



# Journal of Behaviorology

ISSN 2331-0774

A journal of TIBI: The International Behaviorology Institute

*Behaviorology*

*Conductologia*

*Xingwei Xue*

*Gedragologie*

*Behaviourology*

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

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

## *Editorial*

**James O’Heare**

*Companion Animal Sciences Institute*

(Action Editor for this issue)

Recently the *Journal of Behaviorology* has experienced some “firsts.” Last year saw the publication of our first double issue (i.e., Spring and Fall, 2019; Volume 22, Numbers 1–2). This occurred, because the issue included seven papers, six of which were part of our first Special Section, which focused on the philosophy of science of the natural science of behavior, and its name. This double issue speeded up our publication schedule, something that continues to benefit the journal. For example, the Spring 2020 issue (Volume 23, Number 1) went out last November, and now this issue, for Fall 2020 (Volume 23, Number 2) comes out early also. Such schedule contingencies enable handling more manuscripts, so keep them coming.

Meanwhile, both issues of Volume 23 contain graphics that use color appropriately. Such color use represents another first for our journal. You will also notice that, like the last issue, this issue is printed on white paper. This enables better color rendition for the color components, which enhances the appropriate stimulus control over reader behavior that the figures evoke. This includes not only the color figures in the article by Fedorov in the last issue but also one of the figures in the article by Clayton, Boron, and Wang in this issue.

That article describes some publication trends of editors as authors in the *Journal of Applied Behavior Analysis* (JABA). The other article in this issue, by Ledoux and Fraley, revisits some material relevant to the increasing interest in contingencies on cultures and cultural practices, an interest for which the authors use

the term *culturology*. Rather than reviewing everything various authors have published in the last 30 years on this topic, the point of this paper is to provide an impetus for readers not only to study the past authors and papers but also to research the topic more, and then write more on it to enlarge the group taking interest in the topic.

That topic may bear heavily on the contributions that our natural science, and its contingency–engineering applications and intervention, can have in helping to solve global problems. Increasingly other natural scientists, and even the general public, are recognizing that human behavior causes global problems, and solving these problems requires changes in human behavior, which clearly increases the need for our science to be understood and available to as many people as possible. This endeavor requires that each of us who are already familiar with the natural science of behavior (under any label) help in every way that we can.

As part of those efforts, and as part of an ongoing set of prompts, please consider preparing a submission for publication. Like many, I too have an interest in *Culturology* and may consider preparing submissions on various considerations that this topic suggests. I would also urge others to consider making a submission on *culturology* topics, or on other topics.

By the way, the order of appearance of journal papers gets determined in no small part by the convenience (for our volunteers who layout the journal) of laying out the papers in the order in which they successfully work their way through the submission and peer review process. ☺

# Revisiting Culturology

Stephen F. Ledoux\*

Lawrence E. Fraley\*

*Abstract:* Even as the natural science of human behavior, under various names, and its contingency engineering applications and interventions, expanded during the twentieth century and beyond, *albeit under most scientific radar*, the need for its potential contributions to solving humanity's growing global problems prompted calls from other natural sciences explicitly for a "natural science of human behavior." Such circumstances also supported extending this science to an area that some have called *culturology*. Under various labels this area studies contingencies covering the behavior of groups of people in relation to cultural circumstances and prompting broad practices and consequences operating beyond the lifetime of individuals. Some currently pertinent practices (e.g., polluting, and sustainability) directly affect human survival, but human understanding of these practices suffers from misunderstanding the human-behavior components of the practices. Extending education reduces these misunderstandings and supports solving global problems.

In the natural science of behavior, the term "contingencies" refers to the wide range of functional relationships, some quite complex, that are responsible for generating, maintaining, and changing behavior. Details of contingent relations appear in textbooks (such as Ledoux, 2014). For example, in one kind of multi-part contingency, stimuli evoke the occurrence of responses that then produce consequences that affect the further occurrence of the responses by altering the effectiveness of the evoking stimuli. This is not magic; the stimuli are not themselves changing. Rather, stimuli operate on the physiology that makes an organism; that physiology mediates—it does not originate—the responses, a

constant role about which we need not know very much to maintain effectiveness in the applications that we call contingency engineering (see Ledoux, 2020).

Those kinds of contingency events operate at the individual level—on the *behavior* of animals, all animals, including humans—so we have come to call the science studying such contingencies *behaviorology* (Fraley & Ledoux, [1992] 2015). Due to the wide range of behavior-controlling contingencies, we refer to them generically as "contingencies of reinforcement," even though only some contingencies involve "reinforcement."

With human behavior also occurring at the more complicated level of cultures that involves not only groups

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\* Chapter 6 of Fraley & Ledoux, 2015, covered most of the points in this paper in nearly identical ways. We originally published that piece in 1992, so we cannot now say for sure who contributed which words. Ledoux did the work on this revisit, so we put his name first. *The current interest in the culture-level accounts and applications of behaviorology for solving global problems prompts this revisit.* It is, however, a *revisit*; it is **not** a new, comprehensive, expanded elaboration based on all available—long past or recent—materials.

Rather, the occurrence of this revisit provides new audiences with material that originally appeared in behaviorology sources—easily missed by authors of the time but nevertheless foundational to interests in the topic—around the same time that other authors (e.g., Sigrid Glenn) were drafting related materials and publishing them in some wider-circulation journals of the time (e.g., *The Behavior Analyst*). Thus, adding citations and references for those authors' articles to this merely revisited material seems out of place. Instead, this revisit provides an appropriate prompt for readers to continue by looking up Glenn and the other authors who have written on this topic and follow the strands of the topic through both their older and more recent contributions, *and then further extend the topic while taking all these past materials into account.*

Address correspondence regarding this paper to ledoux@canton.edu. The BOOKS and JOURNAL pages at www.behaviorology.org provide details on many of the references plus many other related resources. For more on behaviorology, also see www.BehaviorInfo.com (available by the middle of 2020).

*Key words:* Philosophy of science, naturalism, behaviorism, radical behaviorism, behavioral materialism, behavioral naturalism, cultural materialism, culturology, behaviorology, The Experimental Analysis of Behavior (TEAB), Applied Behavior Analysis (ABA)

of people but time beyond individual life spans, little surprise occurs when we observe complex contingency-like events also occurring at the cultural level and affecting behavior on this level. Some natural scientists of behavior have begun to study human behavior at this level, although a name for this science has not yet reached consensus. While avoiding some available but longer names, in 1992 Fraley and Ledoux (2015) began using the name “culturology.” Some elaboration about this name, and especially about the science that it names, may help in assuring that this “natural science of human behavior at the cultural level” develops swiftly, because humanity’s need for it, in parallel with the need for behaviorology, has greatly increased in the last 50 years.

The increase in the need for these sciences has occurred due to what many people see as the most serious circumstances confronting humanity today. This is the ballooning of global problems that have set constraints on the time frame people have for solving these problems before their effects overwhelm humanity. With human behavior causing many of these problems, and changes in human behavior required for solving them, the natural sciences of behaviorology, for the individual-behavior level, and culturology—or whatever it comes to be called—for the group-behavior level, have become ever more needed. (Note that some researchers prefer to restrict the term, “group behavior,” to metaphoric usages. While positions on this question fluctuate, the data to clarify the question remain as yet inadequately collected.)

