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Focus: Textbooks in the Sciences

## **Playing the Game: Psychology Textbooks Speak Out about Love**

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### **ABSTRACT**

Starting in 1958, Harry Harlow published numerous research papers analyzing the emotional and social development of rhesus monkeys. This essay examines the presentation of Harlow's work in introductory psychology textbooks from 1958 to 1975, focusing on whether the textbooks erased the process of research, presented results without hedging, and provided a uniform account of Harlow's work and results. It argues that many textbooks were not passive vehicles of knowledge transmission; instead, they played a role similar to articles of meta-analysis and literature reviews.

### **INTRODUCTION: JUST FOR SHOW?**

A STANDARD VIEW OF SCIENTIFIC TEXTBOOKS sees them as the prêt-à-porter version of the haute couture research article. As the passive receptacles of knowledge already accepted by a scientific community, they convey scientific results without modifications. This vision derives to a great extent from the influential framework offered by Thomas Kuhn, wherein textbooks in the natural sciences serve as a means for the transmission of paradigmatic views and the introduction of practical and pedagogical exemplars. In Kuhn's view, science textbooks “expound the body of accepted theory, illustrate many or all of its successful applications, and compare these applications with exemplary

observations and experiments.”<sup>1</sup> Textbooks play a central role in introducing students to the normal science of a period, but they are not instruments of scientific debate or tools of knowledge making. If anything, a knowledge claim presented in a textbook marks the closure of scientific debate about a theory or viewpoint.

As a result, science textbooks at a given level of study in a field are practically uniform, with hardly any variation in their content: “in the sciences different textbooks display different subject matters rather than, as in the humanities and many social sciences, exemplifying different approaches to a single problem field. Even books that compete for adoption in a single science course differ mainly in level and pedagogical detail, not in substance or conceptual structure.” In Kuhn's view, by presenting conflicting scientific views in journal articles but not in textbooks, scientists help establish a unified front, a consistent picture of the science in one discipline.<sup>2</sup>

More recent work in the sociology of science that focuses on analyzing scientific texts also supports this view about the knowledge claims in textbooks. For example, in their classic study *Laboratory Life*, Bruno Latour and Steve Woolgar propose that scientific discourse includes a hierarchy of different types of statements, based on the decreasing order of certainty they convey. Latour and Woolgar argue that textbooks “contain a large number of sentences with the stylistic form: A has a certain relationship with B.” These statements make a relationship explicit, but in a way that appears uncontroversial. In agreement, Gregory A. Myers asserts that, whereas in scientific journals most new claims are hedged, textbooks use hedging more rarely and often present “claims as accredited facts that need no hedging.” For these authors, the language in textbooks reflects and contributes to the view that textbooks present accepted results as autonomous facts. In a similar vein, Ian Hacking has also noted that textbooks “effectively delete the process of discovery.”<sup>3</sup>

But do these views apply to all sciences? Although some authors talk about textbooks in general and Kuhn himself often talked about “science” when he was referring to physics and chemistry, Kuhn specified that his views about textbooks applied only to the natural sciences. As in the quotation above, he acknowledged that the social sciences are different. Recent scholarship on textbooks in the natural sciences has already shown that Kuhn's views were in many ways inadequate. Although we still need more studies of social science textbooks, some recent work in the history of psychology points to

differences between this discipline and the natural sciences.<sup>4</sup> It may well turn out that Kuhn's admittedly sketchy views about textbooks in the social sciences are more perceptive than we have acknowledged, at least with respect to their inclusion of a greater diversity of viewpoints and more extensive methodological discussions.

In this essay I address the question of whether psychology textbooks merely serve as expository showcases for the consensus of the scientific community by examining the presentation of Harry Harlow's work in introductory psychology textbooks from 1958 to 1975. Starting in 1958, Harlow and his team at the University of Wisconsin published numerous research papers analyzing the emotional and social development of rhesus monkeys. Harlow's work with infant rhesus monkeys appeared in one textbook in 1962 and then became more prevalent in the mid 1960s. By the end of the decade, his work appeared in most introductory psychology textbooks. This essay investigates whether the textbooks erased the process of Harlow's research, presented results from his research without hedging, and provided a uniform account of his work and results. Contrary to the standard view of textbooks as passive vehicles of knowledge transmission, I show that these psychology textbooks actively engaged in discussing the significance of Harlow's experiments. I propose that many textbooks played a role similar to articles of meta-analysis and literature reviews.

### **MONKEY LOVE: FROM LAB TO TEXTBOOKS**

In 1958, the University of Wisconsin psychologist Harry Harlow delivered his presidential address on "The Nature of Love" to the American Psychological Association. After working on learning in rhesus monkeys, Harlow decided to study their emotions. In postwar America, psychologists and psychoanalysts engaged in intense discussions regarding children's emotional development.<sup>5</sup> Unable, for obvious reasons, to experiment with children, Harlow worked with monkeys to address one of the key questions in this area: Why do infants become attached to their mothers?

