



Measuring the Dissemination Impact of Culturo-Behavioral Science

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Abstract

Culturo-behavior science addresses many of the world’s most significant problems and therefore has potential to create world-changing outcomes. Before systems level changes that improve the world can be implemented, however, it is first necessary for the public to know about and take interest in the accomplishments of culturo-behavior science. Measurable evidence that this kind of influence is being achieved is a component of “dissemination impact,” an important but often overlooked form of accountability on sciences that target real-world problems. We describe a method for quantifying some aspects of dissemination impact and present data on how much of this impact has been earned by articles published in *Behavior and Social Issues*. The results provide considerable food for thought about how culturo-behavior science can proceed toward making the strategic pursuit of dissemination impact a component of its evidence-based practices.

Keywords Dissemination · Citation impact · Translation · Social media · Public policy · Altmetrics

The culturo-behavior science (CBS) movement in behavior analysis (Cihon & Mattaini, 2020), for which *Behavior and Social Issues* (BSI) is the primary home, has created a legacy of many valuable contributions. The journal has featured

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novel conceptual analyses of Big Problems¹; introduced behavior analysts to data and concepts from outside of behavior analysis that are relevant to those problems; and produced some promising empirical analyses related to those problems (for surveys, see Cihon & Mattaini, 2021; Mattaini, 2019). In these ways, the CBS movement has stretched the boundaries of applied behavior analysis, something that is sorely needed in a field that has been criticized for being rigid in its approach. Behavior analysis tends to be methodologically and conceptually conservative, sometimes leaving the impression that topics of study are chosen, not for their relative importance to humankind, but rather at least partly because they fit into a familiar research tradition or a particular style of investigation (Critchfield & Reed, 2017; Friman, 2006; see also Mattaini, 2019). Recently, Heward et al. (2022) catalogued 350 domains of socially important behavior that have been addressed by empirical behavioral analyses. Though the list was long, and included numerous studies aimed at improving individual quality of life, it proved somewhat light on attention to problems at the culturo-behavioral level of analysis. By contrast, CBS has generally been topically and methodologically adventurous, first selecting topics of the highest importance and only then attempting to figure out how to address them (Mattaini, 2019). As many writers in the CBS community have observed, this approach seems absolutely necessary if we are to take seriously Skinner's (e.g., 1987) famous challenge to "save the world."² On this basis, it is not unreasonable to describe CBS as potentially the most important thing happening in behavior analysis today.

As integral as an audacious agenda is to "saving the world," the present article identifies something further that is absolutely needed. This something will, however, be introduced in a roundabout way in order to place CBS into a context that every behavior analyst appreciates: accountability for effectiveness. Skinner (1948) framed this context even before behavior analysis had made the leap from bench to bedside: In *Walden Two*, he imagined re-engineering society through experimental communities whose practices would be shaped by data – no practice would be sacred unless empirically verified as effective; (e.g., see Glenn, 1986). When applied behavior analysis coalesced as a formal enterprise a generation or two later, it adopted the same perspective, with the only thing stressed as energetically as the need for socially important behavior change being the need to document that change with data (e.g., Baer, et al., 1968). Data-driven practices have also been proposed or established for such diverse pursuits as teaching (Detrich et al., 2013; Spencer et al., 2012), supervising staff (Sellers, et al., 2016; Turner, et al., 2016), managing organizations (Babcock et al., 1998); evaluating graduate programs (Critchfield, 2015), and cross-site scaling up of interventions (Fixsen

¹ Problems that often are so big and complex as to be formally designated as "wicked" (see Levin et al., 2012; Rittel & Webber, 1973).

² We think "save the world" belongs in air quotes because, in keeping with the present article's theme of accountability, it's unclear whether it is possible to ever declare this mission fully accomplished (e.g., Rittel & Webber, 1973). Skinner's phrase is best regarded as a euphemism for "making some progress on Big Problems."

et al., 2019, Horner et al., 2014). It is no exaggeration to call relying on data to design and refine one's practices one of the defining features of a behavioral approach.

How does CBS fit into this evidence-based tradition? Empirical accountability requires two things: specifying what outcomes are sought and identifying what evidence describes how well the outcomes have been accomplished (Spencer et al., 2012). Regarding the former, it's increasingly understood that CBS targets Big Problems such as:

- Poverty, and growing income and asset disparities
- Consumer excesses and financial exploitation encouraged by unregulated corporate capitalism
- Environmental degradation and climate change
- The escalation of imprisonment, especially among young men of color in the US
- The widespread failure of public education among disadvantaged populations, despite the availability of effective educational technologies...
- Collective violence, including political repression, war, genocide, and violence associated with drug, human, and weapons trafficking (Mattaini, 2013, p. 1).