This need itself presents a conundrum. Most traditional natural scientists remain unaware of even the over 100-year-old (see Ledoux, 2012) individual-level behavior science, behaviorology. Yet some of them have made various calls, some of book length, for a natural science of human behavior (e.g., McIntyre, 2006). Yet natural scientists of human behavior, under any name, are unprepared for meeting these demands, which would require far greater numbers of basic-science programs and departments of behaviorology and culturology in college and university natural-science units (see Chapter 27 of Ledoux, 2017; also see Ledoux, 2018a, 2019, 2020). A closer look at “culturology” might support its expansion and so help move developments along.

The occurrence of these more recent reasons for developing culturology (i.e., including *both* the calls for the natural science of behavior to help solve global problems, which working at both the individual and cultural levels enhances, *and* the educational developments needed to provide this help) argue for the value of revisiting this material on culturology. Otherwise, because it first occurred before being so clearly needed, it tends to disappear in other topics of the past in our early disciplinary literature.

## Philosophical Foundations and Culturology

Reviewing some cultural and philosophical context sets the stage for revisiting “culturology,” which is known, and discussed in depth but not always in agreement, under some more recent names (e.g., macro-contingency analysis and meta-contingency analysis; for some related details, see Glenn, 1988; Fraley & Ledoux, [1992] 2015). Early behaviorological scientists developed their science in a way consistent with functioning in the kind of quality-controlled environment provided by an appropriate philosophy of science (i.e., behavioral naturalism; see Ledoux, 2020). This philosophy, originally known as radical behaviorism (Skinner, 1963), and later known as behavioral materialism (Morrow, 2019), extends the philosophy of science, naturalism, of the traditional natural sciences, and maintains various tenets one of which allows no breaks, no discontinuities, in the functional chain of material events that accumulate, link by link, in a *natural history*. Non-natural disciplines (see Ledoux, 2002) allow these links of material events to be broken by non-material, or metaphysical, events (e.g., the non-spatiotemporal activities criticized by Hayes & Brownstein, 1986). Both behaviorology and culturology adhere to the tenets of this philosophy of science, although culturology may also have some philosophy-of-science tenets of its own.

Culturology—at least initially—has a scientifically informed philosophy of science, related to behavioral naturalism, that developed in a certain school within the broad field of anthropology, namely the cultural materialism of Marvin Harris (Harris, 1979). While the professionals who represent that school will ultimately specify their philosophies and name their own discipline, the term *culturology* began as an interim name for this discipline that avoided long and possibly inaccurate labels such as “anthropology informed by cultural materialism.”

The value of philosophy of science comes from interpretive extensions of the discoveries and findings of the original natural science of behavior that B. F. Skinner called The Experimental Analysis of Behavior (TEAB; see Skinner, 1957, 2012). Many now know this discipline as behaviorology, the label in use for the last 30 or more years to name the natural science of behavior with its contingency-engineering applications. When, in 1987, some practitioners of this science formally separated from a shared history with psychology, they adopted this name for their decades-old discipline. The separation produced an independence from psychology that was necessary because, as a discipline, psychology requires allegiance to various mystical or spontaneously occurring inner agential causes for behavior, and focuses not on the

independent variables of which behavior is a function, but on these inner agents as its subject matter (for the history and details of this separation, see Fraley & Ledoux, [1992] 2015). Behaviorology then is not a part, nor any kind, of psychology. Instead behaviorology focuses on the independent variables of behavior and provides the principles, methods, concepts, extensions, implications, and interpretations—all of which are needed, not just the principles, methods, and concepts—that support the contingency–engineering practices of Applied Behavior Analysis (ABA) professionals in their wide range of applied areas (e.g., parenting, regular and special education, behavioral medicine, green contingency engineering, dignified dying, companion animal training, behavioral safety, business and organizational management, penal rehabilitation, and autism and developmental disabilities interventions, among others) (Ledoux, 2019). Culturology extends this subject matter.

### **Behaviorology and Culturology Among the Life Sciences**

Traditionally the natural sciences divide into physical sciences and life sciences. Foundation life sciences—biology, behaviorology, culturology—rely heavily, though not exclusively, on the causal mode of selection in their accounts. On the other hand, foundation physical sciences, such as physics and chemistry, rely more on mechanical causality. (See Skinner, 1987, Ch. 4, for details on this distinction.)

The term “culturology” fills a gap in the labeling of the domains of concern across the life sciences from the sub–cellular level to the level of cultures. Like the label “behaviorology,” the label “culturology” has had various origins (e.g., see White, 1949, pp. 115–117 & 409–415; Ledoux composed it independently in 1986; see Fraley & ledoux, [1992] 2015, p. 147). In the most general sense, culturology refers simply to “the study of cultures.”

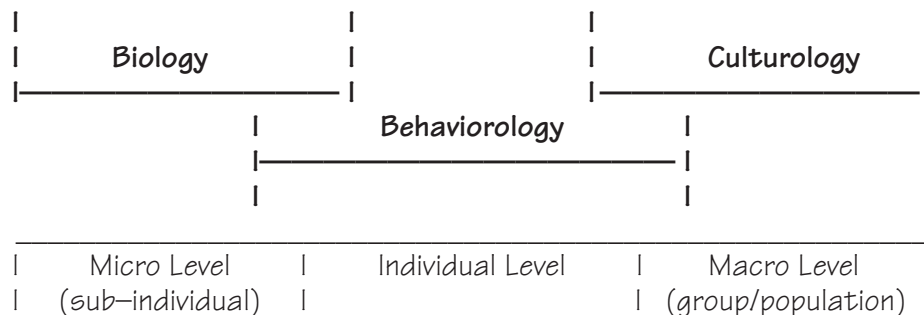
The scientific study of life, including human life, stretches across several levels of analysis. On one end is the discipline of biology, which studies—from the sub–cellular level to the level of the organism, across the history of each species—the physical and chemical activities of individuals. In biology one can approach “behavior” as a subject matter from those physiological foundations. But in social and environmental contexts, that knowledge tends to be insufficient for *practical* purposes; it needs to be supplemented by appeals to science at a different level

of analysis. This happens, for example, when attention turns from *how* a body behaves, which is a question for physiology and how physiological operations mediate (not originate) behavior, to *why* an organism behaves, which is a question for behaviorology and what natural, measurable independent variables produce the behavior (see Ledoux, 2014, 2017 for some elaboration of these connections that respect “natural functional histories”). The contingency engineering in behaviorology works poorly when its basis involves scientific principles induced from strictly biological investigations of behavior.

With biology at one end of the life–science continuum, the discipline of culturology sits at the other end, where it chiefly studies the social behavioral/cultural activities, especially of verbal species, at the level of the group or population. In culturology “behavior” as subject matter essentially involves the study of group–occurring contingencies and group–produced effects (i.e., the combined effects of concerted individual responses). The shared practices that give a group its cultural identity also interest students of culturology. Importantly to culturologists—a verbal shortcut for names like “anthropologists informed by cultural materialism” and others—such group behaviors/products can endure beyond the range of individual lifetimes. In conducting their studies, culturologists naturally concern themselves to some extent with the behavior of individuals. Thus they share some concerns with behaviorologists.

Meanwhile behaviorology resides between biology and culturology, chiefly studying the functional relations between internal and external environmental events and the behavior—overt and covert—of individuals. Thus behaviorology overlaps many behavior–related concerns in both biology and culturology. Figure 1 provides one way to illustrate these disciplinary relations.