Harlow's team raised infant monkeys with two types of artificial "mother-machines": one made of terry cloth, the other made of wire. In some experiments, researchers attached a milk bottle to the wire mother. In other experiments, they attached the milk bottle to the cloth mother. In his presidential address, Harlow reported that the infant monkeys spent most of their time with the cloth mother, regardless of which mother provided them with food. For Harlow, these results went against prevalent

contemporary psychoanalytic and psychological theories that claimed that human infants develop an emotional attachment to their mothers because mothers provide them with nourishment.

Harlow's team then designed the strange room, an experimental setup to test the strength of the mother–infant attachment. Harlow introduced each of the infant monkeys raised with artificial mothers into a room and presented them with objects like toys known to elicit fear or curiosity. In the presence of the wire mother, the infant monkeys crouched with fear in the corner of the room. But when the cloth mother was present, these infant monkeys embraced her, seemed more relaxed, and then, slowly, ventured away from her to explore the strange object, probing it and returning to the cloth mother from time to time, as if to regain security.

From his experiments, Harlow concluded that infant rhesus monkeys need “contact comfort.” He held that these results also applied to human infants. Furthermore, Harlow said that they had important social implications as well. Since infants seemed to need only a soft cuddly object to embrace, mother's milk, and even mothers, appeared not to be necessary for child rearing. Fathers could also bring up infants, Harlow boldly announced.<sup>6</sup>

When the infant monkeys raised with surrogate mothers grew up, however, they did not seem well adjusted for social life with other monkeys. Harlow published his new findings in 1961, showing that these monkeys did not interact with their peers and failed to perform sex. The males sometimes tried to copulate with the wrong parts of a female's body (like her head or side), and the females often sat down, unreceptive to the males' advances. After Harlow's team artificially inseminated the females, they gave birth but then rejected and hit their infants. Thus, the monkeys raised with artificial mothers were unable to engage in two behaviors that were widely taken to be “natural”: sex and maternal care.<sup>7</sup>

In another series of experiments, Harlow raised infant monkeys with peers but without mothers. In publications starting in 1962, Harlow advanced the notion that monkeys raised only with peers develop fewer social handicaps than those raised only with artificial mothers. Playing with peers, infant monkeys learn the skills that will allow them to behave socially in their adult lives. Real mothers, in fact, push their infants away from them at a certain point, so that the infants are forced to interact with other infants. Harlow concluded that mothers, even real ones, are neither sufficient nor absolutely necessary.

In 1966 he published a follow-up report on the behavior of the first-time mothers who had mistreated their infants. To the surprise of the entire research team, these previously abusive mothers acted like good mothers to their second or third infants.<sup>8</sup>

How did this sequence of experimental reports travel from the lab and research articles to the textbooks? I have examined forty-three introductory psychology textbooks, texts designed to introduce the discipline to undergraduate students in North American universities. These books were written by thirty-four different authors from a wide range of universities. In seven cases I included two different editions of the same book, and in one case the list includes three different editions of one book (for a list of the textbooks examined, see the Appendix).<sup>9</sup> I analyzed the number of times they mention the different results of Harlow's experiments and the presence or absence of hedging in reporting these results. For ease of reference, I have summarized the results in [Table 1](#).

**Table 1**

DATES OF PUBLICATION OF HARLOW'S RESULTS

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1958: Monkeys prefer cloth mother to wire mother with milk (contact comfort).  
 1961: Monkeys are unable to mate; artificially inseminated females are abusive mothers.  
 1962: There are more aggressive than mothers for monkeys' social development.  
 1966: Abusive mothers become good mothers to their second infants.

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REPORTS OF HARLOW'S WORK IN TEXTBOOKS

	Number	Sample size	Percentage
Mention of Harlow's experiments (1961-1975a)	36	43	88
Hedging (1961-1975a)	11	43	26
Mention of positive effect of peers (1962-1975a)	13	34	38
Mention of maternal mothers (1966-1975a)	9	28	31

\* Textbooks published less than three years after the publication of Harlow's initial experiments (Harry F. Harlow, "The Nature of Love," *American Psychologist*, 1958, 13:473-485) have not been considered.  
 † Textbooks published less than three years after the publication of results on effect of early experience with peers (Harry F. Harlow, "Affiliational Systems of Monkeys, Socializing Relations between Mothers and Young," in *Proceedings of the International Congress on Comparative Ethology* [New York: Science Publishers, 1962]) have not been considered.  
 ‡ Textbooks published less than three years after the publication of results showing adequate maternal behavior of nonabusive mothers to second and later infants (G. F. Harlow, M. R. Harlow, R. G. Dukelow, and G. E. Selig, "Maternal Behavior of Rhesus Monkeys (Genus of *Macaca*) and Peer Association in Infancy," *Proceedings of the American Psychological Society*, 1966, 130:56-60) have not been considered.

Table 1.