Ultimately, to be called effective, CBS will need to produce implementation evidence (see Malott, 2021; Malott & Glenn, 2006; Spencer et al., 2012) showing that it is making headway toward ameliorating the Big Problems. Skinner, for his part, was impatient about implementation. "It's not a question of starting," Skinner (1948) wrote, "The start has been made. It's a question of what's to be done from now on" (p. 257). Compared to Skinner, however, the CBS community has been a bit more deliberate and realistic in its approach. A recurring theme in BSI has been that, before "world saving" can commence in a meaningful way, significant preliminary work is needed (e.g., Cihon & Mattaini, 2021; Mattaini, 2010, 2013, 2019; Seniuk et al., 2019). The underlying assumption is that although these activities may not on their own constitute societal change, they plant the seeds of societal change by positioning culturo-behavior scientists to more intelligently steer toward Big Problem solutions.

Preliminary steps are needed, in part, because of a widely recognized constraint on the success of CBS: In the words of Ardila (1990), behavior analysis "has the principles and the laws to change the world, but it doesn't have the power" (p. 20). Or, as Miller et al. (1992) explained, "The people who implement or decide to implement our procedures are ... caregivers, supervisors, administrators, politicians, parents – ordinary people. We have not been granted dictatorial powers with these people" (Miller et al., 1992, p. 91). Unlike in *Walden Two*, whose experimental community was imagined into existence, fully formed and operating with the enthusiastic support of its inhabitants, real solutions require societal understanding, acceptance, and interest (see Rogers, 2003). This defines an important type of preliminary milestone for CBS investigations (and one that has generated some traction, e.g., Fawcett et al., 1988; see also recent musings on dissemination efforts by Ardila Sánchez et al., 2020; Mattaini et al., 2020).

For the skeptical reader, we offer the example of the Community Tool Box (<https://ctb.ku.edu/en>; see Fawcett et al., 2000; Watson-Thompson et al., 2020) as a case for the enduring importance of interest to prospective intervention success. In line with a participatory behavioral community approach, the Tool Box facilitates culturo-behavior science resource accessibility such that communities can take independent and empowered steps toward resolving local instances of Big Problems. No behavior analyst need be present as a catalyst, but logic follows that *some member* of the local community must be sufficiently convinced of the value of a culturo-behavior science before such practices are adopted. Influence sets the precedent for community interest. We propose that, in a similar fashion, influence is a marker for the ongoing promise for CBS to offer a meaningful solution to any of the world's Big Problems.

Toward Accountability on Influence

And now, finally, we begin to sidle up to the purpose of the present article. Skinner (e.g., 1978, 1984, 1986, 1993) often observed, in effect, that, “*We could do so much good if only the world would let us!*” Clearly, a “world-changing” mission like that of CBS requires stimulating interest and investment at a scale needed to set the solutions to Big Problems into motion. In a distinction that is central to the present article's theme, the quality of a solution and the reach of its influence are more or less independent issues, as Detrich et al. (2013) has observed: “We built a better mouse-trap but the world did not beat a path to our door. It is somewhat ironic that what is arguably a science of influence (behavior analysis) has not been more effective at influencing the adoption rate of a science of influence” (p. 541). Of course, behavior analysts have suggested various ways to achieve greater influence (e.g., Cihon et al., 2016; Critchfield, 2011, 2018; Fixsen et al., 2019; Foxx, 1996; Friman, 2006; Hine-line, 2018; Lindsley, 1991; Mace & Critchfield, 2010; Poling, 2010; Seniuk et al., 2019; Wolf, 1978). However, for the most part, the effectiveness of these suggestions remains to be systematically evaluated.

In the spirit of the accountability tradition that started with *Walden Two*, the most important ingredient in meeting any goal, even one as audacious as “saving the world,” is having objective feedback on progress (Spencer et al., 2012). As Mattaini (2009) asserted, CBS “cannot survive without data” (p. 1). Yet, to our knowledge, no systematic data have been presented describing the level of societal influence that CBS has so far attained.³ Scholarly citations tell an informative story (e.g., Luke et al., 2017) but may be a bit beside the point of the present discussion because they measure scientists noticing other scientists, and scientists often are a poor proxy for stakeholders (e.g., Detrich, 2018; Mace & Critchfield, 2010; Rogers, 2003). Also available are outcome data showing how well a particular program or intervention worked (e.g., Fixsen & Blase, 2019; Horner et al., 2014) and social validity data

³ True as well for most areas of behavior analysis. For data on the dissemination impact of *Behavior Analysis in Practice*, see Critchfield et al. (2022).

showing how much stakeholders liked an intervention (Wolf, 1978). However, these are orthogonal to the problem of up-front influence because they can be obtained only after one has enough influence to implement a solution in the first place. Absent to date has been systematic evidence of how much various kinds of societal stakeholders are noticing advances in CBS.

