DISCUSSION ARTICLE

The Impact of Skinner’s *Verbal Behavior* on Organizational Behavior Management

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*In the book Verbal Behavior, Skinner provided a comprehensive, behavioral account of language. While the impact of Skinner’s analysis on empirical research has been examined broadly, this review of the literature focused on studies relevant to organizational behavior management (OBM). Both empirical and nonempirical journal articles in OBM were analyzed, along with several influential books in the field. The results of this review indicate that the conceptual framework provided in Verbal Behavior has had virtually no impact on empirical research in OBM and very limited impact on conceptual work. Potential reasons for this lack of influence are discussed, and further research on verbal behavior in organizations is encouraged.*

**KEYWORDS** verbal behavior, Skinner, organizational behavior management, relational frame theory

Organizational behavior management (OBM) is a field heavily focused on the verbal behavior of adult humans. Unlike many other specializations in behavior analysis, virtually all OBM work is conducted with verbally competent adults. Culig, Dickinson, McGee, and Austin (2005), for example, found that verbal adults served as participants in 100% of the studies published in this journal from 1997 to 2001. They also reported that verbal adults served as participants in only 33% of the articles published in the
Journal of Applied Behavior Analysis during the same period. In addition, the most commonly used interventions in OBM—such as performance feedback, praise, goal setting, training, and antecedents (Gulig et al., 2005)—are primarily verbal or language-based. Moreover, most of the behaviors that OBM researchers and practitioners target for change in the modern “Information Age” require the production and/or manipulation of verbal stimuli.

This obvious emphasis on language and verbal behavior in OBM has led to some debate within the field regarding the most appropriate training for OBM students and practitioners. A recent discussion on the OBM Network listserv, for instance, featured some individuals arguing for a renewed emphasis in OBM curricula on laboratory research with nonhuman animals and traditional behavior-analytic clinical work with children or adults with disabilities (e.g., Miguel, 2007). This prompted a response suggesting that such training may be grossly inadequate and even deleterious because “you are not learning how to communicate with a normal language-laden adult human . . . what we do in OBM is, I would argue, closer to what talk-based adult therapy is than to standard ABA [applied behavior analysis] therapy with kids” (Hyten, 2007). Others have noted that “the sense that the field has stalled, is too narrow, or needs new concepts from outside behavioral psychology all indicate that the field is finding it difficult to use direct contingency principles alone as a model of human behavior” (S. C. Hayes, Bunting, Herbst, Bond, & Barnes-Holmes, 2006, p. 3).

Although OBM researchers and practitioners have achieved considerable success in some areas, their overall impact on the world of business and industry remains relatively limited. A simple comparison to the size and growth of industrial-organizational (I-O) psychology as a whole illuminates this fact: the OBM Network has fewer than 300 members (http://www.obm-network.com/membership/directory), while the Society for Industrial and Organizational Psychology has over 6,000 members (http://www.siop.org/reportsandminutes/committeereports/fall08/membership_fall08.aspx). Furthermore, in 2004 there were 65 doctoral programs and 74 MA/MS programs in I-O psychology, representing increases of 47.7% and 221.7%, respectively, since 1986 (Rogelberg & Gill, 2004). In contrast, the OBM Network website currently lists only 14 MA/MS programs and eight doctoral programs in which OBM training is provided. Clearly, there is significant demand for psychology in organizational settings, but OBM graduate programs supply comparatively few of the individuals who are filling that demand.

S. C. Hayes et al. (2006) argued that “difficulties in addressing the effects of verbal processes” (p. 3) may be responsible for the limited influence of behavior analysis in general and OBM in particular. These difficulties are evident in the lack of precision (in terms of basic behavioral principles involved) used to explain or account for common OBM interventions and their effects. Techniques such as goal setting and feedback are frequently used and frequently effective, but are often discussed and explained in
common sense or lay terms rather than technical ones (see Peterson, 1982). Likewise, the importance of rules and rule-governed behavior in OBM are widely recognized, but behavior analysts have struggled to provide a technical explanation for how a rule acquires its “contingency-specifying” function (see S. C. Hayes, Blackledge, & Barnes-Holmes, 2001). A thorough, behavior-analytic approach to understanding human language may be key to understanding, refining, and expanding the practices of OBM.