While biology provides a sub–individual, or micro, analysis of life, culturology provides a supra–individual, or macro analysis. Between them behaviorology chiefly focuses on the functional, environment/behavior contingency relations of individuals within each individual’s lifetime. Behaviorology deals with



**Figure 1.** Disciplinary coverage for three main levels of analysis in the life sciences.

determinants from (a) the biological history of the species, (b) the behavioral contingency history of the individual, (c) the current physiological state of the individual, and (d) the current environmental context, including cultural factors sharing in the control of the individual's behavior. Thus behaviorology is the study of all behavior–controlling functional relations between the environment, both within and outside the body, and the organism, *as both organism and environment change*. The study of species evolution, ecosystems, and the behavior of animals in groups by some animal biologists implies that a disciplinary overlap also exists between biology and culturology. So one could redraw Figure 1 as a triangle with extended sides that cross each other. Each side would then represent one of these domains and its related discipline. Areas where the lines cross would then represent the overlap in the interests of the intersecting disciplines.

### **Group and Individual Levels of Analysis**

Those disciplinary boundaries remain somewhat flexible. The discreteness of any discipline becomes apparent in proportion to the quality of the products produced by its members. Disciplines arise, not from special sanctions or protections guaranteed by political, economic, or legal contrivances, but from one group producing better disciplinary products than others acting upon alternative disciplinary foundations. Thus these disciplinary regions are not mapped here as territorial claims but merely as domains of phenomena, available for scientific study, in which the mentioned groups have demonstrated adequacy in scientific address.

One sees the play of this qualitative principle in the overlap between culturology and behaviorology. Here is an example (Hayes, 1988) that clarifies the difference between the behavior of individuals and a maintained cultural practice. Regarding the repulsive jokes that many people hear, Hayes invited the reader to suppose

...that a situation emerges in which joke telling is expected. You may find to your dismay that the only joke you remember is one of these disgusting jokes. You may repeat it. Noting the reaction, you may never say it again. In the meantime, however, you have infected your audience with this terrible joke. They may go through the same cycle. Thus, we may have a wave of horrible jokes swiftly propagated across the country, even though this behavior may fail to be maintained, even for a short while, in each individual engaging in the practice (p. 16).

Notice the two levels of analysis. One level analyzes the behavior of an individual with respect to (a) why that person exhibited that behavior, (b) at what rate and to what end the individual exhibited that behavior, and (c) the fate of that behavior in the repertoire of that individual. Alternatively, at a different level, one separately analyzes the *cultural practice of repulsive joke telling*. Note, for example, that the joke telling, as a cultural practice, can continue (a) beyond the tenure of that particular kind of verbal behavior in the repertoire of any one individual and (b) beyond even the lifetime of many of its mediating individuals.

Culturologists, studying cultural practices at the descriptive level, chart their spread among a culture's members, and measure and record their strengths and durations. And these activities occur without concern about the specific controls on the behavior of the individuals who participated in mediating the practices. That implied division of scientific labor allows behaviorologists and culturologists to work concurrently and maintain differentiated disciplinary identities.

However, when objectives move from *description and prediction* to *control*, scientists concerned with culture must then design and develop new cultures (or change existing ones) by producing practices that have yet to occur. Throughout the history of their original anthropology discipline, culturologists have traditionally eschewed intervention. They have mostly identified, described, and analyzed. They have also produced some accurate predictions. But the production of new cultural behavior requires access to independent variables that control the behavior of the individuals who contribute to the cultural practices of concern. This is the level of operation at which the disciplinary distinctions can become blurred, because culturologists would then need the intervention capabilities of behaviorology (see Fraley, 1988, which elaborates on this point and pursues the disciplinary implications).

### **Group and Individual Effects**

Operating at the level of *control* represents a more recent trend in culturology. Increasingly, circumstances impose this trend in spite of traditional disciplinary ethics that oppose it. Regarding processes and procedures, contingencies of reinforcement can simultaneously operate on, or be applied to, all members of a group so that the individual responses occur concurrently, yielding group effects. An approximation might consist of something like universally applied food rationing. Another class of group effects occurs when one or more contingencies successively impinge on different individuals at different times. An example is the illusion of motion described as the "wave," which spectators sometimes generate in stadiums for an American football

game. The previous joke-telling example represents a variation in this class of effects.

Thus a predictive science of *group-produced* effects (beyond a science of individually produced effects) is possible. Furthermore, a *controlling* science of group-produced effects is also possible. Such a science has begun to developed in support of the activities of anthropologists and sociologists, who began the discipline that we are here calling *culturology*,” but it could develop further. While the summation of the behavior of individuals produces group effects, a science of group effects *can* support interventions in which the analytical repertoire of the cultural engineers does *not* penetrate to the level of individuals. For example orchestra conductors reliably produce prescribed group effects without needing to know the details of how any particular orchestra member is playing his or her instrument during each moment of a piece. In this case the audience-appreciated properties of the group effect are characteristics of the combined products or activities of the behaving performers. The contributing individual producers of this group effect are *not* each producing a small one-person version of the audience-appreciated group effect. An individual contributes something different—often extremely so—from the appreciated group effect.

That typical orchestra example shows how one cannot pursue the reality of the behavioral group effect *intact* back to its stimulus-controlled behavioral origins. In this example the different responses of each player occur under the control of at least the notes (i.e., evocative stimuli) on the score, which differ from player to player. Similarly, one can try to approach a distant Olympic flag that a stadium section of card holders generates. But ultimately one merely arrives at any one of many persons each holding up a colored piece of cardboard. The flag, so clearly perceived from afar, can no longer be detected; a person handling a colored square does not evoke a flag-seeing response by an observer. (Perceived? Detected? To experience shaping that gradually changes illegitimate mystical, agential responses into legitimate verbal shortcuts, see Ledoux, 2014.)

Yet, the level of the behavior of those individual orchestra players, or those individual card handlers, is the only level at which interventions pertinent to the group effect can be *functionally* effective (e.g., a conductor’s motion for an increase in intensity—volume—reaches to each individual player). Only when intervention attempts, designed to alter the characteristics or properties of the orchestral sound-making responses, or the flag-seeing response, in remote observers, reach down to affect the behavior of all or some of the players, or card handlers, can those group-level interventions possibly work (e.g., card-change cues *producing* a change of cards that together shows a different flag). Insofar as any group-

level behavioral intervention must have its ultimate effect on the behavior of individuals whose combined activities yield the group effect, any capacity for intervention (i.e., control) that develops at the group level of analysis must, for its effect, functionally exert control over the behavior of individuals, a province of behaviorology well worked by its contingency engineers in ABA.

On an historical note, the term “contingency engineer” deserves comment regarding a change in a common cultural practice. In the second half of the twentieth century, the then widely used term “behavior modification” ran into some serious resistance, to the point that students were warned against using it and professionals stopped using it, under penalty of some censure contingencies. Supposedly the term “modification” was somehow offensive and, in any case, was inaccurate; professionals do not directly modify behavior; they modify the contingencies, the variables that cause behavior, that change behavior. Thus, the problem resides not only with “modify” but also with “behavior.” A subsequent term was “behavior engineering.” But professionals also do not directly engineer behavior; they engineer the contingencies, the variables that cause behavior, that change behavior. For this reason some behaviorologists have encouraged the alternative practice of using the term “contingency engineering,” for it accurately describes the work of changing the contingencies, the variables that cause behavior, that change behavior (e.g., Ledoux, 2014, 2017, 2020). Practitioners then, who develop and implement interventions, are known as “contingency engineers.”

