tend to rise exponentially, eventually to unmeetable proportions. Accordingly, natural scientists will stop short of an entirely comprehensive account either when the cost surpasses the worth or when a suitable method by which to establish an account, for the time being, cannot be specified.

The particular field of natural science from which the content of this article emerges is called behaviorology. While physiology pertains to the structure of certain behavior-mediating body parts and their intrinsic operations, behaviorology features a level of analysis differing from that of physiology. Behaviorology pertains to the relation of environmental circumstances to specific behavioral events. Those involved environmental factors are called stimuli and are said to determine (or control) the particulars of a behavioral event. Thus, *how* a body is structured to produce the sound of a particular word is a

*Address correspondence regarding this article to lfraley@citlink.net.

physiological issue; *why* on a given occasion that specific word–sound is produced is a behaviorological question. Operations characterizing one of those fields cannot, in general, provide scientific answers to questions that characterize the other field. Some physiologists working in behavioral specialities may insist that eventually practitioners in their field will have come to understand neural and other bodily structures so thoroughly that they will be able to specify the only response that a particular body is structured to mediate at a given moment under specified stimulation. Perhaps so, but that long and predictably futile march has been rendered redundant by the development of behaviorology, which, via a different level of analysis, affords an immediate, practical, and effective alternative approach.

Behaviorology has developed to provide reliable accounts of the *environmental* determination of behavioral responses that are being mediated by bodily structure. Culture–defining behavior is ubiquitous. The analysis and control of its vast array of forms requires a comprehensive basic natural science of behavior, and behaviorology has evolved to serve as that foundation of accountability for the various behavioral facets of our contemporary culture. Among others, these cultural aspects include politics, business, communications, journalism, sociology, teaching, parenting, and education. In addition, fields as diverse as entertainment and governance, including its legal and judicial branches, are brought under scientific accountability via behaviorology. The current neglect of a natural science of behavior leaves people to muddle as might occur under the absence of physics chemistry, and biology—a condition that we can appreciate by reviewing the plight of humanity a mere half–dozen centuries ago.

Unfortunately, however, in contemporary human culture the current formal address of behavioral phenomena represents a dangerous compromise between the objectivity of science and the arbitrary features of mysticism. Note, too, that that comparison features the opposite extremes (science and mysticism) of a single cultural characteristic that might be described as its accountability and management (or collectively as behavior engineering). That kind of distinction between approaches to the management and control of behavior, rather than considering two fundamentally disparate or unrelated ways of doing things, posits at one extreme of a single scale an approach based exclusively on objectivity and rationality and at the other extreme an approach based exclusively on appeals to mysticism. The social compromise under discussion promotes social tranquility at the expense of competence in the management of behavior. How long such a precarious compromise can be afforded remains uncertain, but its potential for huge mistakes portends cultural disasters.

A behaviorological approach begins with the objective determination of the functional relation between existing environmental circumstances and the behavioral responding that follows. That relation is correlational. Experimentally, as the environmental circumstances are then altered in precisely specified ways, changes in the responsive behavior are precisely pre–determined by the immediate if changing microstructures of the behavior–mediating body, thus revealing how to produce, typically with high probability, specific prescribed changes in the exhibited behavior. The functional relation between environmental and behavioral variables is behaviorologically established via their correlation, while the particulars of the neural physiological operations within the behaving body remain undescribed. This level of analysis supports practical behavior engineering so reliably that adhering to it in informal practice typically becomes intuitive even to people who remain incongruously critical of behaviorology.

Behaviorological accounts are grounded in the objectively determined nature of behavior *per se*. Behaviorological accounts frame occurrences of specific behavioral events in terms of the environmental variables that are said to determine those events. Such accounts specify or imply how behavioral events can be controlled at the environmental level. That controlled production of specific behavioral outcomes, the practical aspect of behaviorological practice, is known as behavior engineering. Behaviorological operations, being grounded in a philosophical discipline of naturalism, impart a strict objectivity to the study and control of behavior. Behaviorological practice enjoys the same independence from mysticism that sets astronomy apart from astrology, hydrology apart from water dowsing, and meteorology apart from explanatory recourse to Aeolus (the ancient Greek god of winds). However, while such distinctions are generally clear to most intellectually capable people, the study of behavioral events *per se* is fraught with certain culturally imposed misleads. In modern human culture, explanatory recourse to certain superstitious ideas about behavior is so pervasive and seemingly normal that even the behavior of some natural scientists may reflect the influence of those invalid notions. Such mystically compromised individuals do not enjoy recognition as natural scientists among behaviorologists.

Also excluded from organized behaviorology are practitioners of the various contemporary “social” sciences found in most academic institutions, primarily because of their sociopolitically inspired disregard of the philosophical and scientific integrity that underpins natural science in general. In contemporary human culture the basic natural science known as behaviorology is newer than the other traditional basic natural sciences and hence not as well known as the more

familiar physics, chemistry, and biology. Within current academic institutions, behaviorology units can seldom if ever be found in science colleges comprising physics, chemistry, and biology departments. However, based on the magnitude and nature of the various problems that now threaten contemporary human culture, arguably a basic natural science of overt behavior ranks in general importance with a science of energy, matter, or life forms. Nevertheless, many contemporary natural scientists, never having been introduced to a strict natural science of behavior, tend not to know what they are missing. Some such inadequately educated natural scientists may rely on recourse to the traditional “social sciences” and their secularized versions of mysticism when defending such neglect in their own behavior–science educations. While their defensive arguments may be met with general cultural acceptance, those arguments may imply or reveal compromises of the strict philosophy of natural science.

The History of Behaviorology

Historically, within human culture the relative neglect of a basic natural science of behavior can be traced to developments early in the evolution of modern science beginning roughly around 1500. As the early emergent science of those times became increasingly defined and developed, the practical implications of a scientific approach to problem solving became increasingly important in the evolution of human culture. However, problems with how, objectively, to resolve the mysteries of behavior proved more challenging to the fledgling natural science community than did problems pertaining to energy, matter, and life forms. At the same time the historically well entrenched forces of organized mysticism continued their long history of laying forceful claim to behavioral subject matter. The power of their enforcement was, for example, pointedly exemplified when the philosopher, mathematician, and Dominican friar, Giordano Bruno, was imprisoned for seven years and subsequently burned at the stake (on February 17, 1600) for objectively reconsidering some long standing doctrines at the core of Roman Catholicism and then refusing to recant, clinging tenaciously to his recast views. Nevertheless, from that period forward a natural scientific way to think objectively about energy, matter, and life forms, if not about behavior, continued to emerge and to evolve, typically with a heavy reliance on mathematics.

In that mounting wave of scientific progress the intellectual means to think objectively about behavioral phenomena failed to keep pace, not only because of proprietary issues with organized superstition, but also because such studies required a special level of analysis that had not yet been brought effectively to bear on behavior–related issues. From the time of Bruno, the scientific community would have to wait more than 300 years for

an appropriate level of analysis plus the relevant basic principles that it spawned to bring a practical perspective on behavioral phenomena into the domain of the natural sciences. Under those circumstances, across that era leading up to the start of the twentieth century, members of the expanding natural science community tended to focus on objective developments in the fields of energy, matter, and life forms, while the scientific accounting for behavioral phenomena continued to languish.