For many decades, the most comprehensive behavioral account of human language was offered by B. F. Skinner in his book *Verbal Behavior* (1957). Several recent citation analyses of this book indicate that it has had a modest, though increasing, impact on research in behavior analysis (Dymond, O’Hora, Whelan, & O’Donovan, 2006; Sautter & LeBlanc, 2006). These reviews revealed that much of the research inspired by *Verbal Behavior* has been focused on establishing basic verbal operants with children or adults with limited verbal repertoires (Sautter & LeBlanc, 2006), but they were not focused on organizational research and did not categorize their results according to their relevance to OBM. S. C. Hayes et al. (2006) noted that Skinner’s approach to verbal behavior and rules “has a relatively weak record of empirical achievement in organizational settings” (p. 4), but no formal analyses of the literature could be found to support this claim. The aim of this paper is to provide just such an analysis. As we pass the golden anniversary of the publication of *Verbal Behavior*, it is interesting to consider the empirical and conceptual impact it has had on a branch of behavior analysis so heavily focused on its subject matter.

**METHOD AND RESULTS**

*Journal Articles*

To examine the impact *Verbal Behavior* has had on journal articles in OBM, two computerized search engines were used to locate articles: the cited-reference and keyword search of Psychological Information (PsycINFO) and the cited-reference search of the ISI Web of Knowledge (Web of Science Version 7.8; The Thompson Corporation, 2006).

During the initial PsycINFO search, “Verbal Behavior” was the cited reference input and one of four target journals was the journal source input. The four target journals were selected based on their relevance to OBM research and included *Journal of Organizational Behavior Management* (JOBM), *Performance Improvement Quarterly* (PIQ), *Journal of Applied Behavior Analysis* (JABA), and *Journal of Applied Psychology* (JAP). This search was repeated for each of the four target journals. These search criteria resulted in 146 articles, all of which were then examined using pre-established selection criteria.
The first step was to exclude any articles that did not actually reference Skinner’s *Verbal Behavior* (1957), reducing the list of articles to 28. The second step was to exclude any articles that used adults with development disabilities or children as participants, reducing the list of articles to 14. The third and final step was to exclude any studies that were not workplace-related or conducted in an organizational setting (with all JOBM and PIQ articles included automatically due to the focus of these journals), but no articles were excluded using this criterion, leaving the list of articles at 14.

A second PsycINFO search was then conducted using the names of some of Skinner’s most important verbal operants as keywords. In particular, *mand*, *tact*, *autoclitic*, *intraverbal*, or *echoic* served as the keyword input and one of the four target journals served as the journal source input. The search was repeated for each of the four target journals. These queries resulted in a total of 21 articles, which were then examined using the same preestablished selection criteria described above. However, all of the 21 articles used adults with development disabilities or children as participants, reducing the list of articles for this search to zero.

PsycINFO was also used to search for OBM-related articles in the journal *The Analysis of Verbal Behavior*, a primary outlet for research related to Skinner’s analysis of language. The search limits of PsycINFO were used to identify articles in which adults served as the participants, and 35 articles were found. The abstracts of these articles were then reviewed for their relevance to OBM. Only one of these articles was found to be workplace-related or conducted in an organizational setting (Alvero & Austin, 2006), but this article neither cited *Verbal Behavior* nor used any of Skinner’s verbal operants as a dependent or independent variable.

A cited reference search was also conducted using the ISI Web of Knowledge (Web of Science Version 1.2) citation databases for the period of 1957 through 2007. The databases used included *Science Citation Index Expanded* (1957–), *Social Sciences Citation Index* (1957–), and *Arts & Humanities Citation Index* (1957–). All publications that cited *Verbal Behavior* (Skinner, 1957) were included, resulting in a total 1,337 articles. These results were then limited to include only articles published in the *Journal of Applied Behavior Analysis*, which was the only one of our target journals included in the Web of Knowledge databases. This resulted in 47 articles, which were also examined using the selection criteria described above. After excluding articles that used adults with development disabilities or children as participants, eight articles remained. Of these eight articles, four were workplace-related or conducted in an organizational setting.