To quantify this kind of societal attention, one might at least adhere to the general idea behind scholarly citation impact. Citations are how scientists “talk about” their influences, and citation impact reflects the aggregate of these mentions. By extension, to determine how much stakeholders have attended to CBS, it might prove informative to track the extent to which they “talk about” it. For example, how often do professionals writing for official purposes other than publishing scientific reports (e.g., in public policy documents or patent filings) mention CBS? How often do people working in communications mention CBS when writing for the general public (e.g., news articles, blogs, Wikipedia pages)? And how often do everyday people mention CBS when writing for one another (e.g., social media posts)? Early stages of *dissemination impact* (as contrasted with citation impact; Trueger et al., 2015) would be evident in the aggregate of these kinds of mentions.

Using Altmetric Data to Measure Dissemination Impact

There is, in fact, a convenient way to begin measuring dissemination impact. To promote the concept of accountability on achieving influence, the present article describes it and presents some relevant dissemination-impact data for articles that have appeared in BSI.⁴ The data come from a massive database maintained by a company called [Altmetric.com](https://www.altmetric.com) and were obtained using an application called Altmetric Explorer⁵ on February 12–28, 2022. The database summarizes mentions of journal articles (and some other scholarly outputs) in the types of non-scholarly sources described above (plus a number of others that will not be discussed here). Such data are referred to as *altmetrics*⁶ (Adie & Roe, 2013).

The [Altmetric.com](https://www.altmetric.com) database updates daily to create a “lifetime” record of attention for any article mentioned in its sources, tracing back to the article’s date of publication. At the time this article was written, the database contained about 205 million altmetric mentions of about 20 million scholarly products. The database

⁴ Our search incorporated BSI Volumes 1 through 30 (1991–2021). The journal’s history actually extends back to 1978 via the predecessor titles *Behaviorists for Social Action* and *Behavior Analysis and Social Action* (see Luke et al., 2017; Mattaini & Cihon, 2019). However, the database that we used revealed no evidence of measurable dissemination impact for any article in the predecessor publications, so the present survey is limited to the journal’s current iteration.

⁵ The Explorer application is available free to persons with an academic affiliation (<https://www.altmetric.com/products/free-tools/>). For a way to access altmetric data without the Explorer, see Critchfield & Dixon (submitted).

⁶ So, to be clear: The company is *Altmetric* (capitalized, singular) or [Altmetric.com](https://www.altmetric.com), and the data are *altmetrics* (lower case, plural).

combines various types of mentions of a given article into an Altmetric Attention Score⁷ which, as it gets bigger, indicates more mentions and a higher relative rank of attention among all of the articles in the data base. In the latter case, for instance, among database articles published in July 2021, an Attention Score of 2 defined the median and a score of 10 defined roughly the 75th percentile. To provide some specific examples of Attention Scores, Table 1 lists the BSI articles with the highest ones, as well as their percentile rank for same-aged articles in the database and some of the kinds of mentions they have received. Notice that Attention Scores vary considerably across articles, as do the types of attention comprising those scores.

Perhaps the most important thing to stress about Attention Scores is that they describe a type of impact that is almost completely independent of what scholarly citations describe. To illustrate, Fig. 1 shows the relationship, for all BSI articles in the [Altmetric.com](https://www.altmetric.com) data base, between Attention Score and citation count. The weak positive correlation mirrors what has been reported in many previous investigations focusing on a variety of disciplines (e.g., Costas et al., 2015). Put simply, it's all but impossible to infer an article's dissemination impact from its citation impact, and vice versa. This makes it vital to directly measure dissemination impact rather than try to infer it from citation counts.

Some types of altmetric mentions (like those in social media, news, and blogs) tend to pile up quickly after an article's publication, with mention-accumulation half-lives ranging from a few days to a few months. Other types (like those in policy documents, patents, and Wikipedia pages) tend to accumulate more slowly, with half-lives measured in years (Fang & Costas, 2018; Ortega, 2018). In the [Altmetric.com](https://www.altmetric.com) data-base as a whole, different kinds of mentions occur with different relative frequencies that have shifted somewhat over time. Figure 2 shows the prevalence of several types of mentions during the years 2012–2021.⁸ As the figure suggests, mentions overall have been increasing over time, with social media providing the most mentions and Twitter, the largest source of social media mentions, accelerating in prevalence faster than other kinds of mentions. By showing how often different kinds of mentions occur generally, Fig. 2 will provide a good frame of reference for evaluating how BSI's mentions, specifically, have changed over time, which will be discussed soon.

A final contextual point is that a complete assessment of dissemination impact, as measured via altmetric data, requires more than simply counting mentions. For any given article, it is, of course, important to know *what* is said. For example, what policy documents mention the article in what capacity? How substantive are mentions of the article in the news, in Wikipedia pages, and in social media posts? Overall, are mentions complimentary or critical? Such details can be mined from the [Altmetric.com](https://www.altmetric.com) data base (e.g., see Critchfield & Dixon, 2022), but are beyond the scope of the present discussion. Suffice it to say that before fretting over what has been said about one's work, it is first necessary to ascertain whether the work was noticed in the first place.