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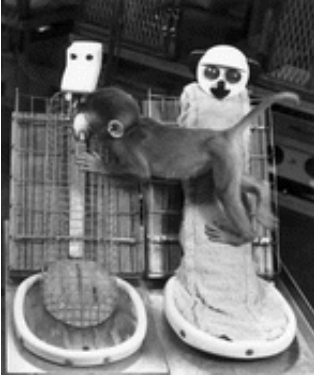
It is striking, first, that textbooks did not regularly include Harlow's experiments until the mid 1960s, because after his 1958 APA presentation his work received extensive coverage both in the psychology literature and in the popular press. It is difficult to assess whether this gap reflects the standard period before work deemed important makes it into textbooks or whether textbook authors perceived Harlow's work as more significant after his 1961 published results about the monkeys' inability to engage in social interactions, including sex and maternal care. It seems plausible to assume that the latter played a role, since these results showing the inability of monkeys to behave in ways often assumed to be instinctive and to require little or no experience were quite shocking to the psychological community. However, once Harlow's experiments became part of introductory psychology textbooks in the mid 1960s, they quickly acquired the status of canonical elements.

In the following sections, I have analyzed three aspects of the presentation of Harlow's results in these textbooks: the presence or absence of accounts of the scientific process leading to the results, their presentation as “facts” with or without hedging, and the existence of uniformity or diversity in the interpretation of those results.

### Results without Process?

Almost none of these texts erased the context of research, though they varied in the extent of their descriptions, which ranged from basic summaries to detailed accounts. Nearly all described the experimental settings and procedures. One might think that early presentations of Harlow's work would include a more extensive description of his experiments because they were new. However, textbooks' descriptions did not become shorter or less explicit over the years. Regarding the manner of presentation, two points deserve special mention: the use of images, and the contrast between the description of the experimental and the observational studies.

Almost all textbooks included several pictures of Harlow's experimental setup. Many of them incorporated pictures of the monkeys with the surrogate mothers, the monkeys in the strange room, and the abusive mothers or the monkeys unable to copulate. No doubt this is in part due to the striking character of those pictures. Martin Skinner has noted that pictures became prevalent in psychology textbooks in the 1960s—in his view, this was mainly to make the texts more attractive.<sup>10</sup> Harlow's pictures are disturbing and attention grabbing, thereby enhancing the attractiveness of the textbooks. But in this case, I think, the pictures also served in a graphic way to illustrate the experimental setups and provide evidence for the experimental results. This may have been considered important given the surprising nature of those results, like the mothers abusing their own infants. Harlow himself emphasized the epistemological significance of images in conveying his work, and in most textbooks one can follow the progression of his experiments clearly through the pictures, as illustrated in Figures 1–3.



[\(84KB\)](#)

Figure 1. Baby rhesus monkey with surrogate mothers. Courtesy of Harlow Primate Lab, University of Wisconsin–Madison.

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[\(69KB\)](#)

Figure 2. Object exploration in presence of cloth mother. Harry F. Harlow, “The Nature of Love,” *American Psychologist*, 1958, 13:673–685, on p. 680. Publisher: American Psychological Association. Reprinted with permission.

[Open New Window](#)



[\(69KB\)](#)

Figure 3. Abusive mother. Courtesy of Harlow Primate Lab, University of Wisconsin–Madison.

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The second striking feature concerns a more general point: the textbooks presented experimental work in greater detail than observational studies. That is, when psychological research relied on experiments, like Harlow's work, textbooks offered a more extensive description of the research procedures. When presenting views about children's emotional development that were based on observational psychological or psychoanalytic studies, however, textbooks did not provide many specifics, such as the number of children or adults studied or the conditions of research. One possible explanation for this contrast is that observational studies had a lower value in the discipline and, therefore, textbook authors did not consider it necessary to elaborate on their specific features. This interpretation would agree with other historical studies that have documented the importance of experiments in psychology textbooks and the discipline's concern about methodology more generally, a point discussed further in the next section.

### Facts without Hedging?

As already noted, during the mid 1960s most textbooks reported the infant rhesus monkeys' preference for the cloth mother over the wire mother and noted Harlow's view about the importance of contact comfort. Many texts also included Harlow's report that the infants raised with substitute mothers were unable to mate and that artificially inseminated females became abusive mothers.

Did the textbooks present Harlow's results as facts? Yes and no. Textbook accounts reveal a clear gradation of the "factual value" of different statements. All textbooks reported the experimental data provided by Harlow as facts. For example, they reported as facts how many monkeys spent how much time with each mother and how they responded to frightening objects in the strange room. The textbooks often provided evidence for those facts by incorporating pictures and graphs from Harlow's research papers. By presenting Harlow's data as facts, textbooks implicitly validated his experiments as correct investigate procedures.