In producing effects at the group level, contingency engineers arrange to evoke the behavior of many individuals. But in many cases they give inadequate attention to the resulting behavior of *particular individuals*. Instead, the resulting group effect maintains their attention while they deliver stimuli and consequences in a blanket fashion. Group-level engineers—conductors, economists, parliamentarians, social revolutionaries, or general culturologists—can impose adjustments that produce changes at the group level while treating the whole analytical level of the affected individuals as a scientific “black box.” Culturologists thus need not be behaviorologists to operate at the scientific level of control from the perspective of their group level of analysis. However, that level of intervention lacks the sensitivity for fine-tuning the group effect, which requires changes to the behavior of *specific individuals*.

Natural scientists of behavior have long recognized that efforts to affect the behavior of groups are more successful when informed by an understanding of how and why *individuals* behave under the provided arrangements (see Skinner, 1953, Ch. 19). By adding behaviorological knowledge to their capacity,

culturologists can fine-tune their engineering. They can trace many of the circumventions or breakdowns of group-level interventions to anomalies at the individual level, such as when a single stadium card holder raises a card of the wrong color. Then they can deal with those anomalies. If only group-level intervention technologies and controls were available, imagine the difficulty for a social engineer whose plan for large-scale waste management works poorly because one waste hauler, despite the engineered policies, regulations, and social ethics—all manipulated at the group level—cuts costs by dumping his individual loads into a river from a remote bridge, loads so toxic that they nullify the rest of the engineering effort. That hypothetical cultural engineer, uninformed as to the workings of events at the individual level, would not know in a technical sense how or why such anomalous dumping occurs. Thus she or he would not be able to down-focus the engineering effort to the individual level to fix that specific fault which is degrading the designed group effect.

A culturologist, if really skilled *only* at group-level engineering, could only continue to impose blanket contingencies while hoping—not a data-based technique—that errant individuals will share at least some appropriate response with others under those contingencies. Thus good cultural engineering requires skills at both the individual and group levels of analysis. Those responsible for cultural engineering must be capable of operating, and cooperating, across the combined range of these levels of analysis as situations demand. They would be most effective when educated in both behaviorology and culturology, or at least have their foundation knowledge and skills in the full behaviorology discipline, and their specialization knowledge and skills in culturology.

Currently, obtaining those skill sets presents difficulties. To reduce these difficulties, all natural scientists of behavior, under whatever name, including the many working in various contingency-engineering areas, must support every effort of anyone that brings us together with each other and with our traditional natural-science colleagues for enhanced mutual understanding and collaboration. Such collaboration helps establish departments and programs of our natural science of behaviorology (e.g., in green contingency-engineering programs; see Ledoux, 2018b). These departments and programs necessarily extend to culturology components, including culturology departments and programs, that supports our share in the efforts of all natural sciences to help solve global problems (i.e., see Chapter 27 of Ledoux, 2017; also see Ledoux, 2018a, for potentially helpful experiences in developing natural science of behavior courses and programs). Otherwise, the unmitigated outcomes of our current global problems will likely make

all of these discussions rather meaningless (Thompson, 2010; Ledoux, 2020, provides more details).

In the meantime, those behaviorologists who are additionally concerned with the engineering of cultural practices focus on controlling the behavior of the individuals whose behavior contributes to cultural practices. The behaviorological literature is rich in basic material applicable to that sort of science. Consider, for example, *Walden Two* (Skinner, 1948) and a sequel to it (Shuler, 2020), and the culture-related chapters in *Science and Human Behavior* (Skinner, 1953) and *Beyond Freedom and Dignity* (Skinner, 1971). The Los Horcones community in Mexico provides a living laboratory. Ledoux (1985) addressed some concerns of experimental communities. And Beach (1988), in an article suggesting that the design, construction, and operation of experimental communities might be called “sociocultural systems engineering,” provides a sample of this type of disciplinary blending. (For the relevance of this blending to culture design in space settlements, see Beach, 1991a, 1991b; also see Ledoux, 2015, pp. 117 and 311.)

## Summary and Conclusion

Behaviorology serves the culture as a basic natural-science discipline productively informing the work of practitioners in a wide variety of behavior-related fields. The behaviorological level of analysis puts that discipline between biology, with its more micro-level analysis, and culturology, with its more macro-level analysis, although behaviorology overlaps both biology and culturology. Scientists are still discovering the contributions of these and other disciplines with respect to saving the culture by solving global problems. Apparently the culture cannot be saved without massive interventions based on the knowledge and products of the these and other natural sciences, especially the contingency sciences—with their contingency-engineering components—of behaviorology and culturology.

In conclusion, under various labels, *culturology* studies contingencies covering the effects of the behaviors of groups of people in relation to cultural circumstances prompting wide ranging practices and consequences operating within and beyond the lifetime of individuals. This discipline also helps solve global problems, thus reducing the risks from the disasters that otherwise currently threaten to overtake humanity. Education departments and programs, especially today in behaviorology and culturology, need substantial expansion to better enhance understanding of the basic science, as well as its contingency-engineering practices (i.e., ABA). This would improve effectiveness in contributing to making a better future.✿



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## 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*;  
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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.

# *Editors as Authors: Publication Trends of Articles Authored by JABA Editors 1997–2017*

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**Julie Boron**

*University of Nebraska, Omaha*

**Yilin Wang**

*Missouri State University*

*Abstract:* An important dimension of any journal is the contributions of its editorial board to the tone of the journal itself. Editors and associate editors review and shape the work of authors and also serve as authors themselves; in doing so, they influence the journal's direction and quality. Mathews (1997) described this unique role of editors in *JABA* by analyzing the annual publication rates of 55 editors and associate editors, which showed an increasing trend of postdoctoral experience and greater number of publications prior to appointment as editors. The current paper extends the previous analysis over the subsequent two decades (1997–2017), including 44 editors and associate editors, adds additional author demographic data (i.e., gender, degree-granting institution), and allows multiple comparisons between the original work and current project, as well as a survey of the entire history of *JABA* (1968–2017).

The *Journal of Applied Behavior Analysis (JABA)* periodically publishes articles meant to summarize an aspect of the journal as it relates to the broad mission of “publishing research about applications of the experimental analysis of behavior to problems of social importance” (*Journal of Applied Behavior Analysis*, 2020). For example, Laties and Mace (1993) reviewed the first 25 years of publications in *JABA* and discussed the relative success authors had in applying experimental analysis to a wide range of problem behaviors and the increasing breadth in applications of that technology. Northrup, Vollmer, and Serett (1993) described the number and type of articles, subjects, settings, target behaviors, and intervention procedures used in research articles published in *JABA* and noted the increasing complexity and multi-component nature of applied interventions in the journal. Dymond, Clarke, Dunlap, and Steiner (2000) analyzed international publication trends in the journal over 29 years. The authors found a notable paucity of author representation from outside North America and an increase in publications by frequent

contributors or “*JABA* Veterans” from North America. Martin, Nosik, and Carr (2016) replicated the Dymond et al. (2000) review and found that international authorship rates remained unchanged over the subsequent 15 years of publication in *JABA*. Most recently, Fedorov (2020) completed a bibliometric analysis of research articles in the *Journal of the Experimental Analysis of Behavior (JEAB)* and *JABA* that addressed autism spectrum disorders (ASD) and found that up to 44% of articles in *JABA* addressed ASD, while only 1.5% of *JEAB* did so. These types of reviews provide needed context, recognize trends, and help readers understand the evolution of research publication in the field.

