Behaviorology Terminology Adjustments for The Analysis of Behavior by Holland and Skinner

Mike Shuler[a]

Stephen Ledoux[b]

Abstract: Updating the terminology used in the programmed textbook, *The Analysis of Behavior* (Holland & Skinner, 1961) keeps the book capable of conditioning initial terminology repertoires with beginning students of the natural science of behavior. This would reduce the need to condition improved terms to replace the old terms in these students' repertoires that the original textbook would condition. This paper provides our recommendations for the frame by frame adjustments that could accomplish this terminology updating for this textbook.☘

Under various labels (e.g., TEAB [The Experimental Analysis of Behaivor], behavior analysis, behaviorology) professors teaching the natural science of behavior have been using the "H&S" (Holland & Skinner) programmed text, *The Analysis of Behavior* (Holland & Skinner, 1961) for over half a century. Over that time the discipline has continued to develop, including being formally recognized by a group of its adherents in 1987 as a then 75–year old, separate and independent natural science discipline related more to biology than to psychology (see Fraley & Ledoux, 1992/2015); indeed, as behaviorology, this discipline is not any kind of, nor any part of, psychology.

A major aspect of those disciplinary developments involved refinements in terminology, including some of the terminology that the H&S text so effectively conditions. Over the last decade, as a result of these terminology developments, using the H&S text has begun to require professors to provide much editorial reconditioning of student terminology repertoires. In light of this situation, some terminological adjustments for the H&S text are in order. Presented here are our suggested adjustments for editions of the H&S text, printed or electronic, for current classroom/student use. (In addition, we also hope that current electronic editions of the H&S text also find ways to reinforce, and shape, rather than punish, student responses that might be "wrong" for somewhat irrelevant reasons, such as "merely" misspelling the correct answer.)

More adjustments than those we suggest here are possible. For example, we have not tried to change the unnecessary, near–exclusive use of male personal pronouns (arising from the then gender–insensitive practices of the mid–1900s) in the H&S text; this leaves room for further changes that not only incorporate a balance of gender–referencing personal pronouns, but also rewrite frames, like 21–67, that today offend readers through sexist content. We suggest rather few changes beyond our targeted terms. For example, in the last few sets we suggest changing "patient" to "client" in most instances (e.g., those instances not involving medical practices). We also resisted rephrasing parts of frames to eliminate currently awkward usages such as the adverb form of "added" and "subtracted," (a) because such rephrasing could alter the efficiency of the terminology conditioning across particular frames or their surrounding

[a] Direct correspondence regarding this article to shuler@comcast.net
[b] Professor Emeritus, SUNY–Canton, at ledoux@canton.edu

Key words: Programmed instruction, behaviorology education, natural science

frames, and (b) because directly conditioning those usages provides a more appropriate approach to reducing such awkwardness, especially in new repertoires.

Our suggestions here comprise what we consider as the minimum adjustments needed to make the H&S text fully compatible with an early 21st century behaviorology. Our suggestions mainly pursue a particular set of terminology changes, while also remaining sensitive to avoiding changes that would reduce the effectiveness of the appropriate conditioning inherent in the program, particularly in the frames surrounding each change. Ledoux (2014) provides one resource for the reasons for our suggested terminology adjustments.

Our original plan called for evaluating each set, frame by frame, for the most common terminological changes that would be necessary to update the terminology in the H&S text. This update involves changing from the terms that arose during the era when the text was written—near the end of the era when natural scientists of behavior, in TEAB, were still trying to change the discipline of psychology, in whose academic homes history had stuck them, into a natural science of behavior—to the terms needed to educate early 21st century majors in behaviorology. We anticipate the H&S text serving as the main text in an early course with behaviorology majors, particularly in a course designed to establish a well–conditioned familiarity with some of the basic terminology of this natural science discipline (see Ledoux, 2015).

These were the main terms for which we watched, and the alternatives we most likely would substitute (although some instances necessitated other, additional adjustments as appropriate):

• psychology/psychologist(s)/psychological (when denoting the natural science of behavior / natural scientist(s) of behavior / pertaining to…) TO
behaviorology/behaviorologist(s)/behaviorological

• psychologist(s) (as agentialist, or when the word need not actually denote a psychologist in the text) TO
professor (or …)

• positive/negative (reinforcer, etc.) TO
added/subtracted
(even though only the original H&S text seemed successful at conditioning the correct technical usage of positive/negative. Changing these in H&S makes [a] for consistency with other behaviorology texts in use, and [b] thus avoids a need to condition the newer terms later when the student encounters other behaviorology books; both of these considerations relate to all the terms/changes suggested here.)

• accidental (e.g., reinforcer, etc.)
TO coincidental

• discriminative/discrimination/discriminate
TO evocative/evocation/evoke

• emit/emitted TO
(a minimal but appropriate rephrasing substitution)

• learn/learning/learner TO
(a minimal but appropriate rephrasing substitution)

Emphasizing those terminology–changes, here are our suggested alterations to the front matter (by page number) followed by alterations to the frames (by frame number).☘

FRONT MATTER

p. vi, last paragraph, lines 6-7: *change* course in psychology emphasing the analysis of behavior *to* course in behaviorology emphasing the experimental analysis of behavior

p. vi, last paragraph, next to last line: *change* psychologists *to* professors

p. vii, first paragraph, lines 1-2: *remove* that substantial part of psychology which deals with

p. vii, first paragraph, line 10: *change* psychopharmacology *to* behavioral pharmacology

p. vii, first paragraph, line 11: *change* psychotherapy *to* therapy

p. ?: first page of the table of CONTENTS, Set 9: *change* Positive *to* Added *AND change* Negative *to* Subtracted

p. ?: first page of the table of CONTENTS, Set 14: *change* Accidental *to* Coincidental

p. ?: second page of the table of CONTENTS, Set 21: *change* Discrimination *to* Evocation

p. ?: last page of the table of CONTENTS, Set 52: *change* Psychotherapy *to* Therapy

PART I REFLEX BEHAVIOR

SET 1: Simple Reflexes [GOOD (i.e., no adjustments deemed necessary)]

SET 2: Conditioned Reflexes

In the first half of this Set (i.e., 2-4, 2-6, 2-8, 2-9, 2-11, and 2-12) H&S begins using the familiar "learning," "learn," and "learned," but then it fades these out, and we make adjustments for these terms in later Sets.