The foregoing searches resulted in a total of 18 articles that cited *Verbal Behavior* (Skinner, 1957): 11 from JOBM, 6 from JABA, and 1 from JAP. Each article was then examined and classified as either empirical or nonempirical. The empirical category was very broad and included any article that reported previously unpublished data. A total of eight articles were classified as empirical. The
remaining 10 articles were classified as nonempirical. To place these numbers in context, it is useful to compare some measure of the total proportion of empirical OBM articles that have been influenced by *Verbal Behavior* to some measure of the proportion of empirical applied behavior analysis articles that have been influenced by *Verbal Behavior*. From 1977 to 2007, JOBM published a total of 429 articles ($M = 14.3$ per year), and 2.6% of them (eight) were empirical articles that cited *Verbal Behavior* or utilized Skinner’s verbal operants. From 1968 to 2004 JABA published a total of 2,068 articles ($M = 36$ per year), and 1% of them (21) were empirical articles that cited *Verbal Behavior* or utilized Skinner’s verbal operants (Oah & Dickinson, 1989; Sautter & LeBlanc, 2006). Although this comparison suggests *Verbal Behavior* may have had a larger impact on OBM than applied behavior analysis in general, such a conclusion is inaccurate because none of the JOBM articles identified above actually employed one of Skinner’s verbal operants as a dependent or independent variable (as elaborated upon in the sections below). All of the JABA articles identified by Oah and Dickinson and Sautter and LeBlanc, on the other hand, did utilize a verbal operant as a dependent or independent variable. Thus, for the timeframes specified above, the percentage of empirical articles in JOBM that utilized one of Skinner’s verbal operants was 0%, compared to 1% for JABA.

**EMPIRICAL ARTICLES**

Table 1 displays the eight articles classified as empirical. Although each of these articles reported original data and cited *Verbal Behavior*, none employed

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<th>Empirical OBM Articles Citing <em>Verbal Behavior</em> (1957)</th>
<th>Journal</th>
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<tr>
<td>Berry &amp; Geller (1991)</td>
<td>JABA</td>
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<td>Boyce &amp; Geller (1999)</td>
<td>JOBM</td>
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<td>Mawhinney (2005)</td>
<td>JOBM</td>
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<tr>
<td>Mawhinney &amp; Fellows-Kubert (1999)</td>
<td>JOBM</td>
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<td>Mayfield &amp; Chase (2002)</td>
<td>JABA</td>
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<td>Tudor &amp; Bostow (1991)</td>
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<td>Wallace (1977)</td>
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<th>Non-empirical</th>
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<tr>
<td>Critchfield &amp; Kollins (2001)</td>
<td>JABA</td>
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<td>L. J. Hayes (1999)</td>
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<td>S. C. Hayes (2005)</td>
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<td>Houmanfar &amp; Johnson (2005)</td>
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<td>Matthews, Shimoff, &amp; Catania (1987)</td>
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<td>Mawhinney (1975)</td>
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one of Skinner’s verbal operants as a specific independent or dependent variable. Berry and Geller (1991) did not cite *Verbal Behavior* until the discussion section, and then only to note that “motivational variables” may be a better descriptor of interlock and unlimited systems. Boyce and Geller (1999) cited *Verbal Behavior* in the introduction and discussion when describing the antecedent strategies at the bottom level of their multiple intervention level (MIL) hierarchy as rules. Haas and S. C. Hayes (2006) cited *Verbal Behavior* only in the context of noting that Skinner’s nonrelational definition of “verbal behavior” could not account for the feedback effects expected in their study. Mawhinney (2005) cited *Verbal Behavior* twice; once when describing an antecedent intervention as a rule and once when offering mands and tacts as examples of behavior a person can change to effect a change in the behavior of another person. Mawhinney and Fellows-Kubert (1999) cited *Verbal Behavior* in the introduction when describing a particular type of rule as being “more like a mand than a tact” (p. 40). Mayfield and Chase (2002) cited *Verbal Behavior* twice, once to reference his discussion of extension to distinguish it conceptually from the type of problem solving examined in their study, and once when claiming that “practice on each skill across a range of examples also ensured generalization and extension” (p. 118). Tudor and Bostow (1991) cited *Verbal Behavior* in a discussion of the appropriate measurement index for evaluating programmed instruction where they describe the answer to a question as an intraverbal. Finally, Wallace (1977) cited *Verbal Behavior* in the introduction when noting that the intermediate sources of reinforcement for novel writing might be subjected to an experimental analysis, and again when writing that Skinner used the term “composition” to refer to the “reworking and elaboration of previously generated verbal behaviors” (p. 519).

**NON-EMPIRICAL ARTICLES**

Table 1 also displays the 10 articles classified as nonempirical. All of these articles cite *Verbal Behavior* but do not report original data. While these articles address a number of issues related to verbal behavior, it is noteworthy that three of the 10 articles cite *Verbal Behavior* only in the context of criticizing Skinner’s analysis (S. C. Hayes, 2005; S. C. Hayes et al., 2006; Stewart, D. Barnes-Holmes, Y. Barnes-Holmes, Bond, & S. C. Hayes, 2006).