Only during the early 1900s did a comprehensive natural science of behavior begin to coalesce around its own level of analysis. After I. P. Pavlov had described and analyzed what we now know as respondent behavior, B. F. Skinner proceeded to analyze and describe operant behavior (for the respondent/operant distinction see Skinner, 1953, p. 65; Fraley, 2008, pp. 42–43; Ledoux, 2014, p. 12). Stemming from an initial theoretical formulation published in 1913 by John B. Watson, B. F. Skinner (1904–1990), throughout a long career of experimental and theoretical inquiry from the 1940s to 1990, progressively established a comprehensive natural science of behavior that incorporated the findings of Pavlov. (To review Skinner’s vast career contribution to the science of behavior, visit the B. F. Skinner Foundation at www.bfskinner.org)

For sequential examples from the twentieth–century emergence of behaviorology, including its transition to independence from its beginnings within psychology, see the following sequence of sources: (A) John B. Watson, (1913). **Psychology as the Behaviorist Views It**, *Psychological Review*, 20, 158–177. (B) I. P. Pavlov (1927). **Conditioned Reflexes: An Investigation of the Physiological Activity of the Cerebral Cortex**. London: Oxford University Press. (C) B. F. Skinner, (1953). **Science and Human Behavior**. New York: Macmillan. (D) B. F. Skinner, (1974). **About Behaviorism**. New York: Alfred A. Knopf. (E) S. F. Ledoux, (2002). **Origins and Components of Behaviorology—Second Edition**. Canton, NY: ABCs [Editor’s note: BehaveTech Publishers in Ottawa, Canada, published the Third Edition in 2015.] (F) L. E. Fraley, (2008). **General Behaviorology: The Natural Science of Human Behavior**. Canton, NY: ABCs (also currently available at lfraley@citlink.net). (G) S. F. Ledoux, (2014). **Running Out of Time—Introducing Behaviorology to Help Solve Global Problems**. Ottawa, Canada: BehaveTech Publishing. [As a further Editor’s note, add “(H) S. F. Ledoux, (2017). **What Causes Human Behavior—Stars, Selves, or Contingencies?** Ottawa, Canada: BehaveTech Publishing.] (See the Reference List for these and other citations alphabetized by author.)

The progressive establishment of behaviorology as a new basic natural science has occurred against the cultural inertia of a long standing pattern of mutual

accommodation by the opposing factions of natural science and mysticism. In that prolonged compromise, the organized natural science community tended to yield behavioral phenomena to the mystics, a subject matter over which the natural sciences were not yet prepared to exert their mode of treatment. Nevertheless, the compelling utility of the independently organized science of behaviorology has fostered the steady organization of that science in the face of such entrenched cultural resistance. An important milestone in the cultural establishment of behaviorology was reached in 2012 when the widely respected journal, *American Scientist*, published Stephen Ledoux's article, Behaviorism at 100, which reviewed the history of modern behavior science culminating with the emergence of behaviorology; *Behaviorology Today* published the unabridged version of this article two months later (see Ledoux, 2012). Two years later in 2014 Ledoux provided a usefully expanded version of that article in chapter 1 of *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems* (book G, previous paragraph).

The Cultural Success of Science and the Responses from its Competition

Increasingly, across the past few centuries, human culture has come to a general reliance on methods and products developed by way of physics, chemistry, and biology as well as on products developed in more specialized fields that selectively apply principles from those basic natural sciences (e.g., geology, oceanography, meteorology, astronomy, agriculture). Bolstered by the quality and effectiveness of the many products that the basic natural sciences and their various applied offshoots have contributed to their host culture, the prestige of science in general has continued to grow. Within the population at large individual associations with "science" have become increasingly fashionable. Even those inclined to disparage reliance on a purely scientific approach have tended, in general, when formulating their own positions, to accommodate science rather than dismiss it. Increasingly in modern times, many academic institutions have based their claims of excellence on the productive qualities of their natural science programs and on the prestige of the academic departments from which those programs operate.

As the natural sciences have become increasingly important to the culture, especially at an effective practical level, the culturally well-entrenched forces of organized mysticism have responded to those trends in often predictable ways. For instance, prominent agencies of organized mysticism, although saddled with doctrines that are antithetical to natural science, have tended to create, with appropriate selectivity, academic institutions in which certain of their constituent units operate under

scientific titles. The academic programs in such units, currently ranging from elementary to graduate levels, mimic those found within more independent institutions. However, the internal operations of institutions controlled by the forces of organized supernaturalism have typically remained under the substantial influence of their respective mystically-grounded host agencies.

In cases where such "scientific" operations focus on issues that do not seem to threaten the mystical doctrines of their sponsors, quality science may apparently proceed albeit selectively and with certain intruded strictures within the guiding philosophy. If within such operations a scientifically inspired breach of a host agency's mystical doctrine occurs or appears imminent—perhaps more likely to occur with respect to behavioral subject matter—the involved "scientists" can be subjected to various kinds of economic, political, and social pressure to steer their work along a more acceptable trend. To prevent the emergence of such conflicts in the first place the specializations from which such doctrinal challenges tend to arise may be subject to quiet administrative curricular disallowance. Typically, under such a compromised philosophy, the objective quest to follow the evidence, which characterizes quality science, remains subject to ill-conceived variations in steering or to abandonment. While such deviations from the implicit course of the evidence may prevent some culture-disrupting conflicts between science and mysticism, throughout the culture at large the resulting casualty is the reliability of such compromised "science" and its products.

To skilled social analysts, the continuing dominance of organized religion in modern human culture may seem puzzling at first. How, they may wonder, could so many people be led to forsake rationality to that extent? However, the pervasiveness of religion derives in a straight-forward way from the behavioral nature and evolutionary status of human beings. While humans may represent the pinnacle of intellectual capacity on this planet, the general intellectuality of humans nevertheless is insufficient for most individuals to cope adequately with the complex issues that they must confront, in some cases routinely. Also noteworthy with respect to humans: intellectual activity consumes large quantities of bodily energy, a drain that typically is aversive to an affected individual. Hence the lament common to traditional school yards: "It's hard to figure stuff out!" For humans, in many cases a generally ready alternative to such often-ineffective intellectual exertion is simple rule following. Following provided rules can be especially attractive to the many whose intellectual prowess tends to prove inadequate whenever they attempt instead to resort to their personal intellects and typically inadequate educations. For such individuals, following rules provided by respected individuals tends to be relatively

straight-forward and easy. To those accustomed to simple rule following under the guidance of respected leaders, it seems to them as if they are pursuing a culturally safe trend that spares them aversive and often ineffectual struggles to analyze complex issues and synthesize their own appropriate behavioral responses. And they are praised for being good followers.

In the course of cultural evolution, whole institutions have arisen, first, to construct such appealing sets of rules, and subsequently (a) to promulgate to the populace those easy alternatives, (b) to render people seemingly dependent upon such simple behavioral prescriptions, and (c) to maintain peoples' dependence usually by convincing them that such rule following has been, or can be, effective even though that assumption may, in some cases, require an implausible stretch of the follower's interpretive capacity.

Another common tactic by the forces of organized mysticism is early intervention to distort the developing intellects of young people by making the putative reality of the touted supernatural realm seem as rational as the reality of the natural world. Upon maturing into adulthood, most individuals whose developing intellect was damaged in that way during early childhood remain generally incapable of a relevant rationality. The human intellect is the feature that most distinguishes human beings from other kinds of organisms on this planet. Arguably, the imposition of such an anti-human practice results in damage to a person's humanity that in often subtle ways may be worse than might result from overt hostility.

The Organization of Natural Science and its Alternatives for their Respective Cultural Roles

Returning to the nature and role of natural science in contemporary human culture: Regardless of the fact that, at an appropriate level of consideration, much of the basic content in the natural sciences of chemistry and biology can be resolved to classical physics, in terms of the traditionally identified three basic natural sciences (physics, chemistry, and biology), the organized natural science community has a continuing problem of internal neglect: One of the four chairs at the roundtable of the basic natural sciences has, from the outset, remained empty. The historical reasons notwithstanding, we may ask rhetorically why the natural science of behavior currently lacks equal representation among the basic natural sciences. After all, many if not most current threats to human well-being pertain at least partly to behavior-related phenomena. Yet behaviorology tends to

remain absent from the coalition of natural sciences that currently addresses qualitative issues in human culture.

Currently, the cultural niche reserved for the scientific address of behavioral phenomena tends to be filled with philosophically compromised "social sciences." In such fields recourse to weak methodology is prevalent, for example, the frequent substitutions of opinion surveys for direct measurements. Furthermore, disparity in philosophy is revealed when some practitioners entertain the fundamental assumption that behavior can be, and is, controlled by secular and/or religious mystical agents whether they exist externally or internally relative to the body. In such fields of study the fundamental conceptual integrity of the practiced science could be diminished if the respective practitioners vie to promote the currency and relevance of what may be their respectively disparate, personal, theoretical formulations.