SET 3: Conditioned Reflexes (continued) [GOOD]

SET 4: Pavlov's Experiments [GOOD]

SET 5: Conditioned Reflexes (continued) [GOOD]

SET 6: Response Mechanisms

[Frame #] 6-21 *remove:* the organism's

PART II OPERANT CONDITIONING: ELEMENTARY CONCEPTS

SET 7: Introduction to Operant Conditioning

7-13 *remove* natural (as its inclusion begins conditioning a confounded limitation on what is natural)
7-14 *put quotes around* deliberately arranged *AND change* is *to* seems more
7-18 *change* be emitted *to* occur (*or to* happened *or to* …) [as "be emitted" conditions a misleading term]
7-19 *change* emit a response *to* respond (…) […]
7-23 *change* be emitted *to* occur …
7-25 *change* be emitted *to* occur
7-27 ***change*** "to be *emitted* rather than *elicited*" ***to*** "to *occur* rather than be *elicited*"

SET 8: The Standard Experimental Situation

p. 46, near the end of paragraph 1: ***change*** "it is said to be *emitted*" ***to*** "it is simply said to *occur*"

p. 46, paragraph 2, line 2: *change* emitting responses *to* responding

8-1 'emitted' (change as changed in Set 7)
8-2 *change* the pigeon will emit pecks *to* the pecking will occur
8-12 *change* emitting *to* occurrence of
8-14 *change* have been emitted but _____ *to* have happened but _____ _____ AND *change the answer from* not *to* not been
8-15 *change* is not emitted *to* does not occur
8-16 ***change*** "The response is *emitted*" ***to*** "The response *happens*" *AND* ***change*** "The response is not *emitted*" ***to*** "The response does not *happen*"
8-25 *change* psychologist *to* professor *AND change* when he emitted a faint "cooing" sound *to* when a faint "cooing" sound occurred
8-27 ***remove*** been ***AND in the answer change*** emitted (made) *to* occurred (happened)
8-28 *change* psychologist *to* professor *AND change* when he emitted "coos" *to* when he "cooed"

SET 9: Positive and Negative Reinforcement
Change title to **Added and Subtracted Reinforcement**

9-4 *change* positive *to* added *AND in answer change* negative *to* subtracted
9-5 *in answer, change* negative *to* subtracted *AND change* positive *to* added
9-6 *change* negative *to* subtracted
9-7 *in frame AND answer, change* negative *to* subtracted
9-8 *in frame AND answer, change* positive *to* added

9-9 *in answer, change* positive *to* added *AND change* negative *to* subtracted
9-10 *change* negative *to* subtracted
9-11 *in answer, change* positive *to* added
9-12 *change* positive *to* added *AND change* negative *to* subtracted
9-13 *change* When an infant emits the sound "da-da" *to* When the sounds "da-da" occur with an infant
9-20 *in answer, change* (negatively reinforced) *to* (subtractedly reinforced)

[Note: The adverb forms, positively and negatively, occur so seldomly that substituting addedly and subtractedly is but one acceptable alternative, and new students typically adapt well to such specialized forms. Another alternative would be to rephrase the wording to avoid the adverb forms; however, we found that such rephrasing would often overflow the space in a frame, as well as put the designed conditioning of the text at risk, so we declined this alternative.]

9-29 *change* are emitted *to* occur

SET 10: Basic Concepts Applied

10-2 *in answer, change* negative *to* subtracted
10-3 *twice, change* negative *to* subtracted
10-5 *in answer, change* positive *to* added
10-7 *change* is emitted *to* occurs
10-11 *remove* he _____ emits *AND change* music. *to* music occurs _____.
10-12 *remove* a man frequently _____ *AND change* music. *to* music frequently _____. *AND in answer, change* emits *to* occurs (happens)
10-13 *remove* he frequently _____ *AND change* golf. *to* golf frequently _____. *AND in answer, change* emits *to* occurs (happens)
10-14 *change* an individual's _____ of emitting *to* the _____ of
10-16 *change* emit the response *to* respond
10-18 *change* When a pigeon is reinforced for pecking a key, *to* When pecking a key is reinforced, *AND remove* is, *AND in the answer change* emitted *to* occurs (happens)
10-29 *remove* been *AND in the answer change* emitted *to* occurs (happens)
10-30 *change* emitted *to* occur *AND in answer, change* is not *to* does not
10-31 *change* is emitted *to* occurs
10-32 *change* to emit the response, a response is emitted *to* for the response to happen, a response occurs

SET 11: Conditioned Reinforcers

11-12 *change* is emitted *to* occurs
11-28 *change* you are *to* your behavior is
11-37 *change* has been emitted *to* occurs
11-41 *since it sounds unnecessarily agential, change* If the chimpanzee can no longer use tokens *to* If tokens no longer work
11-59 *change* behavior you don't want another person to emit *to* another person's behavior that you don't want to occur

PART III OPERANT CONDITIONING: PRECISE CONTINGENCIES

SET 12: The Cumulative Recorder

12-8 *change* were emitted *to* occurred
12-25 *change* the animal emitted about _____ responses between **a** and **b.** *to* about _____ responses occurred between **a** and **b.**

SET 13: Factors Affecting Speed of Conditioning

p. 78, paragraph 4 ("The Learning Curve"), lines 4-5: ***change*** a basic learning process. ***to*** "a basic learning process" rather than a basic conditioning process.