⁷ Different types of mentions are weighted differently in the calculations. For details, see <https://help.altmetric.com/support/solutions/articles/6000233311-how-is-the-altmetric-attention-score-calculated->.

⁸ This range was chosen because many kinds of electronic sources of mention either did not exist, or were rarely used, before about 2012. Less than 3% of mentions in the [Altmetric.com](https://www.altmetric.com) data base date from before then (see <https://www.altmetric.com/explorer/timeline>).

Table 1 Top 20 (including ties) altmetric attention scores of articles published in *Behavior and Social Issues*

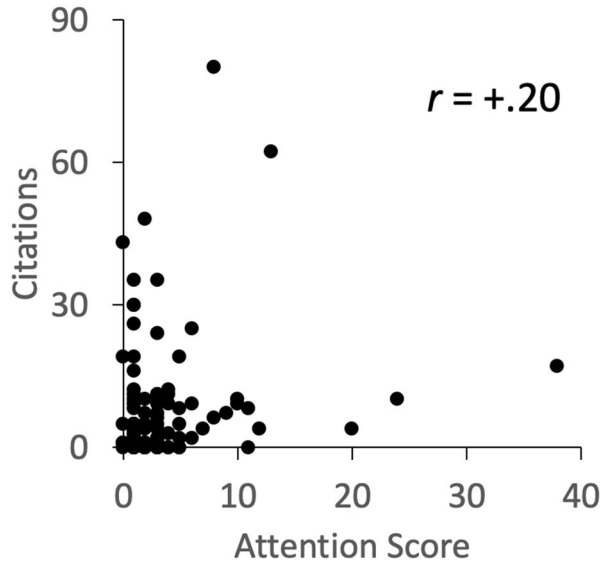
| Score | %ile | Author (Year) | Title | Selected Mention Sources ^a | | | | |
|-------|------|----------------------------|--|---------------------------------------|------|-----------|-------|---------|
| | | | | Policy | News | Wikipedia | Blogs | Twitter |
| 39 | 94 | Knapp (1997) | Behaviorism and public policy: B. F. Skinner's views on gambling | 4 | 2 | 0 | 0 | 0 |
| 24 | 90 | Tsipursky et al. (2017) | Fighting fake news and post-truth politics with behavioral science: The Pro-Truth Pledge | 0 | 2 | 0 | 1 | 0 |
| 20 | 90 | Wyatt (2002) | What was under the McMartin Preschool? A review and behavioral analysis of the "tunnels" find | 0 | 0 | 2 | 0 | 18 |
| 13 | 87 | Fournier et al. (2007) | Human-animal interaction in a prison setting: Impact on criminal behavior, treatment progress, and social skills | 2 | 1 | 0 | 0 | 0 |
| 12 | 82 | Gelino et al. (2021) | Going green: A systematic review of proenvironmental empirical research in behavior analysis | 0 | 0 | 0 | 0 | 16 |
| 11 | 83 | Niland & Ortu (2020) | Confessions selected by consequences: An operant analysis of false confessions and interrogation techniques | 1 | 0 | 0 | 0 | 9 |
| 11 | 80 | Mattaini & Rehfeldt (2020) | Editorial: Rendezvous with truth and discovery | 0 | 0 | 0 | 0 | 13 |
| 10 | 81 | Sidman (1993) | Reflections on behavior analysis and coercion | 0 | 1 | 0 | 0 | 1 |
| 10 | 80 | Guerin & Ortolan (2017) | Analyzing domestic violence behaviors in their contexts: Violence as a continuation of social strategies by other means | 1 | 0 | 0 | 0 | 6 |
| 9 | 82 | Schlinger (2002) | Not so fast, Mr. Pinker: A behaviorist looks at the blank slate. A review of Steven Pinker's <i>The blank slate: The modern denial of human nature</i> | 0 | 0 | 2 | 0 | 7 |
| 8 | 78 | Sasson & Paul (2014) | Labeling acts of sexual violence: What roles do assault characteristics, attitudes, and life experiences play? | 0 | 1 | 0 | 0 | 0 |
| 8 | 79 | Glenn et al. (2016) | Toward consistent terminology in a behaviorist approach to cultural analysis | 0 | 0 | 0 | 0 | 8 |
| 7 | 71 | Levy et al. (2019) | Addressing social and global Issues: Viewing the Syrian refugee crisis through a behavior-analytic lens | 0 | 0 | 0 | 0 | 7 |