As to what those—unquestioned—experimental results showed, most textbooks also reported as correct Harlow's inference that the important variable that explains the monkey's attachment to the mother is "contact comfort" and not food. But not all textbooks did. For example, in his 1962 *Introduction to Psychology*, the first of the textbooks analyzed that included Harlow's experiments from 1958, Norman Munn stated: "In times of stress, the baby monkeys ran and clung to their substitute mothers much as



monkeys normally do to their real mothers. Does this mean that infant monkeys, and perhaps human infants as well, need soft cuddly contacts? One cannot say. It is one thing to *need* these and quite another to prefer them to other contacts that are available.” In the 1966 fifth edition of his textbook *Psychology*, Munn repeated those words as well as his earlier assertion that whether infants need affection was a question that could not be answered “on the basis of evidence at present available.” Thus, not all authors agreed that Harlow's experiments showed that infant monkeys *need* contact comfort. Another author, who provided a mainly descriptive account of Harlow's work, hedged his conclusion: “It was concluded that contact comfort is apparently more important as a variable in the development of affectional responsiveness than nursing.”<sup>11</sup>

As for Harlow's conclusion that his experiments with rhesus monkeys were applicable to humans, here, again, textbooks did not simply go along with him. One group of authors reported that “the question of whether a comparable need exists among human infants cannot be answered on the basis of this evidence alone. Experienced researchers report a high degree of similarity between monkey and human mothering, but there is little experimental evidence.” Another textbook noted: “However, a major and to us a most bothersome question remains: *Can* the monkey tell us something accurate and useful about complex *human* behavior and psychological development?” Yet another textbook observed: “What is controversial about the results of Harlow's studies is the degree to which generalization from monkey to human being can justifiably be made.” Some authors qualified their position on this thorny question by speaking cautiously: “Broadly *related* observations have been made about human infants raised in deprived environments, like institutions.” “These studies, *if* they are applicable at the human level, have important implications for child-rearing practices,” noted another textbook.<sup>12</sup>

Even authors who accepted the relevance of Harlow's work for human development advocated different positions regarding what his results over the years implied for the existence of critical periods in emotional development. Ernest R. Hilgard and Richard C. Atkinson's 1967 *Introduction to Psychology*, one of the best-selling introductory textbooks in the United States, situated Harlow's work within discussions of infants' needs and questioned the view that infants deprived of maternal care would suffer determinant effects. In their words: “The human being is, however, resilient, and a poor beginning does not ‘doom’ a child for the rest of his days; his subsequent experiences are important.”<sup>13</sup>

A similar array of positions can be found regarding whether Harlow's experiments showed that maternal care and affection is instinctual or learned. For some authors, the experiments showed that "much of the 'maternal instinct' is not instinctive at all, but learned." In contrast, another textbook noted: "Maternal love, characterized by care and *contact comfort*, appears to be a largely innate response of the normal mother to her infant's dependence." And at least one took the safest route by claiming that Harlow's findings suggested that "maternal behavior in monkeys is partly innate and partly learned."<sup>14</sup>

Interestingly, when it came to the social implications of Harlow's views, none of the textbooks mentioned one of his key points. In his initial 1958 report, Harlow had concluded that other people besides the biological mother, including the father, could provide infants with the contact comfort they need. Yet none of the textbooks reported Harlow's conclusion for social practice.

In sum, the textbooks did not simply report all of Harlow's conclusions about the experiments. Instead, they first selected certain aspects of Harlow's work. In presenting his results, they also separated different conclusions according to what seemed safe enough to report as factual and what needed some hedging. In addition, many textbooks elaborated on the significance of Harlow's work. Although most authors agreed on the importance of Harlow's experimental work, they presented different views as to what his results implied for understanding child development, for the impact of early emotional experiences on adult behavior, and for views about maternal care. Thus, most textbooks exhibited a fair amount of hedging in presenting Harlow's interpretations of his experimental results.<sup>15</sup>

### Uniformity among Textbooks?

These textbooks, as I have already indicated, did not present a uniform picture in reporting or interpreting Harlow's results. They were uniform when it came to presenting the initial experiments of 1958 and 1961 but not when discussing their interpretation.

Furthermore, over time, one can discern selective referencing to some experiments. As Table 1 indicates, many textbooks included Harlow's initial work on contact comfort in monkeys. But fewer textbooks reported his studies on peers, and even fewer discussed the finding that abusive mothers later became good mothers. So, even in presenting the "facts" of the experimental results, the textbooks differed from one another. The pattern suggests that there was negative selective referencing regarding work that did

not fit well with wider scientific and cultural beliefs about the importance of maternal care and love and the belief that deprivation in infancy has irreparable long-term consequences. Negative selective referencing, however, is not unique to textbooks.

The journal literature cited Harlow's work widely, but the twists and turns of his experiments and his emphasis on the importance of peers did not receive much attention. Instead, many authors presented Harlow's work as evidence for the biological need for maternal care and love during infancy, in monkeys and humans alike. I have argued elsewhere that this view owes much to the fact that the British psychiatrist and psychoanalyst John Bowlby selectively appropriated some of Harlow's work in developing his ethological theory of attachment behavior. Bowlby and contemporary supporters of attachment theory cited only Harlow's early research on "contact" comfort, as proof that infants have a biological need for maternal care and love.<sup>16</sup> Thus, textbooks cannot be held solely responsible for oversimplifying Harlow's work.