**Books**

To examine the impact *Verbal Behavior* has had on key conceptual models in OBM, nine influential OBM books were reviewed. These books included *The Sin of Wages: Where the Conventional Pay System Has Led Us and How to Find a Way Out* (Abernathy, 1996); *Managing Without Supervising:*

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Creating an Organization-Wide Performance System (Abernathy, 2000); Unlock Behavior, Unleash Profits (Braksick, 2000); Performance Management: Changing Behavior that Drives Organizational Effectiveness (Daniels & Daniels, 2004); Human Competence: Engineering Worthy Performance (Gilbert, 1978/1996); Organizational Change (L. J. Hayes, Austin, Houmanfar, & Clayton, 2001); Handbook of Organizational Performance: Behavior Analysis and Management (Johnson, Redmon, & Mawhinney, 2001); Improving Performance: How to Manage the White Space in the Organization Chart (Rummler & Brache, 1995); and Behavioral Principles in the Practice of Management (Scott & Podsakoff, 1985). These books were selected by consulting several OBM professionals and asking them what they considered the most influential books in the field. The table of contents, indexes, and references or bibliographies of these books were examined for references to Verbal Behavior or any of Skinner’s verbal operants.

Of the nine books examined, the following six made no reference to Verbal Behavior and did not cite, describe, or define any of Skinner’s verbal operants: The Sin of Wages; Managing Without Supervising; Unlock Behavior, Unleash Profits; Performance Management; Human Competence; and Improving Performance. The remaining three books either referenced Verbal Behavior or addressed one or more of Skinner’s verbal operants, as described in further detail below.

Of the 13 chapters in the edited book Organizational Change (L. J. Hayes et al., 2001), two cite Verbal Behavior. A chapter on organization-environment systems by Mawhinney includes Skinner’s definition of language and mentions some of the functions verbal behavior can have. A chapter on consumer behavior by Hantula, DiClemente and Rajala credits Verbal Behavior for anticipating postmodern theories of language and also cites the book in the context of discussing metaphors and the Behavioral Perspectives Model (Foxall, 1990). Neither chapter in this volume uses or defines any of Skinner’s verbal operants.

The Handbook of Organizational Performance (Johnson et al., 2001), another edited book, includes citations of Verbal Behavior in two of its 17 chapters. A chapter on the principles of learning by Poling and Braatz provides a rather extensive treatment of Skinner’s analysis of verbal behavior, with definitions of verbal behavior, rules, and several verbal operants (including mands, tacts, intraverbals, textuals, and echoics). A chapter on leadership by Mawhinney also cites Verbal Behavior when noting that rules can be the verbal behavior of a speaker, but does not use or define any of Skinner’s verbal operants.

The only other OBM book to cite Verbal Behavior is Behavioral Principles in the Practice of Management (Scott & Podsakoff, 1985), which provides a detailed overview of the key principles and concepts of Skinner’s analysis. The authors credit Skinner with giving the field its first “comprehensive functional analysis of verbal behavior” (p. 96), and provide definitions,
DISCUSSION

The purpose of this report was to examine the impact Skinner's analysis of verbal behavior (1957) has had on the field of OBM. Based on our review of the empirical and conceptual literature, that impact appears to be negligible, at best. Although *Verbal Behavior* was published over 50 years ago and OBM began to emerge as a distinct area of research over 30 years ago (e.g., JOBM began publication in 1977), only 8 empirical articles in OBM were found that cited *Verbal Behavior*. Furthermore, none of those articles actually employed one of Skinner’s verbal operants as either a dependent or independent variable. This suggests that, to date, Skinner's analysis of language has had very little influence on the manner in which organizational behavior or workplace performance has been empirically examined in OBM.

The conceptual or theoretical influence of *Verbal Behavior* on OBM may be more promising, as the book was cited in 10 nonempirical journal articles and three books in the field. Even here, however, the impact appears limited. Of the 10 journal articles citing *Verbal Behavior*, three are sharply critical of Skinner’s approach. Of the three books citing *Verbal Behavior*, two are edited volumes with only four of the 30 total chapters citing Skinner’s book and only one of those four chapters—a chapter on principles of learning—discussing any of Skinner’s verbal operants. The fourth book to cite *Verbal Behavior*, *Behavioral Principles in the Practice of Management* (Scott & Podsakoff, 1985), provides the most extensive treatment of Skinner’s analysis and its relation to OBM, but is out of print and not widely regarded as an influential book in the field.