Some natural scientists in non-behavioral fields, having succumbed to the prevailing cultural seduction pertinent to their respective preliminary training programs, may have taken "social science" courses as the behavioral aspect of their general scientific preparation. In most such cases those studies were presumed at that time to be scientifically appropriate, especially when such training was (a) widely touted in the culture at large, (b) generally approved throughout academia, and (c) in many cases endorsed or at least tolerated by the well organized and widely respected forces of mysticism. Nevertheless, through the late decades of the twentieth century, many natural scientists tended to refer euphemistically to such inappropriate or unreliable alternatives to quality science as the "soft" sciences.

Compared with natural science fields, the so-called "soft sciences" tend not to be built as objectively from first principles to complex conceptual intricacy. While the basic natural sciences (physics, chemistry, biology, and behaviorology) are characterized by a strictly cohesive conceptual integrity, a "soft science" field may tend more toward collections of personal theories and individual methodologies, among which a more comprehensive disciplinary cohesion may be established less well than in a natural science field. Historically, in the construct of a "soft science," conceptual integrity may have been less important than the mere currency and popularity of the possibly disparate theories that comprised its academic curricular content. Disciplinary cohesion may have pertained more to socio-political issues of importance to the involved individuals than to common conceptual fundamentals in their field-related studies. Prestige in such a field, perhaps enjoyed for a time by an individual, may subsequently have shifted to another individual so that the mantel of currency would be enjoyed at least briefly by each of the important people in that field.

...Or so the “soft sciences” tended to appear from the remote perspective of the organized natural sciences.

Perhaps the distinction between the natural and social sciences being drawn here can be appreciated better by considering the levels of prerequisites in academic studies within the contrasted fields. In a natural science field, a firm conceptual integrity accumulates strictly and in progressive steps. At a typical university, a natural science student’s progression of study from first principles to the most advanced conceptualizations requires, of necessity, that a student master the objectives of each preceding course in the sequence as a prerequisite for the next course. Any advanced course is strictly built on principles developed objectively in previous courses. (In the catalog of a prestigious university I once counted 17 courses that a physics major in a featured specialization would take sequentially from a beginning at the first-semester freshman level to the most advanced graduate study offered in that particular subject matter.) During progress through the curriculum of a natural science field, a student’s neglect of posted prerequisites would tend quickly to prove disastrous.

In contrast, the sequence of required courses in a traditional social science field tends to involve fewer prerequisites being attached to advanced courses than may be expected in a natural science curriculum where conceptual integrity remains subject to a stricter construction. Consider, for example, the curricular structure and conceptual integrity of the subject matter in a typical sociology department of a contemporary American university. Sociology is the study of how human behavior applies to human culture. The kind of phenomena at the core of sociology is human behavior, and if approached as an applied natural science, sociological studies would necessarily feature a curricular core of detailed and carefully sequenced inquiries into behaviorological processes followed by the applicability of those fundamentals in various kinds of social situations and institutions.

Yet, to consider just one counter-example, the sociology curriculum at a particular, arbitrarily selected, major university in the United States does not offer any such foundation. In that program, a student of sociology begins with four required courses: The first three are (a) research methods, (b) statistics, and (c) sociological theories as applied to contemporary society. The fourth requirement, a course in social inequality, is included, seemingly for its thematic relevance in contemporary society. Whatever a student’s notion of behavior and how it operates, the student simply brings that personal notion of behavior to the sociological studies. Having taken those four “basic” courses a student, depending on his or her career choice, would subsequently take one personal-involvement apprenticeship in either

criminology, general sociological research, business, or scholarly sociological writing. The student would then complete the sociological program by taking, in any order, eight more career-supportive courses chosen from a list of nearly 60 offerings. Each of those required eight electives considers some aspect or operation of the culture from a “sociological” perspective that presumably has been defined and analyzed during that student’s study in the four preliminary courses plus internship.

The point is that, although every aspect of that sociological curriculum pertains to human behavior, at no place in that curriculum does a sociology major learn explicitly about the fundamentals and operational characteristics of behavior per se—its precise nature, how exactly it works whether overtly or privately, and how most effectively to control it in the various situations described throughout the curriculum. Instead, what passes as a basic science of the subject matter is a one-course collection of sociological “theories” none of which may explicitly penetrate to the fundamental behaviorological principles of behavioral process. As a result, a sociology major, whose field pertains almost exclusively to human behavioral phenomena, can complete the prescribed sociological program without having mastered the basic natural science of the phenomena with respect to which that graduate’s expertise purportedly pertains. After investing in an education that largely ignored the relevant basic science of its own behavioral subject matter, a graduate of such a prestigious program might doubt that such a relevant, coherent, and integral basic natural science exists by which to establish a foundation for the field of sociology.

Consider two beginning students in that sociology program, one who regards behavior as an entirely natural event that is subject to an engineering kind of control and another student who assumes that behavior expresses the independent will of a largely autonomous, body-inhabiting, supernatural agent (A.K.A. an independent self-managing spirit, a private “person,” a free self-agent, etc.). The radically different notions of behavior entertained by those two incoming students would presumably lead to equally differing interpretations of much of the sociological subject matter throughout their respective programs of study. The same distinction could also apply to any two faculty members. In an academic setting open to such philosophical disparity, the general operating policy supports the corresponding prevalence of disparate versions of “science,” each participant’s version of which is informed by what remains a strictly private philosophy. For both students and faculty members in such academic programs, limiting one’s scholarly respect for others to those who operate exclusively according to pure natural science is regarded as

intolerantly unfashionable. In a “soft science” program of study, students who previously were indoctrinated with respectively diverse philosophical frameworks are equally welcome as majors, and their prescribed academic activities are tailored to avoid overtly critical challenges to their respective philosophical platforms. One’s philosophical repertoire is deemed to represent a strictly private verbal behavioral construct. Any overtly critical review by others of the relevance and implications of the philosophy being brought to the subject matter by any individual student is regarded as socially aversive and ill-mannered intrusiveness. Within that academic subculture, such overt critical consideration by others of one’s personal philosophy also tends to be regarded as inappropriately divisive and is discouraged, often formally.

But consider the implications: The students in such “soft science” programs are typically presented with training exercises that feature behavioral situations. The students may be required to perform situational analyses and then to develop plans for the improvement of behavior or the occurrence of more acceptable or appropriate behavior. An example might feature an instance of cultural disruption caused by some influential person’s misbehavior, which while yielding no sense of remorse in that individual results in extreme harm to many innocent others.

A scientifically inclined student, entertaining a philosophy of naturalism, might be guided by that philosophy to search the environment of the offender for the historical circumstances that have conditioned that person to so behave and for the contemporary circumstances that now evoke the unacceptable behavior. Once identified perhaps those environmental factors could be modified to weaken their current control of that individual’s objectionable behavior (A.K.A. changing the behavior-controlling environment). Or perhaps more acceptable responses could be evoked by conditioning the person to react differently to the prevailing circumstances. In any case change in how a body is behaving under control of its environment can be made to occur via non-invasive procedures, and presumably such change in behavior occurs as a result of microstructural changes in the nervous system of the behaving body. That is *why* a body behaves differently when its behavior-controlling environment changes. For instance, if a body is picking every flower that it sees in a city park until it encounters a sign that reads “Don’t pick the flowers,” whereupon it ceases flower picking, the body that is no longer picking flowers must differ structurally from the body that had been picking the flowers. Presumably the energy streams flowing from environment to body can, under certain circumstances, affect its neural microstructuring so that thereafter it behaves differently. (Behaviorologists operate

with correlations between changes in the environment of a body and subsequent changes in the behavior exhibited by that body; the neural physiologists sort out the chemistry and physics that underlie those correlations.)

In contrast, a student who operates with a mystical philosophy that posits, within the culprit, an internal self-agent operating as a miscreant mini-deity might react very differently to the posited situation. For instance, insofar as the posited behavior-managing mini-deity cannot be contacted directly, a common indirect approach involves harming the body of the offender in the hope that the resulting aversiveness will somehow persuade the errant, body-managing, spiritual agent to deviate from the offending behavioral course along which it has been steering its host body. Of course, a critical assumption in that approach is that the body-managing self-agent can somehow “feel the pain” inflicted on the host body or at least pity the body that is being subjected to pain. Such an approach, which usually falls within the class called “punishment,” may be regarded vaguely as a corrective attack on the offender’s intrinsic evil “self.” This represents a potentially misleading way to describe the on-going events and the chain of functional causality leading to them. (Actually, punishment, if sufficiently aversive, tends to suppress offending behavior, but only while the aversive stimulation is maintained—an often deceptive circumstance that tends to compound such philosophically guided errors as are under consideration here.)