An important aspect of any journal is the contributions of its editorial board to the tone of the journal itself. Editors (and associate editors) review and shape the work of authors and, in doing so, influence the journal's direction and quality. Editors and associate editors also serve as authors themselves, contributing to the body of knowledge within the field. To assess this influence, Mathews (1997) described the publication

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rates of 55 editors and associate editors before, during, and after their appointment to the editorial board of *JABA* from 1968 to 1996 and found an increasing trend of postdoctoral experience prior to appointment as an editor and a greater number of publications before becoming editors. These results indicated that while the editors and associate editors have an indirect influence on research published in *JABA*, their more direct influence comes as authors of published work in the journal.

The current study attempted to replicate the previous findings by including the subsequent 20 years (1997–2017) of volumes published by *JABA* and extended the replication by including additional author demographic information (i.e., author gender and degree granting institution) over the years 1968 to 2017. Incorporating data from the previous review, duplicate authorship among editors/associate editors and the percentage of empirical papers published by editors/associate editors over the entire history of *JABA* were assessed. Finally, the findings from Mathews (1997) were compared with data over the next two decades to highlight any changes in the publication practices of editors and associate editors over this extended time period.

## Method

### Coding Procedures and Dependent Variables

In the 20 years since the previous review (Mathews, 1997), *JABA* has had seven editors and 37 individuals have served as an associate editor. A list of these 44 editors and associate editors was compiled by reviewing the inside cover of each physical volume of the journal. *JABA* publications by these 44 individuals were identified by a computer search of the Wiley Online Library (<https://onlinelibrary.wiley.com/journal/19383703>). Any discrepancies were checked on the National Institute of Health's archive (<https://www.ncbi.nlm.nih.gov/pmc/journals/309/>). Wiley's web site includes information about every *JABA* publication (including editorials, discussion articles, and research reports) from Volume One to the most recently published issue (Volume 52). The National Institute of Health's site includes just the first 45 volumes, thus any discrepancies in the most recent volumes (Vol. 46–50) were checked using physical copies of the journal. Online databases were chosen based on convenience and the belief that the Find function of a computer browser would be more accurate than human observers. Of course, human observers would still be involved when quantifying the output of the Find function and it is unknown how accurately the online databases reflect the physical copies of the journal (although see below).

Every publication (e.g., research article, research report, book review, and discussion article) by any of the 44 editors and associate editors published between 1997 and 2017 was entered into a spreadsheet for subsequent data analysis using the spreadsheet included in Mathews (1997) as a model. The table of contents for each issue of every volume was used to identify editor and associate editor publications by using the Find function (CTRL-F) of the computer's browser. The use of computer technology, specifically the Find function, may have reduced some of the errors that human observers make when relying on visual analysis alone, but visual analysis of the results of the Find function was still performed by humans.

To check the accuracy and completeness of the online database, physical copies of the journal from five randomly selected years were used to compile a list of publications by the editors and associate editors included in the current review. The online database and the physical copies of the journal yielded an identical list of 259 publications for those five years. The degree to which the online databases reflect the primary source material was an ongoing concern, and only five years were analyzed, but the additional data provides some support for the use of online databases instead of physical copies of the journals.

*Dissertation Abstracts International* was reviewed to identify the year that each of the editors and associate editors received a doctoral degree and the granting institution. Editors and associate editors were designated as women or men in several ways. In some cases, the first author knew the author after having met them previously (27.08%). In other cases, authors were considered female/male if they had a stereotypically gendered (e.g., Julie) first name (93.75%). When neither of these cases allowed an author to be classified, a Google search was conducted using the person's full name in sources such as university web sites, ABAI web pages, and social media (7.29%). A random crosscheck of 32 editors/associate editors (33.33%) using the third method (online) was performed and found 100% agreement between that method and how they were scored with one of the first two methods. These procedures enabled us to categorize all 96 editors/associate editors from 1968 to 2017.

The inclusion of data describing authors as male or female was prompted by recent events and research in the field (Sundberg, Zoder-Martell, & Cox, 2019). In 2015, Nosik and Grow (2015) reported that while the vast majority of BCBAs are female, there are relatively few females present in research and editorial boards (Li, Curiel, Pritchard, & Poling, 2018). In a recent article in *Behavior Analysis in Practice*, the culture of sexism in behavior analysis and how the field could successfully change that cultural practice was detailed by Baires and Koch (2019).

In building the database of editor and associate editor publications, no distinction was initially made between editorials, commentaries, discussion articles, and research articles. A secondary variable that specifically isolated research articles was then constructed using Northup and colleagues (1993) definition of a research article. In this case, “an experimental study that demonstrates the effect of an independent variable on some dependent variable.” This was the *implied* definition used by Mathews (1997) as well. Finally, we also accounted for multiple authorship, as did Mathews (1997), with another variable, “unduplicated.” Many articles had more than one editor or associate editor as an author (e.g., Baer, Wolf, & Risley, 1968). This seminal example would normally result in three publications because all three authors were editors, but in this case only counted as one publication. In this way, the “unduplicated” variable provided a more accurate and conservative measure of editor research productivity.

original review was .68 articles per year, on average. This was an increase of 91.2% over the previous review period (1968–1996), and shows greater research productivity during the time between first *JABA* publication and subsequent appointment as an associate editor. Second, the 37 associate editors published a mean of 1.61 *JABA* articles per year (upper-right), on average, as associate editors during the current review period, compared to .94 in the original review. This was an increase of 71.3% over the previous review period and shows greater research productivity by associate editors during their terms. Third, the seven editors published a mean of 1.53 *JABA* articles per year (middle-left), on average, during their term as editor during the current review period, compared to 2.41 articles per year in the original review. This was a *decrease* of 57.5% from the previous review period and shows that editors decreased their research productivity during their terms as editors over time. Fourth, as a group, editors and associate editors published a mean

### Intercoder Agreement

Intercoder agreement was evaluated for the authorship of every article in the database using the same procedure as Mathews (1997). Utilizing the overall agreement approach, articles for which at least one coder identified an editor or associate editor as author were compared to evaluate agreement. The coders reached 100% agreement on editor/associate editor authorship for 1,252 articles. There were some initial agreement ambiguities (2.32%) based on issues such as inconsistent author surname use, inconsistent first and/or middle name use, and inconsistent hyphenation use in family names, but these ambiguities were resolved by reviewing the articles themselves in each of the cases.