Most of the journal citations of *Verbal Behavior* in OBM have occurred in the past 10 years, with five of the 8 empirical articles and eight of the 10 nonempirical articles being published since 1999. This recent increase in interest in Skinner’s analysis conforms with the trend found in the behavior-analytic literature in general (Dymond et al., 2006; Sautter & LeBlanc, 2006). Unfortunately, since none of the empirical articles examined in the present study actually relied on one of Skinner’s verbal operants, it does not seem that this gain represents an actual increase in influence on the empirical research in OBM.

Given the heavy emphasis on verbal behavior and verbal stimuli in OBM, it is disheartening that the most prominent analysis of language in behavior analysis has had little effect on our interventions or measurement systems. It has been noted elsewhere that the impact of *Verbal Behavior* on
behavior analysis as a whole has been underwhelming (e.g., S. C. Hayes et al., 2001), with most of the research it has inspired focused primarily on teaching basic verbal operants to children with developmental disabilities (Sautter & LeBlanc, 2006). Thus, it may not be surprising that OBM researchers have not found much of use in that literature and have struggled to incorporate Skinner’s analyses into their own work.

Some have suggested that the limited impact Verbal Behavior has had on empirical research and application may be due to conceptual flaws in Skinner’s analysis (S. C. Hayes et al., 2001). Skinner’s definition of verbal behavior, for example, has been criticized as being nonfunctional because it relies on the behavioral history of another organism (the listener, specially trained by the verbal community to mediate reinforcement) and too broad because it is difficult to distinguish verbal behavior from any other socially mediated behavior using his definition. Skinner’s definition of a verbal stimulus as the “product of verbal behavior” is also problematic, as it classifies a stimulus by its source, not its function for the organism of interest. Without a functional definition of a verbal stimulus, the meaning and coherence of Skinner’s taxonomy of verbal operants suffers because all of his verbal operants (other than the mand) require that the controlling stimulus be identified as verbal or not to be properly classified. In recent years, relational frame theory (RFT; S. C. Hayes, Barnes-Holmes, & Roche, 2001) has been offered as another behavior-analytic approach to language and cognition that does not suffer from the same limitations as Skinner’s analysis. The implications of RFT for the field of OBM have recently been explored in the pages of this journal (S. C. Hayes, Bond, Barnes-Holmes, & Austin, 2006).

Other reasons for Verbal Behavior’s lack of influence on OBM are possible. Since direct-acting contingencies undoubtedly play an important role in organizations, many OBM researchers and practitioners may have experienced adequate success without the need for a detailed analysis of verbal behavior. The fact that the number of OBM practitioners and graduate programs is dwarfed by the number of traditional I-O psychology practitioners and graduate programs, however, suggests that the success of OBM in the larger context must not be overstated. It is also possible that Verbal Behavior is not more influential simply because many behavior analysts may have not read the book. A review of the curricula of OBM graduate programs might indicate whether or not specific training in verbal behavior is required of students.

Since the present study focused exclusively on the impact of Skinner’s analysis of verbal behavior, a more extensive analysis of the degree to which verbal behavior in general has been studied in OBM may prove useful. The challenge of such a study would be in identifying verbal and nonverbal variables, particularly since verbal behavior and stimuli are defined differently in RFT than they are in Skinner’s analysis. The distinction is important, as some behaviors particularly relevant to OBM, such as
rule-governed behavior, are not necessarily verbal in Skinner’s analysis (for Skinner, the behavior of a listener is “not necessarily verbal in any special sense” [1957, p. 2]) but would be considered verbal in RFT. An additional challenge of such a study is that most of the interventions in OBM (e.g., goal setting, feedback, praise, etc.) are language-based to some degree, and it may therefore be difficult to identify studies that do not focus on verbal behavior. One approach would be to use citation analyses to examine the extent to which basic research on verbal behavior is cited in OBM articles.

As OBM researchers and practitioners work to expand their influence in both corporate and academic settings, it seems imperative that behavior-analytic approaches to human language be considered and incorporated into our research. We work with highly verbal adults and rely on highly verbal interventions; developing technical analyses of these performances and technologies may be key to advancing our science and expanding our practice. Little progress had been made in using Skinner’s analysis of language to develop such analyses, due either to lack of effort or flaws in the analysis itself. New approaches such as RFT may prove more fruitful. Regardless of which approach is adopted, it seems evident that more research on the role of verbal behavior in organizational settings is needed if OBM is to evolve as an applied science.

REFERENCES