Note that, of the two philosophically informed approaches, one tends to lead to a permanent fix while the other tends to afford temporary suppression of the offending behavior only as long as the aversive stimulation is maintained. In the latter case featuring a punishment procedure, the factors that evoke the offending behavior may be left in place while a punitively aversive counter-control is maintained. Thus, the offending behavior, while still being reinforced, is also yielding aversive consequences. In cases of successful punishment, the reinforcing effect of the undesirable behavior is theoretically cancelled by the concurrent aversive effect of the inflicted punishment, and the frequency of the offending behavior, sans net reinforcement, reduces to zero. However, in uncomplicated cases of simple punishment the offending but consistently reinforced behavior is subject to recovery if the punitive counter-control is terminated.

The Academic Management of the Conflicting Priorities

In academic programs that have been created to provide practical strategies and tactics for fixing behavioral problems, the outcomes in those relying on recourse to mystical philosophies often fail to compare favorably with those of programs that hew strictly to a natural science

approach. Theoretically, comparisons of the respective implications of students' divergent philosophies being brought to "soft-science" programs should tend to diminish tolerance for mystical philosophies. However, a contemporary public institution of higher learning must find ways to accommodate the mystical majority in the general population that supports it. The traditional solution is for an institution of higher education to offer an extensive menu of soft-science programs and to encourage patterns of social interaction within those programs that obscure underlying philosophical differences being entertained by students and faculty members. All of this is so embedded in current academic operations that its practices have tended to become intuitive, and few academics seem prepared to describe this academic cultural phenomenon in explicit detail.

Nevertheless, as noted, behavior is such a common phenomenon that differing descriptions of it arise, both explicitly and implicatively, from within various "schools of thought." Many of the differences among those various concepts of behavior tend to result from the differing and often private philosophical assumptions that their representatives bring to public expositions. Such different notions about behavior can be especially evident within academic settings, because discourse is encouraged to thrive there. While overt revelations of such otherwise private assumptions would be important for effective communication among philosophically diverse individuals, a general tendency (often accorded the status of an enforceable right) exists to withhold the philosophical assumptions that underpin one's overt public positions, which avoids any public revelation of the philosophical details that influence one's overt reactions. This cultural norm endures as a somewhat respected practice that ranks both tolerance of philosophical diversity and intra-cultural tranquility above communicative clarity.

While this approach tends to foster our "getting along" with one another in spite of our philosophical diversity, such obscuration of important philosophical differences may render certain overt arguments superficial and pointless. Furthermore, those hidden differences may have additional critical implications. Consider an example drawn from an academic faculty. While respective faculty members may feel entitled to their own philosophical constructs and claim a constitutional right to them, for an individual to suggest that one's own philosophical framework is superior is deemed socially inappropriate. In such a social climate, extreme yet privately held philosophical differences are often subject to neglect by administrators, whose actions may be driven by other kinds of factors. For instance, an economically motivated university provost might attempt to combine scattered individuals and separate faculty clusters into

a single academic department, putatively because at the overt level they all focus their studies on the same phenomenon: human behavior. Thus, while the resulting ill-cohering academic department may represent an economical construct, it could feature a philosophically motley faculty consisting of religious adherents, secular supernaturalists, philosophically compromised scientists, exclusively natural scientists, plus a diversity of philosophically muddled individuals. Not surprisingly agreements on practical issues of subject matter are relatively rare among such philosophically disparate people, and as a result they rarely work effectively together. Often, they form squabbling faculty subsets that endeavor to control each other via petty politics.

Mystically inclined people may constitute a majority in the general population of the ambient culture and accordingly demand that public institutions, operated with their tax dollars, accommodate if not bolster the general mystical perspective that they entertain. The soft sciences tend to do that. However, as a matter of practicality, valid objections to the academic operations within "soft-science" programs need not be focused on the seemingly necessary institutional accommodation of superstitious mystics.

Rather, valid objections can be focused on the fact that academic institutions, with their current methods of accommodating blatant superstition, unnecessarily may be preventing concurrent natural science attention to a critically important subject matter (i.e., behavior). Without analytical treatment and correction via some "hard" science, certain behavioral trends tend to degrade the culture at large and may become lethal to humanity or to parts of it. Note that with respect to non-behavioral subject matters, institutions of higher education have long solved this kind of dilemma by isolating the natural sciences in their own corner of the respective campuses, often in their own buildings, and operating independently under their own departmental and programmatic titles. Students and faculty members who prefer mystically informed academic approaches can gravitate to the "soft" sciences and the fields that they support, while those who prefer the strict objectivity of the "hard" sciences have their own academic niche protected by organizational isolation. Cleverly, an academic institution can thus pander to the mystical segment of the ambient culture while concurrently advancing the qualitative improvement of that culture via that institution's uncompromised "hard"-science programs.

In spite of conspicuously rare breaches, this kind of academic segregation has been relatively successful with respect to physics, chemistry, biology, and their various applied programs. Doing the same for a "hard" science approach to human behavioral phenomena is

overdue, and the relevant urgency continues to mount. A “hard” and accessible basic science of behavior now exists whether or not any given influential person has become familiar with it and regardless of the fact that behaviorology may be disregarded by individuals whose personal career investment in mystical alternatives is threatened by its objectivity, efficiency, and effectiveness.

Today, organized independently within academia, physics, chemistry, and biology departments as well as the departments of their applied specializations typically close their faculty ranks to blatant purveyors of, or adherents to, mysticism. Furthermore, such organized natural science units may resist granting membership even to individuals suspected of steering their otherwise acceptable scientific activities away from potential revelations deemed likely to contradict the mystical tenets of some unscientific organization to which such potentially deviant “scientists” may exhibit allegiance. Also, more broadly, the contemporary natural science community has grown increasingly intolerant of any member who would disrespect the scientific work of a colleague on the basis of some mystical agency’s claim to the exclusive study and management of the phenomena under investigation by that colleague. Among respectable scholar–practitioners within the natural science community at large, no phenomenon that can be established in traditional reality is allowably exempted from natural science inquiry.

Typically, however, with respect to behavioral phenomena, among the “social sciences” in contemporary institutions of higher education we still have entire academic units, programs, and departments, putatively devoted to science but staffed largely or in some cases entirely by faculty members whose philosophy of science is compromised. In such programs the unwavering allegiance of individual faculty members to a completely natural science can seldom be confirmed thus rendering generally unreliable that faculty’s putative hew to standards of scientific objectivity. Yet such “social science” programs are relied upon by the general public for guidance in solving behavioral problems, some with extreme implications, that may arise in any facet of modern culture at large.

In some such units, perhaps to bolster departmental credibility and to discourage the formation elsewhere in academia of independent cells of natural scientists of behavior, the faculty may accept into membership a controllably small percentage of uncompromised natural scientists of behavior who, because of their behavior–related subject matter, are seldom offered anyplace else to work in modern academic institutions. In spite of the occasional presence of such natural science minorities, the remainder of the faculty in such units, though touted as scientific, may continue to flounder philosophically.

Insofar as philosophy guides the practice of science, the objectivity of that majority’s science remains unreliable. Yet, to the extent that such philosophically disparate individuals are accepted as final arbiters of behavioral issues in contemporary culture, such individuals typically enjoy a potentially harmful misinvestment of public trust.

To expand our focus beyond just academia, consider what commonly occurs in the culture at large when an individual, in attempting to analyze and solve a behavior–related problem, exhausts his or her personal capacity for objective accounting. On many such occasions the stymied individual simply defers to the unfathomable plan and management style of a putatively remote and powerful deity—a propensity that has given rise to the popular expression, “God only, knows!” Such an individual may fail to notice that conjuring such a deity to complete an account or formulate a plan amounts merely to a confession that one’s relevant intellectual capacity has been exhausted. In many cases such recourse to mysticism, being culturally sanctioned and anticipated, occurs readily yet deliberately. In general, that approach, in shifting responsibility to the conjured deity, offers the advantage of deflecting criticism of the person’s explanatory inadequacy. Yet regardless of how common that ploy may be, according to an old but enduring maxim, “as science advances, God retreats”: That is, as scientific approaches yield reliable and objective answers, alternative explanatory attributions to the whims of a deity tend to extinguish. Many people have been conditioned to ignore this explanatory truism despite nearly everyone’s access to an obvious and ample accumulation of evidence supporting it.