Table 1 (continued)

| Score | %ile | Author (Year) | Title | Selected Mention Sources ^a | | | | | |
|-------|------|-------------------------------|---|---------------------------------------|------|-----------|-------|---------|--|
| | | | | Policy | News | Wikipedia | Blogs | Twitter | |
| 6 | 72 | da Rocha & Hunziker (2020) | A behavior-analytic view on nudges: Individual, technique, and ethics | 0 | 0 | 0 | 0 | 7 | |
| 6 | 70 | Fernandes & Ditrich (2018) | Expanding the behavior-analytic meanings of “freedom”: the contributions of Israel Goldiamond | 0 | 0 | 0 | 0 | 8 | |
| 6 | 74 | Bell & Naugle (2005) | Understanding stay/leave decisions in violent relationships: A behavior-analytic approach | 0 | 0 | 0 | 1 | 0 | |
| 5 | 68 | Kaplan et al. (2018) | A Behavioral economic approach to green consumerism: Demand for reusable shopping bags | 0 | 0 | 0 | 0 | 6 | |
| 5 | 68 | Ardila Sánchez et al. (2020) | Collective editorial: Ten guidelines for strategic social action | 0 | 0 | 0 | 0 | 7 | |
| 5 | 70 | Watson-Thompson et al. (2021) | An editorial on revitalizing behavioral community psychology: Where do we go from here? | 0 | 0 | 0 | 0 | 5 | |
| 5 | 69 | Molina et al. (2019) | Learning from experimental communities using behavioral systems analysis | 0 | 0 | 0 | 0 | 5 | |
| 5 | 66 | Mattaraini (2003) | Constructing nonviolent alternatives to collective violence: A scientific strategy | 0 | 0 | 0 | 0 | 5 | |

^a Counts shown here do not always agree with the examples provided in the Table 3 because of how mention totals are tabulated. For example, multiple editions of the same Wikipedia page, listed separately in the Table 3, would count as one mention here. Percentile rank is among articles of the same age. There are many other mentions types besides those listed here, but these are some of the more common and/or relevant to the mission of disseminating culturo-behavior science

Fig. 1 Relationship between altmetric attention score and citation count for behavior and social issues articles in the [Altmetric.com](https://www.altmetric.com) database



Attention Profile of Behavior and Social Issues

Having now glimpsed the dissemination impact of selected BSI articles (Table 1), let’s elaborate by comparing BSI to some other journals. Deciding what should count as comparison journals is difficult because BSI is the only CBS journal, and also because “saving the world” is complicated: to varying degrees, this is a practitioner mission, a public policy mission, an ABA research mission, and a general behavior analysis mission. Therefore, Table 2 compares BSI mentions, aggregated

Fig. 2 Prevalence of selected mention types in the [Altmetric.com](https://www.altmetric.com) database, 2012–2021

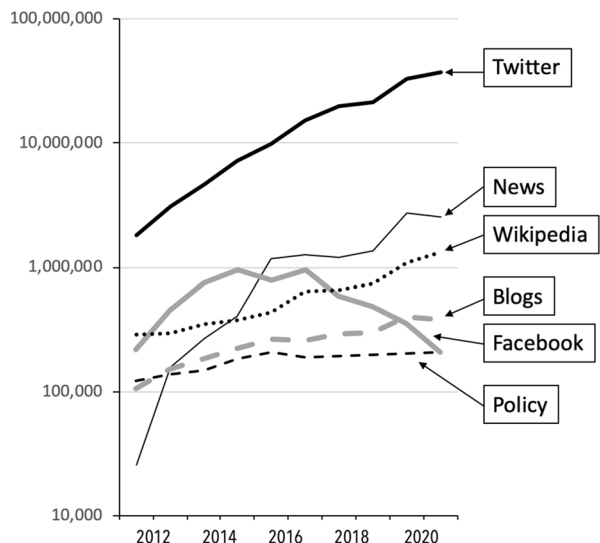


Table 2 Dissemination impact of *Behavior and Social Issues* and 20 other journals with overlapping missions