13-2 *in answer, change* (unlearned) *to* ("unlearned")
13-6 *change* pigeon is *to* pigeon's behavior is
13-13 *change* Pigeon A emitted the first peck *to* With pigeon A the first peck occurred
13-21 *change* learning *to* "learning"
13-29 *change* is emitted *to* occurs
13-37 *change* learns *to* "learns" *AND change* learning *to* conditioning
13-43 *change* learning *to* "learning" (i.e., conditioning)
13-44 *change* learning *to* "learning" (i.e., conditioning) *AND in the answer change* learning curve *to* "learning curve" (conditioning curve)
13-48 *change* learning process *to* "learning" process

SET 14 Accidental Contingencies and Superstitious Behavior
Change title to **Coincidental Contingencies and Superstitious Behavior**

14-7 *change* accidental *to* coincidental *AND in answer, change* accident *to* coincident
14-8 *change* accidental *to* coincidental
14-9 *in the answer, change* accidental *to* coincidental
14-10 *change* by accident *to* a coincidence
14-11 *change* accidentally *to* coincidentally
14-13 *change* accidental *to* coincidental *AND change* accidentally *to* coincidentally
14-14 *change* accidentally *to* coincidentally
14-15 *change* accidentally *to* coincidentally
14-16 *change* be emitted *to* occur
14-19 *change* accidental *to* coincidental *AND in answer change* accidental *to* coincidental
14-22 *change* accidental *to* coincidental
14-23 *change* accidental *to* coincidental
14-26 *in the answer change* accidental *to* coincidental
14-28 *change* accidental *to* coincidental
14-30 *change* accidental *to* coincidental
14-31 *change* accidental *to* coincidental *AND change* accidentally *to* coincidentally
14-32 *change* accidental *to* coincidental *AND change* "accidental *to* "coincidental
14-34 *in the answer change* negative *to* subtracted
14-35 *in the answer change* negative *to* subtracted
14-36 *change* (accidental or "natural"?) *to* (coincidental or "natural"?) *AND change* negative *to* subtracted *AND in the answer change* accidental *to* coincidental
14-37 *in the answer: change* accidental *to* coincidental *AND change* negative *to* subtracted
14-38 *change* accidental *to* coincidental
14-39 *change* is never emitted *to* does not occur
14-40 *change* likely that you will _____ (TT) the response for the first time *to* likely that the response will _____ for the first time *AND in answer change* emit *to* occur
14-41 *change* accidentally *to* coincidentally
14-42 *change* been emitted *to* occurred *AND change* has been (1) *to* has (1) *AND in the answer: change* emitted *to* occurred *AND change* accidental *to* coincidental
14-43 *change* Accidental *to* Coincidental
14-44 *in the answer change* accidental *to* coincidental
14-45 *in the answer change* accident(-al) *to* coincident(-al)
14-46 *change* by accident. *to* by coincidence.
14-47 *change* accidental *to* coincidental *AND change* accidentally *to* coincidentally
14-48 *change* a pigeon may reach *to* a pigeon's behavior may reach
14-49 *twice, change* accidentally *to* coincidentally
14-50 *twice, change* learner *to* "learner"
14-51 *change* learns *to* is conditioned

PART IV SHAPING

SET 15: Principles of Shaping New Behavior

p. 97, paragraph 1, line 2: *change* is emitted *to* occurs

p. 97, paragraph 1, line 4: *change* Condition the dog *to* Condition the dog's behavior

15-7 *change* In learning the high jump, you begin *to* In training the high jump, you begin conditioning
15-15 *change* The high jumper is reinforced *to* The high jumper's behavior is reinforced
15-18 *change* reinforce the dog for *to* reinforce the dog's behavior of
15-38 *change* In learning to bowl *to* In being conditioned to bowl
15-44 *change* learner *to* bowler

SET 16: Applications of Principles of Shaping

16-1 *change* Learning *to* The conditioning *AND change* learning *to* the conditioning
16-6 *change* Learning to say "ball" makes it easier for the child to learn to say "fall" *to* Conditioning that makes the child say "ball" makes conditioning to say "fall" easier
16-7 *change* learning *to* the conditioning of *AND change* learned. *to* conditioned.
16-8 Twice, *change* learns *to* is acquiring
16-19 *change* be emitted *to* occur
16-21 *change* are emitted *to* occur
16-27 *change* learning *to* conditioning

SET 17: Review: Test Covering Parts I–IV

17-4 ***change*** When a pigeon is reinforced for pecking a key, ***to*** When a pigeon's behavior of pecking a key is reinforced, ***AND change*** response is (3) ***to*** response (3) ***AND in the answer, change*** emitted ***to*** occurs
17-5 *in the answer, change* (1) negative (2) positive ***to*** (1) subtracted (2) added
17-7 ***change*** an individual's _____ of emitting certain types of behavior ***to*** the _____ of occurrence of certain types of an individual's behavior
17-9 *in the answer, change* accidental *to* coincidental
17-13 *change* is emitted without *to* occurs without *AND change* is not emitted in *to* does not occur in
17-15 ***change*** A psychologist fed a baby when he emitted "coos," but not when he cried. ***to*** A behaviorologist fed a baby when "coos" occurred, but not when crying occurred.
17-18 *in the answer, change* accidental *to* coincidental
17-32 *change* slow learner may *to* slow to condition organism may *AND change* faster learner. *to* faster to condition organism.
17-39 ***change*** Learning to say "ball" makes it easier for the child to learn to say "fall" ***to*** Conditioning that makes the child say "ball" makes conditioning to say "fall" easier