Most intellectual persons with adequate natural science components in their respective educations have had little difficulty dismissing as fallacious the notion of a miracle–working mega–deity ensconced in the firmament, ever on standby for summonses to fix people’s respective problems via miraculous interventions. Accordingly, contemporary individuals who respect the natural science perspective tend to pursue a careful preservative delineation and cataloguing of gaps in their own explanations until those gaps can be filled by the advancing frontiers of objective, scientific, accounting.

The Great Mystery of Life

Persons versed in natural science also tend to resist recourse to supernatural accounts that have been rendered merely because a problem has resisted solution for a very long time. Instead, persons who operate with a natural science perspective tend to reexamine the validity of such protracted conundrums. Natural science teaches that long unresolved questions may represent invalid inquiries. Such long troublesome riddles may be

mis-framed, perhaps derived via false assumptions that in spawning faulty interpretations have led to invalidly framed questions. Because such questions are not subject to rational answers, eventually they may become the “enduring riddles” or “great mysteries” that characterize the culture in which they endure. Questioning the question is standard operating procedure in the practice of natural science.

One of the most salient examples of enduring unresolved issues pertains to the nature of “life.” The many versions of the so-called “great mystery of life” have plagued humankind since antiquity thus allowing exploitive cultural institutions that purport to fill that accountability gap to expand and develop their operations. In the case of “life,” the incredibly simple answer is that most of the traditional, fundamental questions have been based on invalid assumptions. Organisms are not “alive” in the mystically laced traditional sense of that term. Contrary to the traditional supernatural assumptions about the nature of life, human beings are no more alive in that sense than is one of the driveway gravels upon which they trod.

Biological entities merely have a much more intricate and complex structure than does a rock. Hence, as is well understood, the structurally elaborate biological varieties of matter share a much more extensive and diverse range of reactivity to energetic flux than can those simplistically structured rocks under foot. When an entity’s range of reactivity reaches a state of complexity that includes processes of nutrition, adaptation to environment, and reproduction it is, in general, said to be alive. Stephen Ledoux’s theory of cumulative complexity is relevant here: *“The natural physical/chemical interactions of matter and energy sometimes result in more complex structures and functions that endure and naturally interact further, resulting in an accumulating complexity.”* As Ledoux notes, a status of being alive is one of the results of such cumulative complexity. (See S. F. Ledoux [2014]. *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems*. Ottawa, Canada: BehavTech Publishing. Note especially pages 20 and 538.)

With respect to an organic unit of matter, its structurally enabled variety of reactions to changes in its energy includes the set of processes known as that organism’s behaviors, and behavior may be regarded as the “raw material” upon which evolution acts. If rocks were somehow endowed with the appropriate kinds of intricate and complex structure perhaps similar in diverse functional capabilities to that of a typical organism, eventually one might find oneself living next door to the Stones, or across the street from the Pebbles, and according those petrous neighbors the kind of respect now exclusively shared among the “living” members of your community. Such particular kinds of structural

enhancement is all that would be required of rocks to launch their long developmental course toward such socialization. Absent from such diversely reactive rocks would be independent self-agents that engage in autonomous management of their respective host entities, just as such redundant agential selves would be absent from the biological counterparts of such rocks.

The Tenacious Reliance on Private Mini-Deities

Currently however, when accounting for behavioral events even most natural scientists join in the general cultural practice of explanatory reliance on mini-deities, one presumably residing within each individual. While the soul represents the religious version, reliance on such internal behavior-managing mini-deities is not confined to religious practice. Within the natural science community, broadly seductive recourse to an internal self-agent is bolstered by the fact that most references to the “self” can seem to occur in a purely secular vein. However, the secularity of references to a self-agent does not disqualify them as appeals to the supernatural.

The big deity, presumed by many religious people to occupy a celestial universe that is superimposed on our own universe, putatively can move mountains and part seas. But the more tenaciously resilient mini-deity that supposedly dwells within each person presumably exerts direct control only over certain of its host individual’s body parts. Whether such an internal, personal, mini-deity operates as a tenuous extension of the big celestial deity (e.g., as a soul) or merely as a personal, isolated, and autonomous impetus (e.g., a self), such reliance on a mystical power to complete accounts of one’s personal behavior (of both the neural and muscular kinds) tends to occur in the absence of a more objective accounting. Such neglect of science occurs in spite of the availability of a natural science of personal behavior (i.e., behaviorology) by which more reliable accounts of behavioral phenomena could be rendered.

Putative body-inhabiting mini-deities, usually designated with pronominal variation as “I,” “me,” “you,” et cetera according to grammatical context, are as redundant as their big, singular, godly counterpart. Yet a natural scientist (e.g., a geologist) who exhibits no reliance on an almighty deity when accounting for why veins of tungsten ore occur in a particular rock formation may tend readily to account for his or her own walk toward such an exposed rock formation by relying on a private self-agent that is no less mystical than an almighty God. Declaring that “*I* decided to approach those rocks,” that putative scientist may regard that expression as literal. The ambulatory activity of that otherwise scientific individual may be interpretively described as if an “I” were some kind of agential mini-

deity that occupies his or her body and wills the body-moving behavior to occur. Commonly the person, speaking as if with the voice of an I-agent that seemingly takes credit for the actions of its host body, may utter a declaration of direct responsibility—for example, “*I* made an approach to that rock.” Furthermore, such a fictitious “*I*”-entity, in addition to making decisions, presumably can perform additional miraculous feats such as choosing, determining, contemplating, or concluding, among many others.

As further exemplification, suppose that a stream of energy begins to impinge upon one side of an inorganic chunk of matter such as a rock that has been dangling motionless from a very long piece of string. Typically, that rock is thereby heated. Additionally, if the energy impingement is sufficiently great that rock also may be displaced measurably, perhaps as the initial aspect of an oscillating motion, swinging slightly away in the direction of its opposite side. Few people would attribute that displacement to an internal rock-spirit that *decided* to move away from that impinging energy and then accordingly exerted the will power necessary to make its host rock move. If, however, the rock is replaced by an animalistic kind of organic matter unit, and the displacement occurs via behavioral processes (e.g., fanning against the air or jetting via directional air blowing), people may attribute that displacement to a “decision” rendered by an internal self-agent conjured to accomplish instances of such activity. While it is true that some neural behavior (generally called thought) may have occurred and subsequently shared in the antecedent control of the muscular activity necessary to result in the movement, that neural activity per se occurred as an entirely natural kind of event bearing a strict functional relation to preceding events. Attributing the behavioral displacement of that organic body to the activity of an in-dwelling self-agent is as superfluous as would be the evocation of an in-dwelling rock-spirit the will-power of which supposedly can somehow move its host rock.

Summary: Cultural Problems and Their Solution via Science

To summarize in the common agential style of expression: The persistent recourse to mysticism in accounts of behavioral events, even by individuals who are widely construed to be “scientific,” may result not only from the bolster of linguistic habit (i.e., of prior conditioning) but also, as previously noted, because the people in question fail to exhibit a consistent pattern of behavioral conformance to a natural science of behavior. That failure leaves them susceptible to the culturally prevailing seduction into mysticism. In such cases, some or all of

the inevitably present and totally controlling relations between environmental stimuli and behavioral responses simply go unnoticed and unacknowledged. As previously discussed, those gaps in accountability typically get filled invalidly through recourse to a pronominally denoted and seemingly secular, behavior-controlling, mini-deity one of whom presumably hovers within the body of each individual. A person who would resist attributing the contents of a radio program to a mini-deity dwelling within the radio may readily attribute displays of human behavior to such a mini-deity dwelling within the behaving body. But in the context of this discussion a human body may be likened to a radio, although humans and radios differ vastly in complexity of reacting structure and hence in their respectively mediated exhibits.