### Results and Discussion

The first set of comparisons (Figure 1) directly compared the findings from the original review (Mathews, 1997) with the results from the current review. First, as a group, editors and associate editors published a mean of 1.30 articles per year (upper-left), on average, from the time they first published in *JABA* until they were first appointed associate editor during the current review period. The rate in the

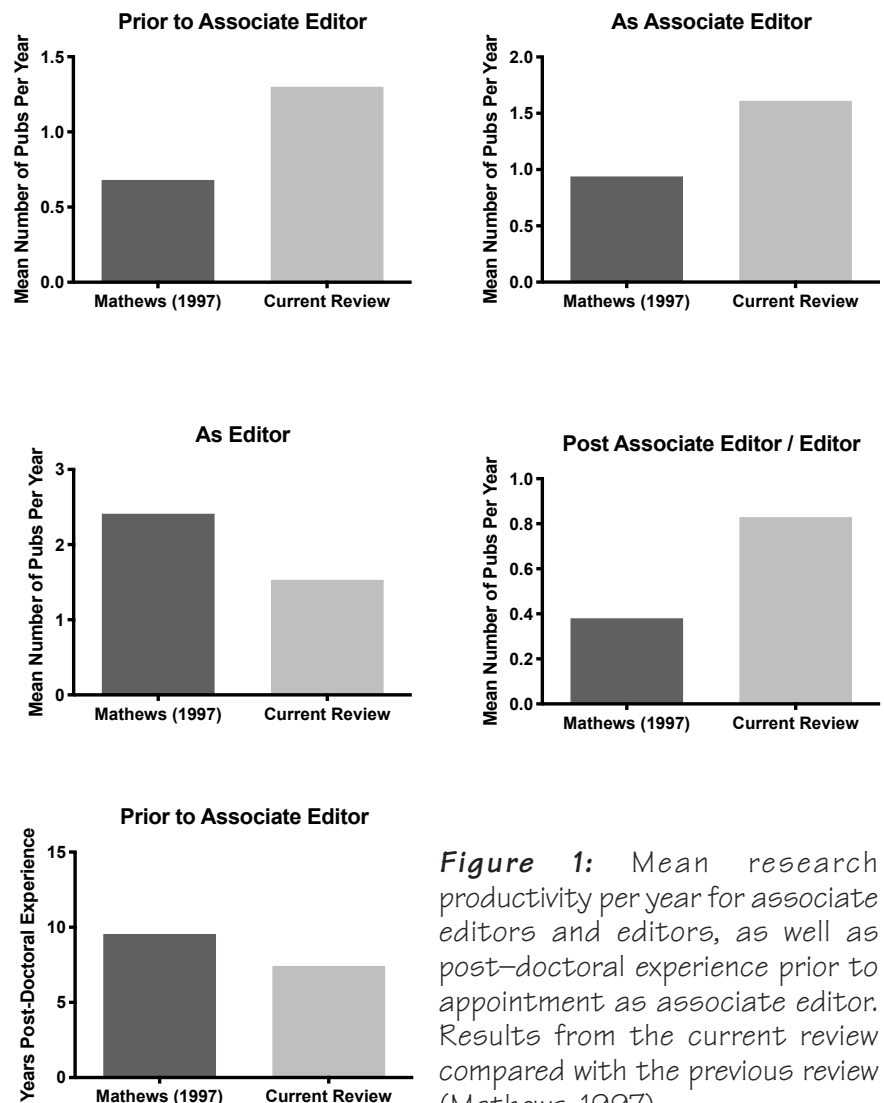


Figure 1: Mean research productivity per year for associate editors and editors, as well as post-doctoral experience prior to appointment as associate editor. Results from the current review compared with the previous review (Mathews, 1997).

of .83 *JABA* articles per year (middle–right), on average, after completing their term as editor or associate editor during the current review period, compared to .38 per year in the original review. This was an increase of 118.4% over the previous review period and shows that editors and associate editors increased their research productivity after completing their terms as editor. Finally, the average number of years of postdoctoral experience that each of the former editors and associate editors had prior to their initial appointment as an associate editor was 7.43 years during the current review period, compared to 9.55 years in the original review (bottom–left). This was a *decrease* of 22.2% from the previous review period and shows that editors and associate editors are stepping into those roles sooner (on average) than they had been during the previous review (Mathews, 1997), which noted an increasing amount of post–doctoral experience at that time. It is possible that *JABA* was receiving more manuscripts due to significant growth in the field over this time period and the increased workload necessitated moving members of the editorial board into more senior roles sooner than in the past. Future research could address this issue with adequate access to data from the journal on submissions.

### Productivity by Gender

This data is also presented in Table 1 and includes the corresponding data for both male and female editors and associate editors. Research productivity prior to becoming an associate editor, and subsequent to completion of their term as editors and associate editors was almost identical for males and females. Once they became associate editors, males published more often than females (49.1%), but as editors, females published more often than males (14.4%). Finally, the average number of years post–doctoral experience prior to becoming an associate editor was greater for males (8.6%) than females.

The relatively small number of female editors of *JABA* over its history both decreases confidence in averaged data and (conversely) drives home the point that females have been underrepresented as editors of *JABA* (McSweeney, Donahoe, & Swindell, 2000). There was only one female editor (9.1%) during the period 1968 to 1996 and two female editors (28.6%) during the period from 1997 to 2017. Thus, the averaged data on female participation are less reliable when using such small numbers. The proportion of female associate editors is greater and prompts more confidence in the averaged data. During the period from 1968 to 1996, there were eight female associate editors (19.5%) and 12 (32.4%) during the period from

1997 to 2017. In both cases, female authors are a growing proportion of editors and associate editors.

This growth in female participation over time is encouraging but recent data suggests that women substantially outnumber men in behavior analysis practice. Recent data show that 82.2% of Behavior Analyst Certification Board (BACB) certificants are female, including 68.3% of those who are certified at the doctoral level (Nosik & Grow, 2015; Li, Curiel, Pritchard, Poling, 2018). While the field of applied behavior analysis is predominantly composed of females, the editorial board of *JABA* is somewhat less representative of this fact. The current review shows that when females become editors and associate editors, they are more than capable of contributing at similar rates to that of male editors (see Table 1).

### Duplicate Authorship

Figure 2 shows the data for the percentage of duplicate authorship among editors and associate editors (top) and the percentage of empirical articles (bottom) published by both groups over the entire history of *JABA*. During this time, the percentage of duplicate authorship (top, Figure 2) was about 20% prior to the 1990s and, again, after the turn of the century. For approximately one decade (1990–2000), there was a marked increase in duplicate authorship in *JABA*. This increase is highlighted with a dotted line (top, Figure 2) indicating data that were two standard deviations from the overall mean. One possible explanation for this phenomenon might be the existence of one or two very productive researchers, continuing to publish with their students who then also served as

Pubs Per Year Prior to Associate Editor	
Overall	1.30
Female	1.30
Male	1.31
Pubs Per Year as Associate Editor	
Overall	1.61
Female	1.21
Male	1.80
Pubs Per Year as Editor	
Overall	1.53
Female	1.67
Male	1.46
Pubs Per Year Subsequent to Editor/Assoc	
Editor	
Overall	0.83
Female	0.86
Male	0.82
Post-Doctoral Experience Prior to Assoc	
Editor	
Overall	7.43
Female	7.00
Male	7.60

**Table 1:** Mean research productivity per year for associate editors and editors. Post–doctoral experience prior to appointment as associate editor and data broken down by gender are also included.

editors and associate editors. In particular, Brian Iwata (University of Florida) and David Wacker (University of Iowa) were editors and frequent authors who also trained many students who then went on to being productive researchers as editors and associate editors.