PART V INTERMITTENT REINFORCEMENT

SET 18: Schedules Defined; Fixed Interval Schedules

p. 117, paragraph 1, line 4: *change* been emitted *to* occured

18-36 ***change*** *discrimination* ***to*** *evocation*

SET 19: Variable Interval, Fixed Ratio, and Variable Ration Schedules

19-40 *change* were emitted *to* occurred
19-43 *change* are emitted *to* occur

SET 20: Schedules of Reinforcement: Summary and Review [GOOD]

PART VI STIMULUS CONTROL

SET 21: Stimulus Discrimination
Change title to **Stimulus Evocation**

p. 137, paragraph 1, line 1: *change* pigeon was *to* pigeon's key-pecking behavior was

p. 137, paragraph 4, line 4: *change* until the pigeon emitted 25 responses recorded in *to* until 25 key-peck responses were recorded in

21-12 ***change*** a *discriminative* stimulus (S^D) ***to*** an *evocative* stimulus (S^{Ev}) *AND in the answer change* S^D (discriminative stimulus) *to* S^{Ev} (evocative stimulus)
21-13 *change* S^D *to* S^{Ev}
21-14 *change* S^D *to* S^{Ev}
21-15 *change* S^D *to* S^{Ev}
21-16 *in the answer change* discriminative *to* evocative
21-24 *change* discrimination procedure
to evocation procedure
21-25 *in the answer change* $(S)^D$ *to* $(S)^{Ev}$
21-26 *change* S^D *to* S^{Ev}
21-27 *change* (S^D) *to* (S^{Ev})
21-28 *change* S^D *to* S^{Ev} *AND change* discrimination *to* evocation
21-29 *change* a discrimination *to* an evocation *AND in the answer change* S^D *to* S^{Ev}
21-30 *in the answer change* discrimina(-tion) *to* evoca(-tion)
21-31 *change* a discrimination *to* an evocation
21-34 *in the answer change* $(S)^D$ *to* $(S)^{Ev}$
21-35 *in the answer change* discrimination *to* evocation
21-36 *change* is emitted *to* occurs *AND change* S^D *to* S^{Ev} *AND in the answer change* discrimination *to* evocation
21-37 *change* Discrimination *to* Evocation
21-39 *change* then emit responses *to* then its responses will occur
21-46 *change* Discrimination *to* Evocation *AND in the answer change* discrimination *to* evocation
21-47 *in the answer change* discrimination *to* evocation
21-49 *change* A discrimination *to* An evocation
21-50 *change* discrimination *to* evocation
21-51 *change* discrimination *to* evocation *AND change* S^D *to* S^{Ev} *AND change* be emitted *to* occur
21-52 *change* S^D *to* S^{Ev} *AND change* if _____, *to* if it _____, *AND in the answer change* emitted *to* occurs

21-53 *change* discrimination *to* evocation *AND in the answer change* discriminative *to* evocative
21-54 *change* discrimination *to* evocation *AND change* a discriminative *to* an evocative
21-56 *change* a discriminative *to* an evocative
21-57 *change* discrimination *to* evocation *AND in the answer, change (twice)* emitted *to* occurring *AND change* $(S)^{D}$ *to* $(S)^{Ev}$
21-59 *change* a discriminative *to* an evocative *AND change* S^{D} *to* S^{Ev} *AND change* if (2) _____-ed. *to* if it (2)_____. *AND in the answer, change* emit(-ed) *to* occurs
21-60 *twice, change* S^{D} *to* S^{Ev}
21-61 *change* discrimination, *to* evocation, *AND change* S^{D}. *to* S^{Ev}.
21-63 *change* discrimination, *to* evocation, *AND change* S^{D}. *to* S^{Ev}.
21-65 *change* S^{D}s *to* S^{Ev}s *AND in the answer, change* $(S)^{D}$ *to* $(S)^{Ev}$
21-66 *in the answer change* S^{D} *to* S^{Ev}
21-68 *change* emitting *to* the occurrence of *AND in the answer change* S^{D} *to* S^{Ev}
21-69 *change* a discriminative *to* an evocative *AND change* S^{D} *to* S^{Ev} *AND change* if emitted. *to* if it occurs.
21-70 *change* a discriminative *to* an evocative *AND change* S^{D} *to* S^{Ev} *AND change* if emitted. *to* if it occurs.
21-71 *change* are discriminative (1) _____, *to* are evocative (1) _____, *AND change* are discriminative (2) _____. *to* are evoked (2) _____.
21-72 *change* learning *to* being conditioned *AND change* his (1) _____-tive response *to* his (1) _____ response *AND in the answer change* discrimina(-tive) *to* evoked
21-73 *change* discrimination *to* evocation *AND in the answer change* S^{D} *to* S^{Ev}
21-74 *in the answer change* S^{D} *to* S^{Ev}
21-75 *change* a discriminative *to* an evoked *AND change* S^{D} *to* S^{Ev}

SET 22: Stimulus Generalization

p. 149, paragraph 1, line 2: ***change*** a *discriminative stimulus* (S^{D}). ***to*** an *evocative stimulus* (S^{Ev}).

p. 149 paragraph 1, line 3: *change* be emitted *to* occur

p. 149 paragraph 1, Line 4: *change* S^{D} *to* S^{Ev}

p. 149 paragraph 3, line 8: *change* The responses emitted by the pigeon *to* The pigeon's responses that occur