The traditional misconstruing of behavioral process, as if its occurrence reflects the will of an internal mini-deity, typically overreaches the limits of mere linguistic habit when, as is often the case, the existence of such an internal mini-deity is taken literally, whether intuitively or explicitly. Since the earliest emergence of human culture that prevailing mistake has continued profoundly to influence cultural development. While mistaken cultural assumptions about matters addressed by physics, chemistry, or biology have gradually been subjected to a corrective evolution over the past several centuries, fallacies pertinent to behavioral matters have been much less subjected to a similar corrective drift. Within modern human culture the general enlightenment of the population exhibits a conspicuous distortion with respect to behavioral phenomena.

The entire evolution of language has occurred within the culture-encompassing bubble of that continuing error. As a result, the languages with which contemporary scientists, including scientists of behavior, must express more logical accounts typically intrude that mega-error as a linguistic feature of those explications. Thus, the medium of expression per se can readily contaminate the contents of such messages. For instance, an astute reader will notice that almost inevitable characteristic in my own writing (e.g., earlier in this sentence, the possessive pronoun “my” implicitly attributed an act of writing to a mystical “me”-agent). Such linguistically caused erosion of validity can be avoided by carefully re-crafting the prose of a passage to eliminate linguistic reliance on mystical self-agents, but the often awkward and unfamiliar style of such rewrites can render their comprehension taxing to readers. The authors of contemporary behaviorology textbooks, alert to this general culture-wide problem, tend to shape readers gradually toward such a careful re-crafting of prose (see, for example, Ledoux, 2014).

Arguably, neither a human culture nor its planetary habitat can long survive without the contributions to their management afforded by a natural science of behavior. Its

culture-wide neglect may already have cost our species the capacity to muddle indefinitely onward (for more detail see Ledoux, 2014). The uncritical and widespread acceptance of pseudosciences and compromised sciences for dealing with behavior, which may seem to avoid social and political discord, too often results in superficial or invalid solutions to behavioral problems, some of which may jeopardize the survival of our species. Put simply, humanity can no longer afford its widespread neglect of the relevant natural science when managing human behavior. Perhaps this point would be clearer to most readers if, instead of talking about the cultural neglect of a natural science of behavior, this discussion instead pertained to a hypothetical absence of a natural science of energy (i.e., physics). Regardless of such speculations, if while in secondary school the typical citizen had taken courses not only in biology, in chemistry, and in physics, but also in behaviorology, worthwhile systems of governance would be less threatened by collapse, citizens would not so gullibly endorse or participate in unnecessary conflicts, people would more astutely and selectively support causes of great if subtle importance, and the manipulative exploitation of “the masses” for the benefit of special interests, now so easy, would be a much more challenging task.

The myth-dispelling capacity of behaviorology would afford an individual the means to avoid many popular misconceptions. Consider, for just one example, “personal freedom,” assumptions of which typically incorporate the invalid notion of an autonomous, internal, behavior-controlling, agential self—an autonomous, body-guiding self-agent that struggles ever to be free of “bad” influences imposed from without. Behavior does not work that way. *All* behavior is functionally controlled by the circumstances under which it occurs, and a superfluous mythical self-agent per se, including a “free” one, is never a part of those absolutely strict functional relations. One’s practical neglect of stimuli that yield insignificant or unimportant effects on behavioral exhibitions allows for tolerable imprecision in behavior engineering, but any such neglected and perhaps unknown functions remain extant and subject to subsequent discovery and engineered control should such a higher level of control become worth its cost.

Rather than connoting a lack of environmentally located controls, the sense of freedom to which people have long referred is actually a reference to the emotional state when those ever-prevailing environmental controls are of a non-aversive nature. Human behavior tends to occur readily, easily, and with emotional tranquility when it occurs under non-aversive controls, and individuals who are so behaving tend to describe their status as “free.” However, as behaviorologists insist, all behavior is *totally* controlled; otherwise it could not, and

would not, occur. Emotionally, behaving individuals tend to “feel good” when under non-aversive controls. They may refer to their “sense of freedom.” In contrast, the aversive control of their behavior, which they may describe as “oppression,” tends to evoke counter-controlling behaviors that may reduce that aversiveness (A.K.A. behaviors that may yield “relief”). Just as a course in elementary physics dispels the force of suction thus avoiding the potentially disappointing failure of a suction pump on the surface of a planet that lacks an atmosphere, a course in elementary behaviorology dispels the erroneous notion of freedom cast as a lack of control. People who accept that false notion of their freedom tend to ignore whatever is actually controlling their behavior, a kind of neglect that can facilitate their exploitation. In a behaviorological approach the actual functionally-relevant behavior-controlling variables are identified, which facilitates the establishment of direct practical control (or counter-control) over those variables. Thus, for instance, it may become possible for a person who feels somewhat free to be made to feel very free, not because most of the controls on that individual’s behavior will have been ended, but because less aversive kinds of control will have been substituted for most of the remaining aversive kinds.

Historically, through the early evolutionary stages of the human species as its intelligence continued to develop, an easy interpretive mistake occurred. It was simplistic and entirely erroneous: Life, which consists of pure process that can start, stop, and vary in rate, was mistaken for an entity that can come, go, and hover. Importantly, through cultural indoctrination, that fundamental mistake led to a plethora of invalid conclusions and implications that, in spite of their fallacy-laden foundation, nevertheless were made to seem correct to nearly everybody. Primitive human culture simply lacked an appropriate science by which to recast correctively such a flawed basic assumption, nor could the many invalid implications of that assumption be replaced easily with more reliably founded alternatives. That enduring entity-for-process error and its multiplicity of invalid implications served as a prime behavior-related foundation around which much of human culture became established, cultural institutions emerged, and languages evolved. Consequently, that ever-ballooning unintellectual festerment is now our cultural legacy.

However, when the natural science of behaviorology provides the necessary specifics of a comprehensive and relevant analytical approach to human behavior, interfering misconceptions tend less to arise and become subject to challenge when they do so. Resolving at least some of the enduring mystery that surrounds concepts of life, behavior, and the sociocultural matrix becomes relatively easy for a contemporary behaviorologist. The

challenge resides not in the difficulty of performing precisely those sorts of analyses, but in breaching the powerful cultural seduction that continues to bind nearly everyone to the alternative conventional fallacies. It now becomes relevant to ask how long human culture can endure while a substantial percentage of its people spend their lives blindly obeying traditionally provided rules instead of identifying and arranging the contingencies that would control more situationally appropriate behavior. Rhetorically put: Can human culture continue much longer to afford such neglect rather than nourishment of the human intellect? With a natural science of behavior currently available, the long-enduring habit of “going mystical” upon encountering important gaps in explanations of behavioral events can now be replaced not only with demands for more valid solutions to many of the previously enduring “mysteries of life” but also with more appropriate courses of action based upon those more reliable analyses. (Fraley, L. E., 2008, provides a classical and rather comprehensive 1,600–page introduction to behaviorology for readers who are unfamiliar with that particular basic science. See also S. F. Ledoux, 2014, for a less detailed 570–page introduction.)

References

- Fraley, L. E. (2008). *General Behaviorology: The Natural Science of Human Behavior*. Canton, NY: ABCs. [Also currently available at lfraley@citlink.net.]
- Ledoux, S. F. (2002). *Origins and Components of Behaviorology—Second Edition*. Canton, NY: ABCs.
- Ledoux, S. F. (2012). Behaviorism at 100. *American Scientist*, 100 (1), 60–65.
- Ledoux, S. F. (2012). Behaviorism at 100 unabridged. *Behaviorology Today*, 15 (1), 3–22.
- Ledoux, S. F. (2014). *Running Out of Time—Introducing Behaviorology to Help Solve Global Problems*. Ottawa, Canada: BehaveTech Publishing.
- Ledoux, S. F. (2015). *Origins and Components of Behaviorology—Third Edition*. Ottawa, Canada: BehaveTech Publishing.
- Ledoux, S. F. (2017). *What Causes Human Behavior—Stars, Selves, or Contingencies?* Ottawa, Canada: BehaveTech Publishing.
- Pavlov, I. P. (1927). *Conditioned Reflexes: An Investigation of the Physiological Activity of the Cerebral Cortex*. London: Oxford University Press.
- Skinner, B. F. (1953). *Science and Human Behavior*. New York: Macmillan.
- Skinner, B. F. (1974). *About Behaviorism*. New York: Alfred A. Knopf.
- Watson, J. B. (1913). Psychology as the Behaviorist Views It. *Psychological Review*, 20, 158–177.