### Empirical Article Authorship

The trend in empirical article publications by editors and associate editors over approximately five decades in the journal (bottom, Figure 2) was less remarkable but shows an increasing percentage of empirical publications which necessarily means a corresponding decrease in

the publication of editorials, book reviews, and discussion articles by editors and associate editors. It is unclear why there has been a decreasing trend in the publication of discussions articles but the increasing emphasis on the technical aspects of applied behavior analysis may partially explain this trend (Hayes, Rincover, & Solnick, 1980). Future research could provide insight into whether this is, in fact, a real phenomenon among the general authorship of *JABA* publications, as well as editors and associate editors.

### Degree-Granting Institution

Figure 3 shows the data for corresponding degree-granting institutions of all 44 editors and associate editors included in the current review, as well as the 55 editors from the earlier review, using a treemap. Treemaps are a space-filling visualization method capable of representing large hierarchical collections of quantitative data. A treemap works by dividing the display area into a nested sequence of rectangles whose areas correspond to an attribute of the dataset, in this case, frequency (Shneiderman, 1992; Shneiderman & Wattenberg, 2001). During the period from 1968 to 1996, schools such as University of Kansas, University of Washington, Stony Brook University, and Florida State University were heavily represented among editors and associate editors in the journal. During the period from 1997 to 2017, one school (University of Florida) was most heavily represented, while others like Louisiana State University and the University of Kansas were also

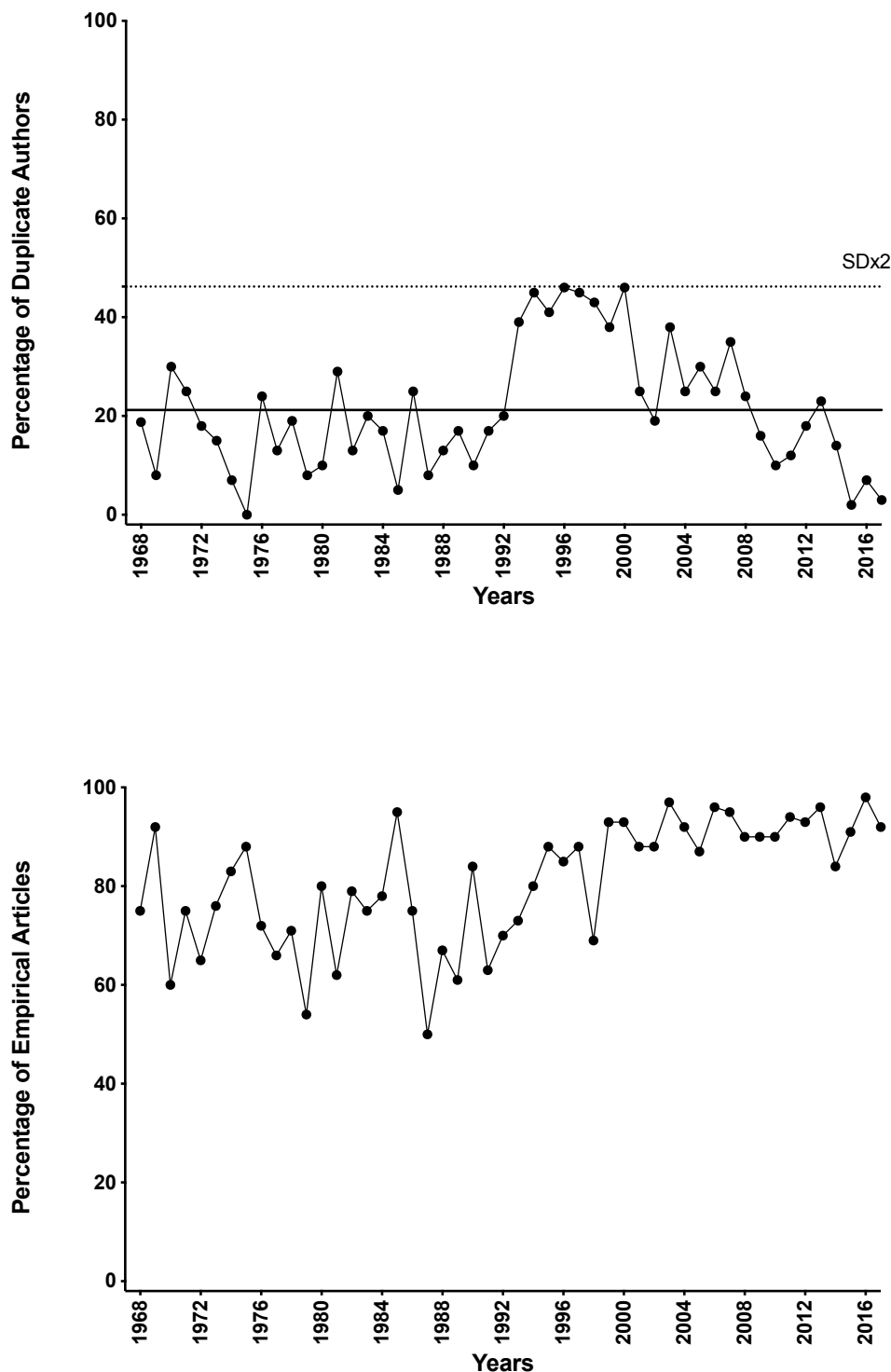


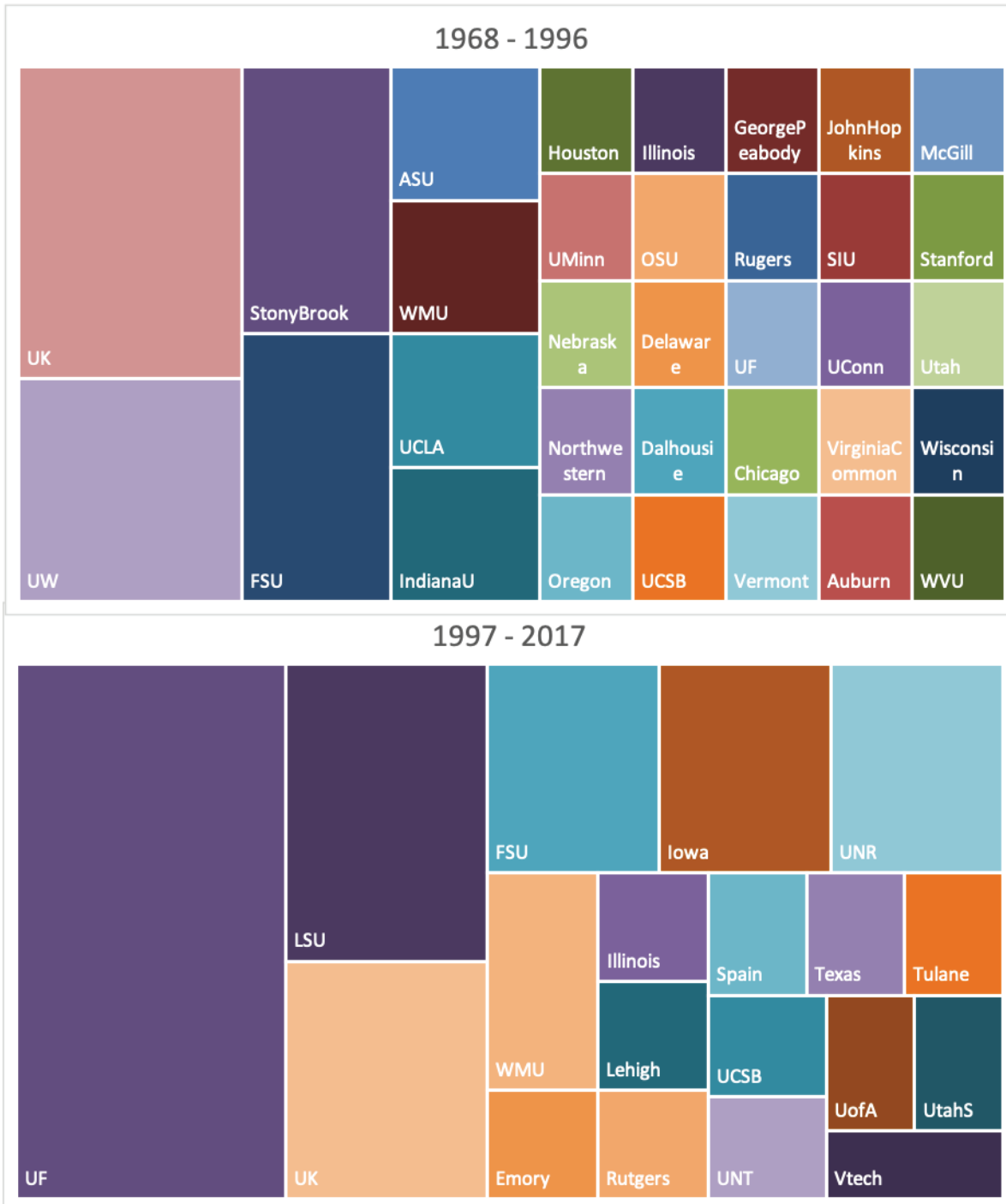
Figure 2: (Top) Percentage of duplicate author publications by associate editors and editors in JABA from 1968 to 2017. (Bottom) Percentage of empirical articles published by associate editors and editors in JABA from 1968 to 2017.