22-1 *change* The pigeon is on *to* The pigeon's behavior is on
22-5 *change* be emitted *to* occur
22-10 *change* been emitted *to* occurred
22-13 *change* was emitted *to* occurred
22-14 *change* were emitted *to* occurred
22-19 *change* emitted *to* occurring
22-23 *change* were emitted. *to* occurred.
22-33 *remove* by the learner
22-35 *change* discrimination *to* evocation *AND change* can make *to* becomes affected by *AND in the answer change* discriminations *to* evocations
22-37 *change* emits *to* says *AND in the answer change* discrimination *to* evocation
22-38 *in the answer change* discrimination *to* evocation
22-39 *in the answer change* $(S)^{D}$ *to* $(S)^{Ev}$
22-41 *in the answer change* discrimination(s) *to* evocation(s)
22-42 ***change*** An organism may emit the same response to ***to*** The same response of an organism may occur due to
22-43 *in the answer change* S^{D} *to* S^{Ev}
22-44 *change* discriminations *to* evocations
22-47 *in the answer change* S^{D} *to* S^{Ev}
22-48 *in the answer change* S^{D} *to* S^{Ev}
22-50 *in the answer change* S^{D} *to* S^{Ev}
22-51 *in the answer change* discrimination (acceptable S^{D}) *to* evocation (acceptable S^{Ev})
22-53 *change* S^{D}s *to* S^{Ev}s *AND change* if emitted *to* if they occur
22-55 *change* discriminative *to* evocative *AND change* S^{D} *to* S^{Ev} *AND change* if emitted *to* if it happens
22-66 *change* S^{D}s *to* S^{Ev}s
22-67 *change* S^{D} *to* S^{Ev}

SET 23: Chaining

23-2 *in the answer change* discriminative *to* evocative
23-5 *change* S^{D} *to* S^{Ev} *AND in the answer change* S^{D} (discriminative stimulus) *to* S^{Ev} (evocative stimulus)
23-6 *change* S^{D} *to* S^{Ev}
23-7 *in the answer change* S^{D} *to* S^{Ev}
23-8 *change* S^{D} *to* S^{Ev}
23-9 *in the answer change* discriminative stimulus (S^{D}) *to* evocative stimulus (S^{Ev})
23-10 *twice, change* S^{D} *to* S^{Ev}
23-11 *change* S^{D} *to* S^{Ev}
23-12 *change* discriminative *to* evocative
23-14 *in the answer change* S^{D} *to* S^{Ev}

23-15 *in the answer change* discriminative (S^D) *to* evocative (S^{Ev})
23-16 *in the answer change* S^D *to* S^{Ev}
23-17 *change* S^D *to* S^{Ev}
23-18 *change* S^D *to* S^{Ev}
23-22 *in the answer change* S^D *to* S^{Ev}
23-23 *change* S^D *to* S^{Ev}
23-24 *change* S^D *to* S^{Ev}
23-25 *change* S^D *to* S^{Ev}
23-26 *in the answer change* S^D *to* S^{Ev}
23-27 *in the answer change* S^D *to* S^{Ev}
23-28 *change* S^D *to* S^{Ev}
23-29 *in the answer change* S^D *to* S^{Ev}
23-30 *change* S^D *to* S^{Ev}
23-31 *in the answer change* S^D *to* S^{Ev}
23-33 *three (3) times, change* S^D *to* S^{Ev}
23-34 *change* S^D *to* S^{Ev} *AND in the answer change* S^D *to* S^{Ev}

SET 24: Shaping Continuous Repertoires

p. 167, paragraph 1, line 4: *change* discriminative *to* evocative

p. 167, paragraph 3, line 6: ***change*** Learning ***to*** The behaviors determined by conditioning ***AND change*** (1) discriminating ***to*** (1) distinguishing

p. 167, paragraph 3, line 8: *change* (2) discriminating *to* (2) distinguishing

24-7 ***change*** a child for making a ***to*** a child's
24-15 *change* the child *to* the child's behavior
24-17 ***change*** When a child is learning to "draw from copy," ***to*** When a child's behavior of "drawing from copy" is being conditioned
24-25 ***change*** A child can be conditioned to call two visual patterns "like" or "unlike," quite apart from learning to draw. ***to*** A child's *behavior* of calling two visual patterns "like" or "unlike" can be conditioned quite apart from her drawing behavior.
24-27 *in the answer change* S^D *to* S^{Ev}
24-28 *change* S^D *to* S^{Ev}
24-33 ***change*** The better a child can discriminate "like" patterns, ***to*** The better a child's behavior is evoked by "like" patterns,
24-35 *change* discriminate *to* distinguish
24-36 ***change*** who cannot discriminate ***to*** whose behavior is not evoked by ***AND change*** The painter has not developed an adequate _____. ***to*** The painter's behavior is not under precise _____. ***AND in the answer change*** discrimination ***to*** evocations
24-37 *change* unless he can discriminate *to* unless his behavior is evoked by
24-38 ***change*** Such a person has not acquired adequate _____ of tones. ***to*** Such a person's behavior is not under adequate _____ by tones ***AND in the answer change*** discrimination ***to*** evocation
24-39 ***change*** he cannot (1) _____ differences ***to*** his behaviors are not (1) _____ by differences ***AND in the answer change*** discriminate ***to*** evoked
24-40 ***change*** they cannot _____ between ***to*** their behaviors are not _____ by the differences between ***AND in the answer change*** discriminate ***to*** evoked
24-41 ***change*** After the child has learned to discriminate between ***to*** After the child's behavior has come to be evoked by the differences between

SET 25: Discrete and Continuous Repertoires

25-7 ***change*** when we can discriminate very fine differences between adjacent stimuli on the continuum. ***to*** when very fine differences between adjacent stimuli on the continuum evoke our behavior.
25-15 *in the answer change* (S^Ds) *to* (S^{Ev}s)
25-37 ***change*** Someone just learning to drive ***to*** Someone whose driving behavior has just begun being shaped