Editorial Review Board & Guest Reviewers

Editorial Review Board members:

- ❧ Mr. Chris Cryer
- ❧ Dr. John Ferreira
- ❧ Dr. Lawrence Fraley
- ❧ Mr. Bruce Hamm
- ❧ Dr. Stephen Ledoux
- ❧ Mr. Werner Matthijs
- ❧ Dr. James O’Heare (Editor)
- ❧ Ms. Katie Rinald

Guest Reviews:

- ❧ Dr. Philip Johnson
- ❧ Dr. Deborah Thomas

Syllabus Directory*

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

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

Current Syllabi by Course Number

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

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

Current Syllabi by Volume & Number

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

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

Report on the 29th TIBI Behaviorology Anniversary Convention

Werner Matthijs*

*Team Coördinator van de Toegepaste Gedragsologie
Universitair Psychiatrisch Centrum Sint Kamillus, Bierbeek Belgium (retired)*

The TIBI 29th Behaviorology Anniversary Convention (BAC) took place in Leuven, Belgium (near Brussels) in late 2016. When circumstances required the planned full-days event to be changed, the participants elected to pursue the program across several weekly meetings. These occurred at the Borderline, a delightful restaurant near the canal (hence “borderline”) near downtown Leuven where dozens of different Belgium beers are available. Across the meetings, various presentations and discussions covered topics related to several components of the behaviorology discipline. Here are some highlights.

In one paper Werner Matthijs summarized the results of his research with schizophrenic subjects in a systematic replication study. He experimentally analyzed the effects of criterion-related and noncriterion-related cues in errorless stimulus-control procedures. In general his subjects were able to maintain correct responding in a procedure in which a criterion-related cue was slowly removed. They were unsuccessful, however, when the removed cue on the program was not related to the solution of the criterion task.

In another paper Jo Janssens, Sven De Deken, and Patrick Van den Eynde advanced the idea that behaviorology is uniquely positioned to consolidate and expand (moral and political) secularist movements. They predicated their arguments especially on the behaviorological analysis of values conceptualized as reinforcers, and on the importance of a religiously neutral or secular state with a strict separation between private and public.

In a more methodologically oriented paper, Werner Matthijs illustrated the pitfalls of adhering to the concept of intrinsic variability in the interpretation of data in recently published research on equivalence relations and other “derived” or “indirect” relations. He argued that young and beginning behaviorologists can still fall victim to the seductions of the tyranny of averages and other similar statistical metrics that are characteristically used in research in the social sciences. This

probably stems from the historical remnants of their earlier and usually extensive exposure to disciplines that are antithetic to their own more recently acquired natural-science perspective.

Various discussions also addressed disciplinary and practical topics. A panel discussion considered the question of whether or not the relational frame theory proposed by Steven Hayes is a contribution to Skinner’s analysis of autoclitic behavior specifically, and to verbal behavior analysis in general. Other discussion topics included (a) the question of reimbursement and licensing, especially for those who refuse, on ethical, scientific and disciplinary grounds, to identify themselves as psychologists, (b) how to make a bloc (in Dutch) for people with interests in the natural science of behavior, (c) education and training possibilities in the natural science of behavior, (d) education and training materials in Dutch, and (e) the question of how children can “help save the world,” including how and when to teach them these kinds of behaviorological knowledge and skills.↻



Photo (by Werner Matthijs) submitted on behalf of the 29th BAC attendees expressing their shared perspective at the March for Science in Brussels.

*Address correspondence regarding this article to werner-matthijs@hotmail.com

Third Five-Year Index: Volumes 15–19

This is the third five-year index for the TIBI journal. It covers volumes 15–19. Volume 15 was the last volume under the name, *Behaviorology Today*. Volumes 16–19 were the first volumes under the name, *Journal of Behaviorology*. Phil Johnson served as Editor for Volumes 15, 16, and 17, while James O’Heare served as Editor for Volumes 18 and 19 (and 20).

This Index lists the references to the main articles that appeared in these volumes, which covered the years 2012–2016. Most of the references are listed by volume in their order of inclusion in each issue. If content is not clear from the title, the entry includes an annotation.

Occasionally, *Behaviorology Today* (BT) included a piece that went through the full peer-review process. According to BT policy, when this was the case, a notice to that effect was included with the piece. *Beginning with volume 15, everything received full peer review.*

The last index—which was the second five-year index, for volumes 10 through 14 (2007–2011)—appeared in Volume 14, Number 2, Fall 2011, pp. 11–12. The first five-year index, for volumes 5 through 9 (2002–2006) appeared in Volume 9, Number 2, Fall 2006, pp. 32–34. (Volume 5, and the first five-year index, included the main articles of volumes 1 through 4 [1998–2001], which appeared while the journal was called *TIBI News Time*.)

Some issues only show one or two articles in this index. However, these issues may also contain TIBI course syllabi. These syllabi are not included in this index because the list of syllabi (the *Syllabus Directory*) is printed at the back of each issue, with the most up-to-date *Syllabus Directory* at the back of the latest issue. Nevertheless, an annotation appears regarding these syllabi for these issues.*

Volume 15 Number 1 (Spring 2012)

- Ledoux, S. F. (2012). Behaviorism at 100 Unabridged. *Behaviorology Today*, 15 (1), 3–22.
- Fraley, L. E. (2012). The evolution of a discipline and our next steps. *Behaviorology Today*, 15 (1), 23–28.

Volume 15 Number 2 (Fall 2012)

- Ferreira, J. B. (2012). Progressive neural emotional therapy (PNET): A behaviorological analysis. *Behaviorology Today*, 15 (2), 3–9.

- Johnson, P. R. (2012). A behaviorological approach to management of neuroleptic-induced tardive dyskinesia: Progressive neural emotional therapy (PNET). *Behaviorology Today*, 15 (2), 11–25.

Volume 16 Number 1 (Spring 2013)

- (Ledoux, S. F.) (2013). Highlights of the May 1987 meeting that began the formal recognition of the separate and independent behaviorology discipline. *Journal of Behaviorology*, 16 (1), 3–13.
- (Ledoux, S. F.) (2008). August 1988 radio interview of the organizers of the first behaviorology convention. *Journal of Behaviorology*, 16 (1), 15–20.

Volume 16 Number 2 (Fall 2013)

- Ledoux, S. F. (2013). Human multiple operant research equipment. *Journal of Behaviorology*, 16 (2), 3–9.
- Ferreira, J. B. (2013). Stream of energy: Using elementary principles of behaviorology to describe progressive neural emotional therapy (PNET). *Journal of Behaviorology*, 16 (2), 11–17.

Volume 17 Number 1 (Spring 2014)

- Ledoux, S. F., Hallatt, D. & Hallatt, T. (2014). An interview on behaviorology supporting a sustainable society. *Journal of Behaviorology*, 17 (1), 3–12.
- Fraley, L. E. (2014). Behaviorological science and the complexity of unfathomable variation. *Journal of Behaviorology*, 17 (1), 13–18.

Volume 17 Number 2 (Fall 2014)

- O’Heare, J. (2014). The emergence and expansion of behaviorology in the companion animal behavior technology field. *Journal of Behaviorology*, 17 (2), 3–6.
- Lebbon, A. (2014). Does periodic instant messaging while working improve productivity and quality of work? *Journal of Behaviorology*, 17 (2), 7–15.
- Johnson, P. R. (2014). A look at pharmacotherapy for treatment of severe behavior disturbances. *Journal of Behaviorology*, 17 (2), 17–25.

Volume 18 Number 1 (Spring 2015)

- Kanouse, S., Siguarjónsson, J. & Espinosa, A. (2015). A preliminary culturological and economic analysis

on the influences of mating behavior. *Journal of Behaviorology*, 18 (1), 3-11.