| Journal type | Journal | Lifetime | | | | | | | Selected types of mentions in past 10 years | | | | |
|-----------------------|--|----------------|----------------------|---------------------|------------|-----------|--------|----------|---|--|--|--|--|
| | | Total mentions | Mentions per article | Policy documents | News | Wikipedia | Blogs | Twitter | | | | | |
| Culturo-Behavioral | <i>Behavior and Social Issues</i> (rank among 21 journals) | 382 (21) | 3.78 (21) | 5 ^a (18) | 3 (tie 20) | 4 (20) | 1 (21) | 231 (21) | | | | | |
| Practitioner | <i>Behavior Analysis in Practice</i> | 4091 | 8.13 | 2 | 109 | 20 | 131 | 3209 | | | | | |
| | <i>J. Occupational and Organizational Psychology</i> | 4392 | 7.79 | 24 | 426 | 11 | 67 | 2903 | | | | | |
| | <i>J. of School Psychology</i> | 4144 | 7.23 | 45 | 243 | 74 | 25 | 3044 | | | | | |
| Public Policy | <i>Teaching of Psychology</i> | 6762 | 8.89 | 18 | 90 | 60 | 84 | 5985 | | | | | |
| | <i>The Counseling Psychologist</i> | 2316 | 5.25 | 43 | 178 | 76 | 50 | 1673 | | | | | |
| | <i>Analyses of Social Issues and Public Policy</i> | 15,709 | 57.12 | 6 | 118 | 9 | 53 | 1478 | | | | | |
| | <i>Behavioural Public Policy</i> | 7385 | 39.06 | 29 | 196 | 26 | 48 | 7015 | | | | | |
| | <i>Psychological Science in the Public Interest</i> | 16,491 | 144.66 | 137 | 1358 | 183 | 399 | 12,219 | | | | | |
| | <i>Psychology, Public Policy, and Law</i> | 2357 | 5.21 | 37 | 295 | 17 | 62 | 1365 | | | | | |
| | <i>Social Issues and Policy Review</i> | 1985 | 18.90 | 22 | 338 | 8 | 62 | 1396 | | | | | |
| | <i>Behavior Modification</i> | 2232 | 4.47 | 132 | 169 | 54 | 66 | 1435 | | | | | |
| | <i>Behavior Interventions</i> | 1378 | 4.23 | 1 | 3 | 3 | 36 | 1111 | | | | | |
| | <i>J. Applied Behavior Analysis</i> | 13,770 | 10.35 | 133 | 247 | 203 | 107 | 5489 | | | | | |
| Basic and Theoretical | <i>J. Contextual Behavioral Science</i> | 5506 | 11.92 | 10 | 240 | 14 | 100 | 4841 | | | | | |
| | <i>J. Positive Behavioral Interventions</i> | 1636 | 7.57 | 49 | 79 | 16 | 33 | 1308 | | | | | |
| | <i>Analysis of Verbal Behavior</i> | 925 | 4.63 | 1 | 11 | 23 | 5 | 579 | | | | | |
| | <i>Behavioural Processes</i> | 17,846 | 9.34 | 14 | 1039 | 112 | 283 | 13,934 | | | | | |
| | <i>J. Experimental Analysis of Behavior</i> | 3442 | 4.12 | 44 | 236 | 212 | 113 | 2504 | | | | | |
| | <i>Perspectives on Behavior Science</i> | 3408 | 6.51 | 9 | 30 | 93 | 17 | 2153 | | | | | |
| | <i>The Psychological Record</i> | 1654 | 4.00 | 16 | 42 | 48 | 102 | 1209 | | | | | |

^a The Altmetric database lists 6 policy mentions, but upon inspection of the source documents we could not verify one of these “Lifetime” data reflect mentions of all types (including some not described here) for all articles published in a journal since it began operating. “Mentions per article” is the mean for articles that received any mention, not for all articles published. “Past 10 years” data reflect fewer than 10 years for two journals: Behavioural Public Policy began publishing in 2017, and 2012 data appear to be missing from the [Altmetrics.com](https://www.altmetrics.com) data base for *Journal of Applied Behavior Analysis*. *Perspectives on Behavior Science* incorporates its predecessor journal, *The Behavior Analyst*

across all articles published in the journal to date, to those of selected journals relevant to each of those four missions (all $N = 5$). Most of the comparison journals should be familiar to BSI readers and thereby require no special explanation.

The leftmost data column of Table 2 shows “lifetime” total mentions, those accruing for all of a journal’s published articles. Journals vary considerably in terms of how long they have been publishing and of how many issues and articles they publish per year; obviously, those with more articles have more opportunity to earn mentions. However, the lifetime mention count remains a reasonable way to estimate a journal’s overall influence, as an analogy helps to explain. Polio vaccines have benefitted more people than COVID-19 vaccines. That polio vaccines have existed for longer and been the focus of more public distribution efforts does not diminish this fact. Similarly, for societal mentions of a journal’s contributions, more means more, regardless of other factors.

The second data column of Table 2 normalizes the results a bit by showing the density of attention received by mentioned articles (number of total mentions divided by number of articles that received mentions). We specify this denominator because it isn’t possible to determine from the [Altmetric.com](https://altmetric.com) database what percentage of a journal’s articles have received mentions, as it lists only articles that have been mentioned at least once.⁹ By focusing only on articles that received mentions, however, the second data column of Table 2 provides a built-in adjustment for the fact that not all of a journal’s articles may have been crafted with dissemination in mind (think of a methodological article like Kaplan et al., 2018; a treatise on technical terms like Baia & Sampaio, 2019; or a state-of-the field discussion like the present article). The interest here, then, is on the level of impact achieved by articles that at least some members of the public have endorsed with their attention.

Among 21 journals, BSI ranks last in terms of lifetime total mentions and mentions per article. To unpack these data a bit, the remaining columns of Table 2 show, for each of the journals, counts of some of the higher-frequency types of mentions in the database (see Fig. 2). This analysis represents the years 2012–2021, and limiting the analysis to the last 10 full calendar years largely avoids the problem of different journals having different lifespans.¹⁰ Among the journals listed in Table 2, BSI ranks no higher than 18th for any specific form of mention. For interested readers, Table 3 lists all BSI articles that have been mentioned in policy documents, news articles, blogs, and Wikipedia pages.