In general, many introductory psychology textbooks I examined presented Harlow's work in much the same way as an article of meta-analysis or a literature review would. The authors did not contribute their own experimental results or observations to support one hypothesis or to argue against a specific interpretation, as they would in a journal article. But neither did they simply summarize the results of Harlow's work. Rather, most authors reflected on the work presented, usually putting that work into the context of other studies carried out on the same topic, and sometimes making critical comparisons and even challenging Harlow's interpretations and conclusions. In these ways, the textbooks did not simply convey information or disseminate ready-made knowledge claims. And since review and meta-analysis articles are quite common in psychology, it cannot be the case that textbooks assume this role simply because there is no other forum for such analyses. This makes more evident the point that many textbooks do not simply act as "receptacles" of the real knowledge presented in scientific articles.<sup>17</sup>

## **PSYCHOLOGY'S EXCEPTIONALISM?**

The previous analysis showed that introductory psychology textbooks incorporate more information about the context of research, hedge the scientific information presented to a greater extent, and include more diversity in the interpretation of experimental results than we have come to expect from the standard vision of textbooks as receptacles of accepted knowledge in a field. I would like to conclude by

reflecting on why this might be the case.

The textbooks' focus on the process of knowledge production fits well with what other historians have found in studying textbooks in psychology. Several historians of science have explored what Kurt Danziger saw as psychology's long-standing anxiety regarding its scientific status and methodological practices. Andrew Winston and Daniel Blais have noted that "the textbook treatment of method is critical for discursively locating psychology among the sciences and for demarcating psychology from everyday or folk knowledge." Mary Smyth has shown that psychologists place a strong emphasis on epistemology more generally. These disciplinary concerns appear often in the textbooks analyzed here. Practically all of them start with a chapter on methodology or a section on "psychology as a science."<sup>18</sup>

As revealed by Winston and Blais's analysis of changing conceptions of experimentation in textbooks, psychologists have seen experimentation as the key to establishing psychology's status as science. In addition, Winston and Blais show that between the 1950s and the 1970s "psychology textbooks gradually adopted a highly uniform view of experiment as defined by manipulation of an independent variable" and increasingly promoted the view that experiment is epistemologically superior to other methods of research.<sup>19</sup> Psychologists' efforts to justify results by appealing to experiments help explain the detailed description of experimental work in psychology textbooks and the high visibility of Harlow's work in textbooks to this day.

The extensive presentation of Harlow's methods and experiments also lends support to Smyth's view that textbooks about psychological research are as much about the process as the products of research. Smyth observes that "psychology textbooks present fact claims, which are not separate from the circumstances of making, but are referenced and supported by the presentation of evidence, or by indication that evidence exists. The student's task is to learn about the experiments which support the fact statements just as much as to learn the fact statements themselves." Like Winston and Blais, Smyth sees this concern for explaining the process of experimental research as resulting from psychology's need to foreground method as a means to separate itself from nonscience. To achieve that goal, textbooks do not erase the process of research but, instead, include detailed descriptions of it.<sup>20</sup> Since experimentation is key to the discipline's scientific identity, the correctness of the experiments' methodological procedures is as important as the correctness of their interpretations. This would explain

the high value attributed to Harlow's experiments by authors who nevertheless disagreed with many of his conclusions. Most research on emotions at the time was based on psychoanalytic case studies or psychological observations. Harlow's work broke new ground as an experimental approach to the study of emotional development.

But, as Smyth has also noted, by not presenting results as autonomous facts, psychology textbooks also make it evident that the possibility of disagreement is ever present. By putting the emphasis on methods rather than results, Smyth argues, psychology renounces the certainty of other sciences.<sup>21</sup>

Market forces could also play a role in encouraging a diversity of viewpoints in psychology textbooks. Although I don't have the data for the years that I have examined, the number of textbooks published had to be at least equal to, and was probably greater than, the number in my sample here, which was forty-three. M. Y. Quereshi counts fifty-two introductory texts published or revised between 1980 and 1989. According to Richard Griggs, thirty-seven full-length introductory psychology textbooks were published in the United States between 1995 and 1997 alone.<sup>22</sup> Perhaps the vast and rapidly growing number of textbooks in this discipline leads to quick updating. Rather than presenting results as conclusive in ways that might soon need revision, textbook writers may prefer to present results as part of ongoing investigations into the large problem areas of psychology.

## CONCLUSION

My research on introductory psychology textbooks shows that they did not report results isolated from the process of research or without qualification, which supports the earlier findings of Smyth. Furthermore, many introductory psychology textbooks discussed the significance of Harlow's experiments and situated them in relation to other human and animal research on deprivation. Though they did not question Harlow's experimental and observational results, neither did they present his interpretations as conclusive. Indeed, many textbooks engaged in the interpretation of his results and provided different views about what Harlow's experiments implied for human infants—and even for infant monkeys.