well represented among editors and associate editors of the journal.

**Summary**

The original review (Mathews, 1997) described the publication rates of 55 editors and associate editors before, during, and after their appointment to associate editor/editor in *JABA* and found an increasing trend of postdoctoral experience prior to appointment and

a greater number of publications before becoming editors. The current review found a decreasing trend in postdoctoral experience prior to becoming an editor, and a continuing trend in greater publications before becoming editors. The findings showing either increases or decreases in research productivity are with respect to publications appearing in *JABA* only. It is possible, and very likely, that authors were publishing research in other behavioral journals during this time. So, while author



**Figure 3:** Treemap data for corresponding degree-granting institutions of all 44 editors and associate editors included in the current review, as well as the 55 editors from the earlier review.



research productivity might decrease (or increase) in *JABA*, it may have been increasing in other behavioral journals at the same time. In addition, the clarity of the findings from the original review as well as the current review has been improved by incorporating visual analysis of the results using several graphical methods. Finally, the current review also included the previous review's data to summarize duplicate authorship and percentage of empirical articles by editors and associate editors, as well as author gender and degree-granting institution, over the entire history of *JABA* (1968–2017).

Because editors and associate editors review and shape the work of authors, thereby influencing the tone and quality of the journal, recognizing similarities/differences and trends are noteworthy endeavors for understanding the evolution (or patterns) of publication in the field. The previous review argued that researcher productivity before, during, and after editorial terms, and years of postdoctoral experience prior to becoming an associate editor, impacted “the tone and quality of the journal.” The current review greatly expanded that dataset and supports the same conclusions. The inclusion of data on author gender and graduate training might aid an analysis of the influence of those factors on tone and quality of the journal as well. As more females enter the field, they bring a unique perspective and diversity to the science and their voices are increasingly being heard as authors, associate editors, and editors in *JABA*. The vantage points of various universities and graduate programs are, no doubt, diverse. Graduate programs are staffed by faculty with philosophical perspectives and they instill those perspectives, to some degree, in their students. The effect of this training on the members of the editorial boards is unknown and important for understanding the context from which the research in our field arises. The current review enriches the analysis of the role of editors and associate editors in the tone and quality of the field's flagship applied journal. ✧

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## ***Editorial Review Board & Guest Reviewers for This Issue***

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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! ☺

## ***Back Issues & Donations***

Some back issues of the Journal are available; the cost is US\$20 each, which includes air-equivalent postage. To place an order: Photocopy, fill out, and send in the “membership” form on a later page of nearly every Journal issue; check the “back issues” box, and list the volume and number of each back issue that you are ordering. Mail the form, with a check for the correct amount, in US dollars made payable to TIBI, to the address on the form.

*Donations/Contributions* are also welcome, and are tax-deductible as TIBI is non-profit (under 501-C-3). ☺

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## Submission Guidelines

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

To submit items, contact the Editor:

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### Considerations

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

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

All accepted pieces must contribute to the behaviorology discipline (e.g., by relating to or clarifying or expanding some 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.☺

## 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.

**Life membership.** At its February 2020 Annual Meeting, the TIBI Board passed a motion enabling *Life Memberships*. The criteria and requirements appear in the Minutes to that meeting. If you are interested, contact the TIBI Treasurer for details.☺

# 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
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\*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

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 Subscriptions\*:   
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 ✧ Vol. \_\_, # \_\_  
 ✧ Vol. \_\_, # \_\_

Name: \_\_\_\_\_

Membership (category): \_\_\_\_\_

Office Address: \_\_\_\_\_

Amount enclosed: us\$ \_\_\_\_\_

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Home Address: \_\_\_\_\_

\_\_\_\_\_

Office Phone #: \_\_\_\_\_

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

A. to foster the philosophy of science known as radical behaviorism [AKA behavioral naturalism];

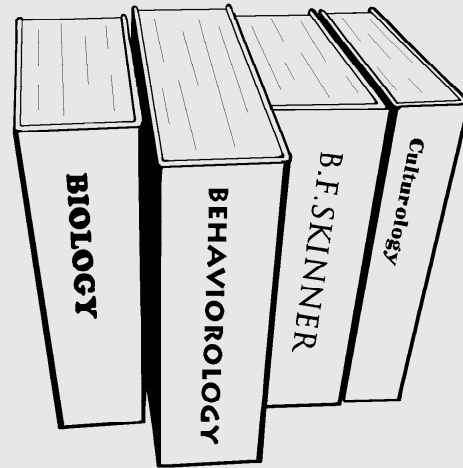
- B. to nurture experimental and applied research analyzing the effects of physical, biological, behavioral, and cultural variables on the behavior of organisms, with selection by consequences being an important causal mode relating these variables at the different levels of organization in the life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

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

## ***Another Free-Access Behaviorology Website***

**B**y the middle of 2020, behaviorologists and friends and indeed everyone can access another behavior-related website, [www.BehaviorInfo.com](http://www.BehaviorInfo.com). Primarily, and initially, this website features Stephen Ledoux's first set of 72 newspaper columns about the basics of behaviorology so that more people can gain more familiarity with this natural science, because human behavior causes global problems and changes in human behavior help solve these problems. At the rate of two columns per week, after this first set comes a second set of 72 newspaper columns emphasizing scientific answers to ancient human questions (e.g., on values, rights, ethics, morals, language, consciousness, personhood, life, death, reality, and even robotics). Then could come columns by other authors.

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.)☺

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