A different approach to comparing journals is to consider only the most attention-grabbing instances from each, which we define as those earning a journal’s 20 lifetime highest Attention Scores (as per BSI in Table 1). For journals in general,

⁹ Examining tables of contents for BSI’s first 30 volumes, we counted 442 published articles of all types. Based on this denominator, about 23% of BSI articles have received altmetric mentions. What’s typical is unclear because we didn’t repeat this tedious evaluation for other journals, but presumably CBS scholars would hope for more than one in four BSI articles get some outside attention.

¹⁰ This is also the timespan during which the most mentions occurred generally. Because the [Altmetric.com](https://altmetric.com) database is created by monitoring electronic sources, only a small percentage of its mentions date from before 2012.

the Attention Score distribution is skewed such that low scores are common and high scores rare (Livas & Delli, 2018), so it's possible that a journal with limited attention overall could produce viral "greatest hits" that rival those of other journals. However, Fig. 3 provides no support for this hypothesis where BSI is concerned. It compares BSI to some familiar applied and basic/theoretical behavior analysis journals, considering only articles from the interval during which BSI has published under its current name (1991–present; see Luke et al., 2017). Although in some cases ordinate scaling makes details difficult to see, there is no overlap between BSI and any of the other journals at any point in the Top 20 range of Attention Scores (and note that the comparison journals chosen for Fig. 2 are not those from Table 1 with the most dissemination impact). The discrepancy between BSI and higher-attention journals is much greater than what's shown in Fig. 2 – for instance, compare BSI's top Attention Score (38) to that of *Psychological Science in the Public Interest* (2051) or *Analyses of Social Issues and Public Policy* (3796). BSI's top Attention Score would be #61 and #24, respectively, for those journals.

It is worth considering that CBS may be a "slow burn" movement that, following a long period of incubation, is only now beginning to find its way to dissemination impact. Figures 4 and 5 test this hypothesis. Figure 4 shows Attention Scores for all BSI articles in the [Altmetric.com](#) database with an impact score of 1 or higher, organized by year of publication. Amidst a lot of inter-article variation, which is expected, there is no systematic evidence of increasing dissemination impact across years: The trend line (a least-squares linear fit excluding one outlier data point) is nearly flat.¹¹ Figure 5 shows cumulative records of several types of altmetric mentions of BSI (each data point represents cumulative mentions up to and including articles of a given year). A clear positive trend is evident for social media mentions via Twitter, which have increased dramatically in the past 5 or 6 years, and at a faster rate than in the [Altmetric.com](#) database overall.¹² The figure shows no dramatically increasing trend for other types of mentions, despite the increased prevalence of those types in the database overall (Fig. 2). In summary, BSI is gaining Twitter mentions faster than might be expected, but other kinds of mentions more slowly than might be hoped for.

¹¹ There are two competing influences in the [Altmetric.com](#) database. On the one hand, older articles benefit from having had the most time to accumulate mentions. On the other hand, older articles are disadvantaged because they were published before most of the electronic sources monitored by [Altmetric.com](#) existed. We suspect that the latter is the stronger influence given the explosion in recent years of activity in sources like social media and electronic news outlets (see Fig. 2). The expectation, therefore, is that the typical journal would see an increase in mentions per article over the past decade or so.

¹² Whether these mentions are something that CBS scholars should particularly value is something that could be debated, for at least three reasons. First, social media posts can be superficial and unoriginal (e.g., Twitter re-tweets). Second, some posts are "institutional," that is, originating from professional societies and publishers rather than the stakeholders who are the focus of the present discussion. Third, social media posts don't necessarily say *nice* things about a given article. Our view is essentially that, for a fairly young field that is fighting for recognition, attention is better than no attention. If the goal is to be part of a societal conversation, then there may be value in any sort of mention that increases CBS visibility. These points aside, note that social media offer a kind of practical utility that most other kinds of altmetric mentions do not: nearly immediate attentional feedback. Tweets, for instance, can start appearing on the day article is released.