Fraley, L. E. (2015). What is reality to an organic unit of matter? Some physics of behavior with implications for sentience and sociality [Part I of three parts]. *Journal of Behaviorology*, 18 (1), 13-25.

Ledoux, S. F. (2015). In response to Fraley, 2015. *Journal of Behaviorology*, 18 (1), 27-28.

Volume 18 Number 2 (Fall 2015)

O’Heare, J. (2015). General parameters and procedures for courses from The International Behaviorology Institute. *Journal of Behaviorology*, 18 (2), 3-6.

Fraley, L. E. (2015). Part II: Further applications of behaviorological principles to probe the implications of traditional reality and explore its alternative. *Journal of Behaviorology*, 18 (2), 7-23.

Volume 19 Number 1 (Spring 2016)

Siguarjónsson, J., Keane, M., O’Hora, D., Stewart, I., & Leader, G. (2016). Electrophysiological activity during stimulus class formation. *Journal of Behaviorology*, 19 (1), 3-26.

Fraley, L. E. (2016). Part III: Comparing the implications of the new internal perspective with those of the traditional perspective. *Journal of Behaviorology*, 19 (1), 27-51.

Volume 19 Number 2 (Fall 2016)

O’Heare, J. (2016). [This issue contains updated syllabi for TIBI’s original 13 courses with these new course numbers: BEHG 100, 210, 211, 330, 340, 405, 425, 435, 455, 465, 512, 513, and 541. (The next issue contains syllabi for four new courses: BEHG 110, 350, 430, and 480.)] *Journal of Behaviorology*, 19 (2), 3-43.

Correction

This is the correct version of Figure 1 that appeared incorrectly on page 17 in O’Heare, J. (2017). ON TERMS: Correct classification of conditioned punishers as added versus subtracted stimuli. *Journal of Behaviorology*, 20 (1), 16-18.

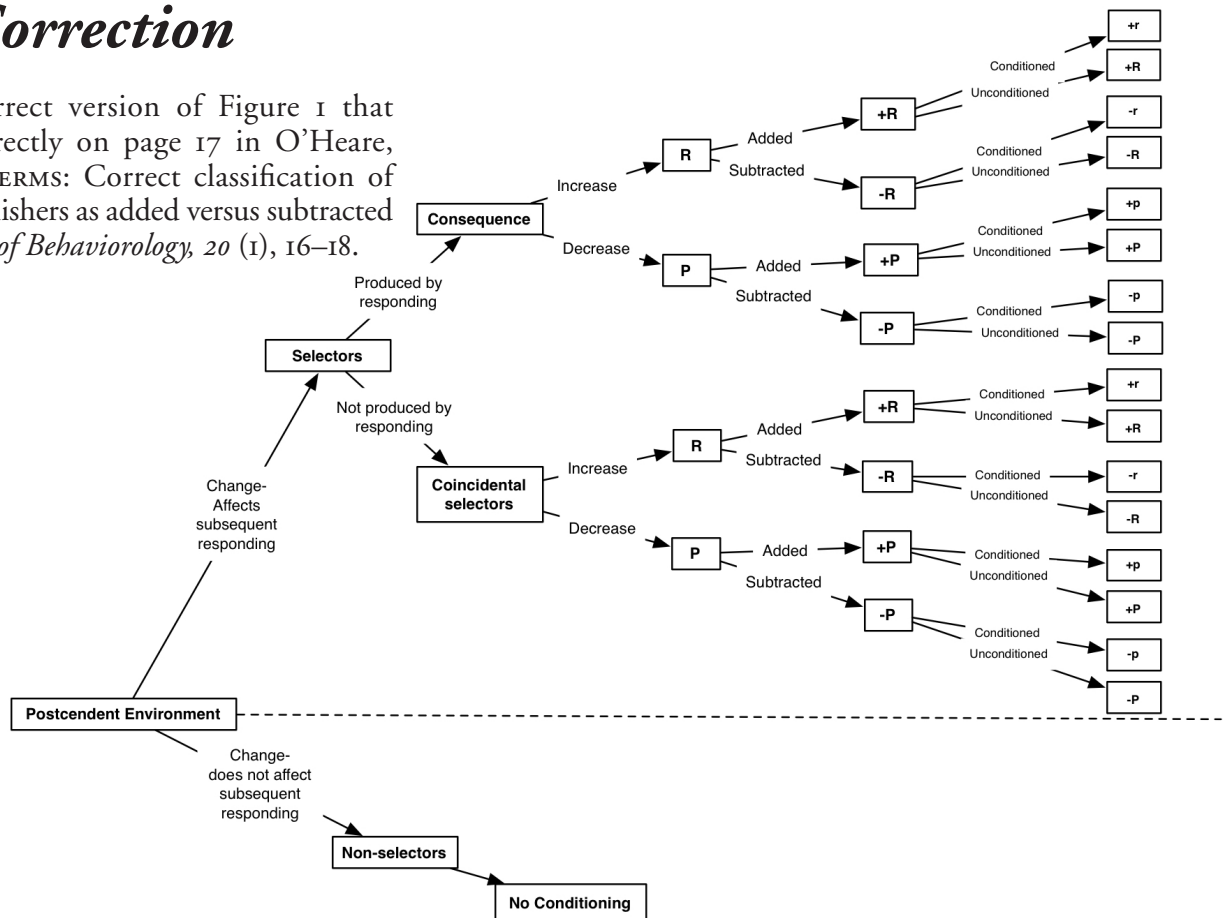


Figure 1. Diagram depicting the complete range of postcedent events resulting in changes in behavior. R = unconditioned reinforcer or where its status as conditioned or unconditioned is unspecified. P = unconditioned punisher or where its status as conditioned or unconditioned is unspecified. r = conditioned reinforcer and p = conditioned punisher. + = added and - = subtracted. Adapted from Ledoux (2010; 2015). By convention, capital letters are used where the conditioned versus unconditioned status are unspecified.

TIBIA Membership Costs & Criteria & Benefits

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

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

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

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

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

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

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

TIBIA Membership Cost Details

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

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

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

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

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

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

TIBIA MEMBERSHIP APPLICATION FORM

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

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

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

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

Name: _____

Membership (category): _____

Office Address: _____

Amount enclosed: us\$ _____

Home Address: _____

Office Phone #: _____

Home Phone #: _____

FAX #: _____

CHECK PREFERRED MAILING ADDRESS:

E-mail: _____

Office: Home:

Degree/Institution:*** _____

Sign & Date: _____

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

**Back issues: US\$20 each.

***For Student Membership:

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

Name & Signature of advisor or Dept. Chair: _____

TIBI/TIBIA Purposes*

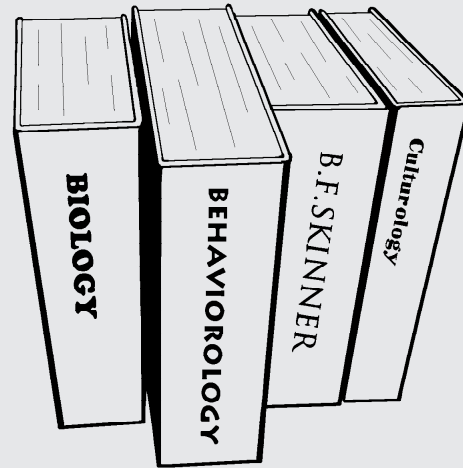
T_I**B**_I, as a non-profit educational corporation, is dedicated to many concerns. TIBI is dedicated to teaching behaviorology, especially to those who do not have university behaviorology departments or programs available to them. TIBI is also dedicated to expanding and disseminating the behaviorological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

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

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

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

ABOUT
BEHAVIOROLOGY,
TIBI, AND
Journal of Behaviorology



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

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

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

SOME TIBI BOARD MEMBER CONTACTS:

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

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

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

Bruce Hamm, M.A., BCBA
Director, Blackbird Academy of Childhood Education
Vancouver BC
brucehamm@me.com

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

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

James O’Heare, DLBC (*JoB Editor*)
Companion Animal Sciences Institute
jamesoheare@gmail.com

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

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

Journal of Behaviorology

Dr. James O’Heare, Editor
1333 Rainbow Crescent
Ottawa Ontario K1J 8E3
CANADA