PART VII DEPRIVATION

SET 26: Basic Concepts

p. 181, paragraph 2, line3: *change* has been reinforced *to* its behavior has been reinforced

26-18 ***change*** A soldier who is both incapacitated by wounds and dehydrated by loss of blood emits ***to*** For a soldier, incapacitation by wounds and dehydration by loss of blood evoke

SET 27: Generalized Reinforcers [GOOD]

SET 28: Feeding Cycles

28-1 *change* The mice emit *to* For the mice, contingencies induce

SET 29: Review: Test Covering Parts V–VII

29-1 ***change*** winetaster can make very fine (1) _____. ***to*** winetaster's behavior is under the control of very fine (1) _____. ***AND in the answer change*** discriminations ***to*** evocations
29-7 *in the answer change* S^D *to* S^{Ev}
29-16 ***change*** An organism may emit the same response ***to*** The same response of an organism may occur
29-25 *change* discrimination *to* evocation *AND in the answer change* S^D *to* S^{Ev}
29-28 *change a* discrimination *to* an evocation

PART VIII EMOTION I

SET 30: Activation Syndrome

30-28 ***change*** Psychosomatic ***to*** So called psychosomatic ***AND change*** of psychosomatic ***to*** of these

SET 31: Predispositions in Emotions

31-1 ***change*** An animal deprived of food is predisposed to emit behavior ***to*** Deprivation of food predisposes the occurrence of behavior ***AND change*** A *frightened* animal is _____ to emit behavior ***to*** *Frightening* stimuli _____ the occurrence of behavior ***AND in the answer change*** predisposed ***to*** predispose
31-3 ***change*** A *hungry* animal can ***to*** A *hungry* animal's behavior can ***AND change*** a *frightened* animal's behavior can ***to*** a *frightened* animal can
31-5 *change* of emission *to* of occurrence
31-6 *change* positively *to* addedly
31-7 *change* We ourselves are *to* Our own behavior is
31-10 *change* of emission *to* of occurrence
31-11 ***change*** The angry man is _____ to emit certain operants rather than others. ***to*** For the angry man, certain operants rather than others are _____ to occur.
31-14 *in the answer change* negative *to* subtracted
31-31 ***change*** no cigarettes ***to*** no snacks ***AND change*** in pockets, cigarette boxes, etc., ***to*** in the pantry, cupboards, etc., ***AND change*** of cigarettes. ***to*** of snacks.

PART IX AVOIDANCE AND ESCAPE BEHAVIOR

SET 32: Basic Concepts

32-1 *in the answer: change* positive *to* added *AND change* negative *to* subtracted
32-2 *in the answer change* negative *to* subtracted
32-3 *change* negative *to* subtracted
32-5 *change* negative *to* subtracted *AND in the answer change* negative *to* subtracted
32-6 *change* positive *to* added
32-8 *change* positive *to* added
32-9 *change* negative *to* subtracted
32-12 *in the answer change* negative *to* subtracted
32-14 *twice, change* negative *to* subtracted
32-15 *change* Negative *to* Subtracted *AND change* negative *to* subtracted *AND, twice, change* positive *to* added
32-16 *change* positive *to* added
32-17 *in the answer change* negative *to* subtracted
32-18 ***change*** is emitted ***to*** occurs ***AND change*** learns ***to*** is conditioned
32-20 *change* learns *to* is conditioned
32-22 ***change*** it has not yet acquired behavior which will _____ the shock. ***to*** behavior which will _____ the shock has not yet been conditioned.
32-23 ***change*** the organism to emit escape behavior. ***to*** escape behavior to occur.
32-25 *change* negative *to* subtracted
32-29 *change* negative *to* subtracted
32-31 *change* negative *to* subtracted
32-32 *change* negative *to* subtracted
32-33 *change* negative *to* subtracted
32-37 *in the answer change* negative *to* subtracted

SET 33: Analysis of Examples of Avoidance and Escape

33-1 *in the answer change* negative *to* subtracted
33-2 *in the answer change* negative *to* subtracted
33-4 *in the answer change* negative *to* subtracted'
33-6 *in the answer change* negative *to* subtracted
33-9 *change* negative *to* subtracted
33-13 *change* is emitted *to* occurs
33-18 *in the answer change* negative *to* subtracted
33-22 *in the answer change* negative *to* subtracted
33-23 *in the answer change* positive *to* added
33-27 *change* a discriminative *to* an evocative *AND in the answer change* $(S)^{D}$ *to* $(S)^{Ev}$
33-28 *change* positive *to* added
33-29 *change* S^{D} *to* S^{Ev}
33-30 *in the answer change* negative *to* subtracted

SET 34: Avoidance Experiments

p. 229, paragraph 1, line 4: ***change*** it fails to emit a response within ***to*** a response fails to occur within

p. 229, paragraph 2, line 2: *change* S^{D} *to* S^{Ev}

34-6 *in the answer change* negative *to* subtracted
34-7 ***change*** Many responses emitted by the animal ***to*** Many of the animal's responses
34-11 *change* positive *to* added
34-23 ***change*** responses emitted during ***to*** responses occurring during

PART X EMOTION II

SET 35: Experiments on Anxiety

p. 235 paragraph 1, line 4: *change* rat is reinforced *to* rat's behavior is reinforced

35-15 *change* positive *to* added

SET 36: Emotions as Reinforcing and Aversive Conditions

36-1 *change* the reader or viewer by *to* the reader's or viewer's behavior by
36-4 *change* psychiatrist *to* therapist
36-5 *in the answer: change* positive *to* added *AND change* negative *to* subtracted
36-6 ***change*** If a timid person forces himself ***to*** If conditions compel a timid person
36-9 *in the answer change* negative *to* subtracted
36-14 *in the answer change* negative *to* subtracted
36-21 ***change*** Skilled behavior learned while one is calm ***to*** Skilled behavior, conditioned while one is calm,