Whether it was because of psychology's specific epistemological anxieties, the rapid development of the field, or the response to market pressures, the psychology textbooks I analyzed did not serve merely as

passive repositories of accepted knowledge. By discussing the validity of experimental results, these textbooks took an active part in the more dynamic process of construction and revision of scientific knowledge. In psychology, textbooks have a large and captive audience. It is estimated that in the United States alone approximately 1.5 million undergraduate students complete an introductory or general psychology course each year.<sup>23</sup> If we want to understand psychologists' and nonpsychologists' views about rhesus monkeys, love, and the epistemology of science, we would do well to pay attention to the textbooks they are reading.

## APPENDIX

### PSYCHOLOGY TEXTBOOKS EXAMINED

Calvin, Allen D., Michael Scriven, James J. Gallagher, Charles Hanley, James V. McConnell, and F. J. McGuigan. *Psychology*. Boston: Allyn & Bacon, 1961.

Garrett, Henry E. *General Psychology*. 2nd ed. New York: American Book Company, 1961.

Munn, Norman L. *Introduction to Psychology*. 5th ed. Boston: Houghton Mifflin, 1962. (Abridged edition of *Psychology: The Fundamentals of Human Adjustment*. 4th ed.)

Deese, James. *Principles of Psychology*. Boston: Allyn & Bacon, 1964.

Whittaker, James O. *Introduction to Psychology*. Philadelphia: W. B. Saunders, 1965.

Hutt, Max L., Robert L. Isaacson, and Milton L. Blum. *Psychology: The Science of Interpersonal Behavior*. New York: Harper & Row, 1966.

Madigan, Marian East. *Psychology: Principles and Applications*. 4th ed. St. Louis: C. V. Mosby, 1966.

Morgan, Clifford T., and Richard A. King. *Introduction to Psychology*. 3rd ed. New York: McGraw-Hill, 1966.

Munn, Norman L. *Psychology: The Fundamentals of Human Adjustment*. 5th ed. Boston: Houghton Mifflin, 1966.

Hilgard, Ernest R., and Richard C. Atkinson. *Introduction to Psychology*. 4th ed. New York: Harcourt,

Brace & World, 1967.

Kendler, Howard H. *Basic Psychology*. 2nd ed. New York: Appleton-Century-Crofts, 1968.

Kimble, Gregory A., and Norman Garmezy. *Principles of General Psychology*. 3rd ed. New York: Ronald Press, 1968.

Vinacke, W. Edgar. *Foundations of Psychology*. New York: American Book Company, 1968.

Krech, David, Richard S. Crutchfield, and Norman Livson. *Elements of Psychology*. 2nd ed. New York: Alfred A. Knopf, 1969.

Wrench, David F. *Psychology: A Social Approach*. New York: McGraw-Hill, 1969.

Dember, William Norton, and James J. Jenkins. *General Psychology: Modeling Behavior and Experience*. Englewood Cliffs, N.J.: Prentice-Hall, 1970.

Madigan, Marian East, and Jeanette G. Nehren. *Psychology: Principles and Applications*. 5th ed. St. Louis: C. V. Mosby, 1970.

McKeachie, Wilbert James, and Charlotte Lackner Doyle. *Psychology*. 2nd ed. Reading, Mass.: Addison-Wesley, 1970.

Stagner, Ross, and Charles M. Solley. *Basic Psychology: A Perceptual-Homeostatic Approach*. New York: McGraw-Hill, 1970.

Whittaker, James O. *Introduction to Psychology*. 2nd ed. Philadelphia: W. B. Saunders, 1970.

Lindgren, Henry Clay, and Donn Byrne. *Psychology: An Introduction to a Behavioral Science*. 3rd ed. New York: John Wiley & Sons, 1971.

Morgan, Clifford T., and Richard A. King. *Introduction to Psychology*. 4th ed. New York: McGraw-Hill, 1971.

Edwards, David C. *General Psychology*. 2nd ed. New York: Macmillan, 1972.

Landauer, T. K. *Psychology: A Brief Overview*. New York: McGraw-Hill, 1972.

Munn, Norman L., L. Dodge Fernald, Jr., and Peter S. Fernald. *Introduction to Psychology*. 3rd ed. Boston: Houghton Mifflin, 1972.

Bugelski, B. R. *An Introduction to the Principles of Psychology*. 2nd ed. Indianapolis: Bobbs-Merrill, 1973.

Gazzaniga, Michael S. *Fundamentals of Psychology*. New York: Academic Press, 1973.

Morris, Charles G. *Psychology: An Introduction*. New York: Appleton-Century-Crofts, 1973.

Mussen, Paul, and Mark R. Rosenzweig. *Psychology: An Introduction*. Lexington, Mass.: D. C. Heath, 1973.

Sartain, Aaron Quinn, Alvin John North, Jack Roy Strange, and Harold Martin Chapman. *Psychology: Understanding Human Behavior*. 4th ed. New York: McGraw-Hill, 1973.