PART XI PUNISHMENT

SET 37: Basic Concepts

p. 245, in the box: ***change*** Positive ***to*** Added ***AND change*** Negative ***to*** Subtracted ***AND change*** positive ***to*** added ***AND change*** negative ***to*** subtracted

37-3 ***twice*** *change* positive *to* added *AND* ***twice*** *change* negative *to* subtracted
37-4 *change* positive *to* added *AND change* negative *to* subtracted
37-5 *change* positive *to* added *AND change* negative *to* subtracted
37-6 *in the answer change* negative *to* subtracted
37-7 *change* negative *to* subtracted
37-8 *in the answer change* positive *to* added
37-9 *change* positive *to* added
37-10 *change* positive *to* added *AND change* negative *to* subtracted
37-13 *in the answer change* positive *to* added *AND change* negative *to* subtracted
37-15 *twice change* positive *to* added
37-17 **ADD:** [Later Developments changed this]
37-18 *twice change* S^{D} *to* S^{Ev}
37-19 *twice change* S^{D} *to* S^{Ev}
37-20 *twice change* S^{D} *to* S^{Ev}
37-21 *change* S^{D} *to* S^{Ev}
37-21 *in the answer change* $(S)^{D}$ *to* $(S)^{Ev}$
37-22 *change* positive *to* added
37-28 *in the answer change* negative *to* subtracted
37-30 *change* positively *to* addedly
37-32 *in the answer change* accident(-al) *to* coincident(-al)

SET 38: Effects of Punishment During Extinction of Reinforce Behavior

p. 251, paragraph "(A)": ***change*** Eight rats were reinforced with food on a fixed-interval schedule for pressing a lever. ***to*** The lever pressing of eight rats was reinforced with food on a fixed-interval schedule.

38-1 *in the answer change* positive *to* added
38-3 ***change*** one group of four rats was _____ (TT) for each lever pressing response. ***to*** each lever pressing response of one group of four rats was _____ (TT).
38-12 *change* emitted *to* occurring
38-20 *change* be emitted *to* occur

SET 39: Additional Effects of Punishment Functions of the Aversive Stimulus

39-5 *change* positively *to* addedly *AND in the answer change* negative *to* subtracted
39-6 *change* positively *to* addedly
39-13 *change* are emitted *to* occurs
39-20 *change* negative *to* subtracted
39-21 *change* be emitted *to* occur
39-23 *in the answer* ***remove*** be emitted
39-24 *change* been emitted *to* occurred

SET 40: Effects of Continuous Punishment

p. 264, paragraph "(J)": ***change*** A pigeon was reinforced ***to*** A pigeon's key-pecking was reinforced

40-38 *change* positive *to* added
40-39 *change* positive *to* added

[Note: Frame 40-5 *already says* added punishment.]

SET 41: Review: Test Covering Parts VIII – XI

41-5 *change* positive *to* added
41-7 *change* be emitted *to* occur
41-8 ***change*** A pigeon reinforced with food for pecking a key ***to*** A pigeon for which key-pecking responses were reinforced with food ***AND change*** S^D ***to*** S^{Ev}
41-9 ***change*** person forces himself ***to*** person's contingencies force him
41-10 *change* positive *to* added
41-15 ***twice*** *change* positive *to* added *AND* ***twice*** *change* negative *to* subtracted
41-19 *in the answer change* negative *to* subtracted
41-20 *change* is emitted *to* occurs

PART XII SCIENTIFIC ANALYSIS & THE INTERPRETATION OF COMPLEX CASES

SET 42: Goals and techniques of Science

42-7 *twice change* spontaneous *to* "spontaneous"

SET 43: Multiple Effects

43-3 *in the answer change* S^Ds *to* S^{Ev}s
43-5 *change* S^Ds *to* S^{Ev}s
43-6 *change* discriminative *to* evocative
43-7 *in the answer change* S^Ds *to* S^{Ev}s
43-8 *twice, change* S^D *to* S^{Ev}
43-11 *change* positive *to* added
43-15 *change* S^D *to* S^{Ev}
43-16 *change* S^Ds *to* S^{Ev}s
43-20 *change* S^D *to* S^{Ev}
43-26 *change* positive *to* added

SET 44: Multiple Causes and Conflicting Responses

44-6 *change* S^Ds *to* S^{Ev}s
44-7 *in the answer change* S^Ds *to* S^{Ev}s
44-10 *in the answer change* S^Ds *to* S^{Ev}s
44-11 *change* S^D *to* S^{Ev}
44-12 *in the answer change* S^D *to* S^{Ev}
44-14 *change* be emitted *to* occur
44-16 *change* positive *to* added
44-17 *change* negative *to* subtracted
44-19 *change* positive *to* added *AND change* negative *to* subtracted
44-26 *change* when the act of beginning to execute a response *to* when the beginning of a response
44-28 *change* to decide about *to* conclude *AND change* tentatively decide *to* tentatively move

SET 45: A Problem in Behavioral Engineering

45-15 *in the answer change* S^D *to* S^{Ev}
45-16 *change* discrimination *to* evocation
45-19 *change* positive *to* added
45-21 *in the answer change* S^D *to* S^{Ev}
45-22 *in the answer change* $(S)^D$ *to* $(S)^{Ev}$
45-23 *change* S^D *to* S^{Ev}
45-23 *in the answer: change* positive *to* added *AND change* negative *to* subtracted

45-26 *in the answer change* accidental *to* coincidental
45-29 *in the answer change* $(S)^{D}$ *to* $(S)^{Ev}$
45-30 *in the answer change* discrimination *to* evocation
45-31 *change* discrimination *to* evocation
45-32 *change* by using *to* through *AND in the answer change* negative *to* subtracted

PART XIII SELF-CONTROL

SET 46: Analysis of Voluntary and Involuntary Behavior (GOOD)

SET 47: Techniques of Self-Control

[Note: Throughout this Set, "positive" and "negative" are correctly used with their traditional connotations of "good" and "bad" respectively, rather than in their technical sense of "presenting" and "withdrawing" stimuli respectively; thus they should not be changed in this set.]