Haber, Audrey, and Richard P. Runyon. *Fundamentals of Psychology*. Reading, Mass.: Addison-Wesley, 1974.

Kendler, Howard H. *Basic Psychology*. 3rd ed. Menlo Park, Calif.: W. A. Benjamin, 1974.

Kimble, Gregory A., Norman Garnezy, and Edward Zigler. *Principles of General Psychology*. 4th ed. New York: Ronald Press, 1974.

Krech, David, Richard S. Crutchfield, and Norman Livson. *Elements of Psychology*. 3rd ed. New York: Alfred A. Knopf, 1974.

Lewis, Robert T., and Hugh M. Petersen. *Human Behavior: An Introduction to Psychology*. New York: Ronald Press, 1974.

Davids, Anthony, and Trygg Engen. *Introduction to Psychology*. New York: Random House, 1975.

Fantino, Edmund, and George S. Reynolds. *Introduction to Contemporary Psychology*. San Francisco: W. H. Freeman, 1975.



Lindgren, Henry Clay, and Donn Byrne. *Psychology: An Introduction to a Behavioral Science*. 4th ed. New York: John Wiley & Sons, 1975.

Lindzey, Gardner, Calvin Hall, and Richard F. Thompson. *Psychology*. New York: Worth Publishers, 1975.

London, Perry. *Beginning Psychology*. Homewood, Ill.: Dorsey Press, 1975.

Mednick, Sarnoff A., Jerry Higgins, and Jack Kirschenbaum. *Psychology: Explorations in Behavior and Experience*. New York: John Wiley & Sons, 1975.

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Rubinstein, Joseph. *The Study of Psychology*. 2nd ed. Guilford, Conn.: Dushkin, 1975.

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<sup>1</sup> Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 3rd ed. (Chicago: Univ. Chicago Press, 1996), p. 10. See my introduction to this Focus section.

<sup>2</sup> Thomas S. Kuhn, "The Function of Dogma in Scientific Research," in *Scientific Change*, ed. A. C. Crombie (London: Heinemann, 1963), pp. 347–369, on pp. 350–351; and Kuhn, *Structure of Scientific Revolutions*, pp. 135–138.

<sup>3</sup> Bruno Latour and Steve Woolgar, *Laboratory Life: The Construction of Scientific Facts*, 2nd ed. (Princeton, N.J.: Princeton Univ. Press, 1986), p. 77; Gregory A. Myers, "Textbooks and the Sociology of Scientific Knowledge," *English for Specific Purposes*, 1992, 11:2–17, on p. 11; and Ian Hacking, *The Social Construction of What?* (Cambridge, Mass.: Harvard Univ. Press, 1999), p. 176.

<sup>4</sup> On textbooks in the natural sciences, see the references in my introduction and the other essays in this Focus section. For insightful analysis of whether Kuhn's views apply to psychology see Mary M. Smyth, "Certainty and Uncertainty Sciences: Marking the Boundaries of Psychology in Introductory Textbooks,"

*Social Studies of Science*, 2001, 31:389–416; and Smyth, “Fact Making in Psychology: The Voice of the Introductory Textbook,” *Theory and Psychology*, 2001, 11:609–636. I discuss Smyth's views later in this essay.

<sup>5</sup> Marga Vicedo, *The Nature and Nurture of Love: From Imprinting to Attachment* (Chicago: Univ. Chicago Press, 2012).

<sup>6</sup> Harry F. Harlow, “The Nature of Love,” *American Psychologist*, 1958, 13:673–685. On Harlow see Marga Vicedo, “Mothers, Machines, and Morals: Harry Harlow's Work on Primate Love from Lab to Legend,” *Journal of the History of the Behavioral Sciences*, 2009, 45:193–218.

<sup>7</sup> Harry F. Harlow, “The Development of Affectional Patterns in Infant Monkeys,” in *Determinants of Infant Behavior*, ed. B. M. Foss (London: Methuen, 1961), pp. 75–97.

<sup>8</sup> Harry F. Harlow, “Affectional Systems of Monkeys, Involving Relations between Mothers and Young,” in *Proceedings of the International Symposium on Comparative Medicine* (New York: Eaton Laboratories, 1962), pp. 6–10; H. F. Harlow, “The Heterosexual Affectional System in Monkeys,” *Amer. Psychol.*, 1962, 17:1–9; M. K. Harlow and H. F. Harlow, “Affection in Primates,” *Discovery*, 1966, 27:11–17; and H. F. Harlow, M. K. Harlow, R. O. Dodsworth, and G. L. Arling, “Maternal Behavior of Rhesus Monkeys Deprived of Mothering and Peer Association in Infancy,” *Proceedings of the American Philosophical Society*, 1966, 110:58–66.

<sup>9</sup> I did not include textbooks in developmental psychology or personality development. But a preliminary analysis gives results similar to the ones described here for introductory general psychology textbooks.

<sup>10</sup> Martin R. Skinner, “Psychology Textbooks: Creating the Subject,” *Paradigm*, 1995, 16:22–30.