47-5 *change* S^{D} *to* S^{Ev}
47-24 *in the answer change* S^{D} *to* S^{Ev}

PART XIV INTERPRETATION OF PERSONALITY

SET 48: Inadequate Self-knowledge

48-1 *in the answer remove* learned
48-3 *in the answer change* S^{D}s *to* S^{Ev}s
48-4 *change* S^{D}s *to* S^{Ev}s *AND in the answer change* S^{D}s *to* S^{Ev}s
48-5 *change* Discrimination *to* Evocation *AND change* S^{D}s *to* S^{Ev}s
48-6 *change* unlearned *to* unconditioned
48-7 *change* emitted *to* occurring *AND in the answer change* S^{D}s *to* S^{Ev}s
48-13 *in the answer change* S^{D}s *to* S^{Ev}s
48-14 *change* S^{D}s *to* S^{Ev}s
48-15 *change* learned *to* been conditioned
48-30 *change* is seldom *to* seldom *AND in the answer change* emitted *to* occurs

SET 49: Rationalization

49-1 *in the answer remove (*negatively reinforcing)
49-4 *change* child for eating *to* child's behavior of eating *AND in the answer change* S^{D}s *to* S^{Ev}s
49-5 ***change*** we have _____ a response which ***to*** a response has _____ which ***AND in the answer change*** emitted ***to*** occurred
49-8 *change* is emitted *to* occurs

SET 50: Drug Addiction

50-1 *in the answer change* negative *to* subtracted
50-2 *in the answer change* positive *to* added
50-10 *change* they may then emit the punished behavior, *to* the punished behavior may then occur
50-13 ***change*** said to be (1)_____-ly reinforced. ***to*** said to result from (1) _____ reinforcement. ***AND change*** is (2)_____-ly reinforced. ***to*** is a result of (2) _____ reinforcement. ***AND in the answer: change*** negative(-ly) ***to*** subtracted ***AND change*** positive(-ly) ***to*** added
50-14 ***change*** engages in positively reinforced behavior ***to*** engages in behavior resulting from added reinforcement
50-17 *in the answer remove* (negative reinforcers)
50-19 *change* negative *to* subtracted

SET 51: Aggressiveness, Withdrawal, and Reaction Formation

51-11 *in the answer: change* positive *to* added *AND change* negative *to* subtracted
51-14 *in the answer change* negative *to* subtracted
51-24 ***change*** a person is * * * likely to emit that type of behavior. ***to*** such behavior is * * * likely to occur.
51-25 *in the answer change* S^{D}s *to* S^{Ev}s
51-26 *in the answer change* S^{D}s *to* S^{Ev}s
51-27 *change* S^{D}s *to* S^{Ev}s
51-28 *in the answer change* S^{D}s *to* S^{Ev}s

SET 52: Psychotherapy
Change title to **Therapy**

52-5 *change* emitted *to* occurring
52-6 *change* is emitted *to* occurs
52-7 *twice, change* patient *to* client
52-9 *change* psychotherapy *to* therapy *AND change* patient *to* client
52-10 ***change*** patient's ***to*** client's ***AND change*** The patient therefore emits very _____ punishable behavior. ***to*** For the client, therefore, very _____ punishable behavior occurs.
52-11 *change* patient *to* client
52-12 *change* is emitted *to* occurs

52-13 *change* patient *to* client
52-14 ***change*** patient ***to*** client ***AND change*** because he is about to emit (2) _____ verbal behavior. ***to*** because (2) _____ verbal behavior is about to occur.
52-15 *change* is emitted *to* occurs *AND change* patient *to* client
52-16 ***change*** patient ***to*** client ***AND change*** induce the patient to emit the behavior which continues to be ***to*** induce the client behavior which continues to be
52-17 *change* patient *to* client
52-18 *change* patient *to* client
52-19 *change* accidentally *to* coincidentally
52-21 *change* Emitting the same response *to* The same response occurring
52-24 *change* patient *to* client
52-25 *change* psychotherapy *to* therapy
52-27 *change* therapists *to* psychiatrists
52-28 *change* therapist *to* psychiatrist

SET 53: Review: Test Covering Parts XII – XIV

53-3 *in the answer change* S^{D}s *to* S^{Ev}s
53-11 *change* psychotherapy *to* therapy *AND change* patient *to* client
53-17 *change* patient's *to* client's
53-21 *change* psychotherapy *to* therapy

References

Fraley, L. E. & Ledoux, S. F. (1992/2015). Origin, status, and mission of behaviorology. In S. F. Ledoux. (2015). *Origins and Components of Behaviorology—Third Edition* (pp. 33–169). Ottawa, Canada: BehaveTech Publishing.

Holland, J. G. & Skinner, B. F. (1961). *The Analysis of Behavior.* New York: McGraw–Hill.

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

Ledoux, S. F. (2015). Curricular courses and resources after 25 years (1990–2015). In S. F. Ledoux. *Origins and Components of Behaviorology—Third Edition* (pp. 314–326). Ottawa, Canada: BehaveTech Publishing.