<sup>11</sup> Norman L. Munn, *Introduction to Psychology*, 5th ed. (Boston: Houghton Mifflin, 1962), p. 151 (emphasis in original); Munn, *Psychology: The Fundamentals of Human Adjustment*, 5th ed. (Boston: Houghton Mifflin, 1966), p. 173; and James O. Whittaker, *Introduction to Psychology* (Philadelphia: Saunders, 1965), p. 103.

<sup>12</sup> Norman L. Munn, L. Dodge Fernald, Jr., and Peter S. Fernald, *Introduction to Psychology* (Boston: Houghton Mifflin, 1972), p. 346; David Krech, Richard S. Crutchfield, and Norman Livson, *Elements of Psychology*, 3rd ed. (New York: Knopf, 1974), p. 479; Sarnoff A. Mednick, Jerry Higgins, and Jack Kirschenbaum, *Psychology: Explorations in Behavior and Experience* (New York: Wiley, 1975), p. 416; W. Edgar Vinacke, *Foundations of Psychology* (New York: American Book, 1968), p. 368 (emphasis added); and Audrey Haber and Richard P. Runyon, *Fundamentals of Psychology* (Reading, Mass.: Addison-Wesley, 1974), p. 246 (emphasis added).

<sup>13</sup> Ernest R. Hilgard and Richard C. Atkinson, *Introduction to Psychology*, 4th ed. (New York: Harcourt, Brace & World, 1967), p. 80.

<sup>14</sup> Charles G. Morris, *Psychology: An Introduction* (New York: Appleton-Century-Crofts, 1973), p. 332; Edmund Fantino and George S. Reynolds, *Introduction to Contemporary Psychology* (San Francisco: Freeman, 1975), p. 152 (emphasis in original); and Joseph Rubinstein, *The Study of Psychology*, 2nd ed. (Guilford, Conn.: Dushkin, 1975), p. 70.

<sup>15</sup> According to Smyth, “Certainty and Uncertainty Sciences” (cit. n. 4), psychology textbooks present results from biology without hedging or caveats but report work in psychology in more tentative terms (pp. 390–391). On hedging in science texts see R. Markkanen and H. Schröder, eds., *Hedging and Discourse: Approaches to the Analysis of a Pragmatic Phenomenon in Academic Texts* (Berlin/New York: Mouton de Gruyter, 1997).

<sup>16</sup> Vicedo, *Nature and Nurture of Love* (cit. n. 5). Recently, the psychologists Michael Lewis and Stephen J. Suomi (a former student of Harlow's) have demonstrated that selective referencing in reporting the experimental results from Harlow's laboratory continues to this day; see Michael Lewis and Stephen J. Suomi, “A Case Study in Selective Referencing: Monkey Infant and Mother Relationships and Their Effect on Subsequent Development,” unpublished MS.

<sup>17</sup> “Meta-analysis” in psychology usually refers to the statistical analysis of several articles on the same topic. Here, I am using the term more loosely to refer to a piece of writing that evaluates some scientific results in the larger context of research on one topic. For my purposes, it does not matter whether the

review is quantitative or a traditional narrative, qualitative analysis of a body of research. On meta-analysis in psychology see Regan J. Shercliffe, William Stahl, and Megan P. Tuttle, "The Use of Meta-analysis in Psychology: A Superior Vintage or the Casting of Old Wine in New Bottles?" *Theory Psychol.*, 2009, 19:413-430.

<sup>18</sup> Kurt Danziger, *Constructing the Subject: Historical Origins of Psychological Research* (New York: Cambridge Univ. Press, 1990); Andrew S. Winston and Daniel J. Blais, "What Counts as an Experiment? A Transdisciplinary Analysis of Textbooks, 1930-1970," *American Journal of Psychology*, 1996, 109:599-616, on p. 600; Smyth, "Certainty and Uncertainty Sciences" (cit. n. 4); and Smyth, "Fact Making in Psychology" (cit. n. 4).

<sup>19</sup> Winston and Blais, "What Counts as an Experiment?" p. 608.

<sup>20</sup> Smyth, "Certainty and Uncertainty Sciences" (cit. n. 4), pp. 390 (quotation), 392; and Smyth, "Fact Making in Psychology" (cit. n. 4), p. 609.

<sup>21</sup> On the tension between scientific objectivity and social relevance in the social sciences see Mark Solovey, *Shaky Foundations: The Politics-Patronage-Social Science Nexus in Cold War America* (Newark, N.J.: Rutgers Univ. Press, forthcoming).

<sup>22</sup> M. Y. Quereshi, "The Contents of Introductory Textbooks: A Follow-Up," *Teaching of Psychology*, 1993, 20:218-222; and Richard A. Griggs, "Introductory Psychology Textbooks: Assessing Levels of Difficulty," *ibid.*, 1999, 26:248-253.

<sup>23</sup> D. T. Cush and W. Buskist, "Future of Introductory Psychology Textbook: A Survey," *Teaching Psychol.*, 1997, 24:119-122.

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