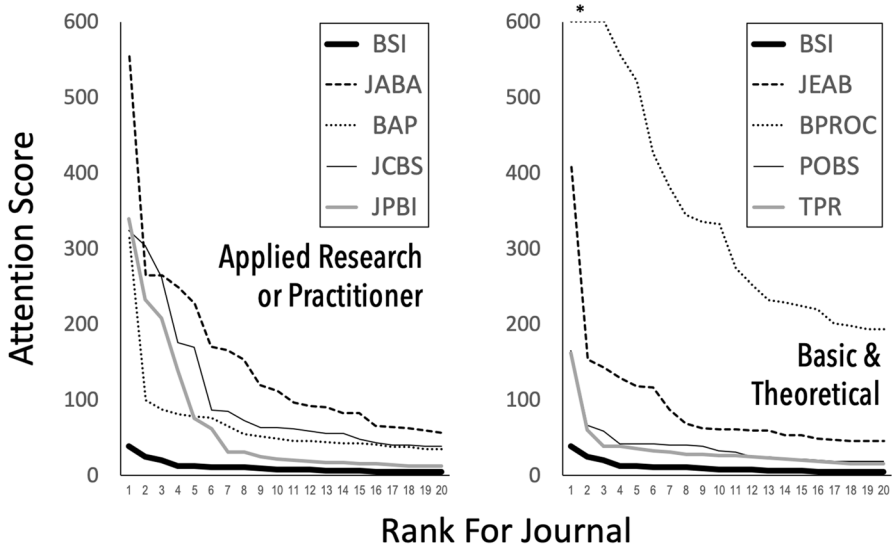


Fig. 3 Top 20 attention scores for *Behavior and Social Issues* and several comparison journals. Journal abbreviations: JABA = *Journal of Applied Behavior Analysis*; BAP = *Behavior Analysis in Practice*; JCBS = *Journal of Contextual Behavioral Science*; JPBI = *Journal of Positive Behavior Interventions*; JEAB = *Journal of the Experimental Analysis of Behavior*; BPROC = *Behavioural Processes*; POBS = *Perspectives on Behavior Science* (incorporates predecessor journal, *The Behavior Analyst*); TPR = *The Psychological Record*. Asterisk indicates that the top two Attention Scores for BPROC (1675 and 651) are not shown due to scale truncation

A final point of interest regarding altmetric data concerns who is doing the mentioning. For a given journal, the [Altmetric.com](https://www.altmetric.com) database contains a breakdown of this for certain kinds of mentions. For instance, the Table 3 lists the specific mention sources for BSI in the categories of public policy documents, news articles, blogs, and Wikipedia pages. For individual articles, the data base also tallies the types of Twitter and Facebook users that have posted about a given article (self-identified

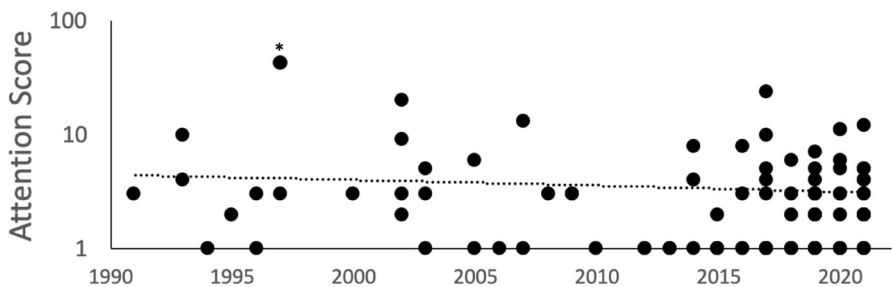
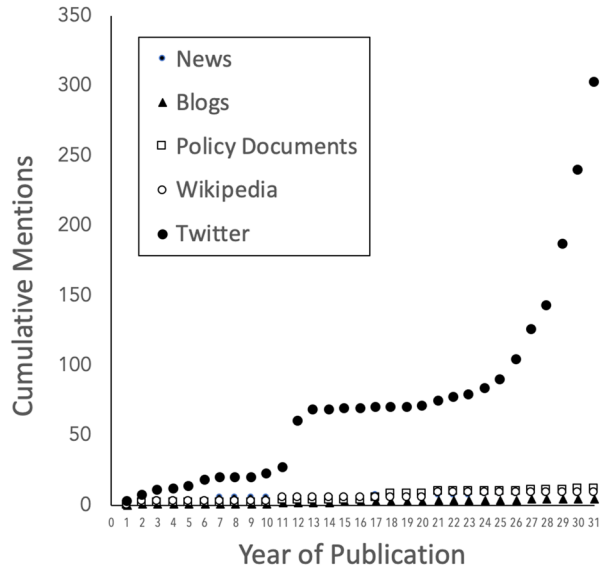


Fig. 4 Attention scores for *Behavior and Social Issues* articles in the [Altmetric.com](https://www.altmetric.com) database, by year of publication. Trend line was determined by least-squares linear regression omitting the outlier point indicated with an asterisk

Fig. 5 Cumulative totals of several types of altmetric mentions for *Behavior and Social Issues* articles



Members of the Public, Scientists, Practitioners, and Science Communicators), and shows the contents of individual tweets. Presumably, the best dissemination impact is shown when favorable mentions come from people other than scientists. Unfortunately, this information is not available in bulk for an overall journal; it must be accessed on an article-by-article basis (see Critchfield & Dixon, 2022).

The database does summarize countries of origin for mentions arising in Twitter, Facebook, news sources, and policy documents. This information is worth noting but must be taken with a grain of salt due to the generic limitation that digital data sources are biased toward countries where computers and internet access are plentiful. From the [Altmetric.com](https://www.altmetric.com) data base overall, here is the percentage of origin-labeled mentions arising from four English-favoring, “developed” countries (United States, United Kingdom, Canada, and Australia): Twitter (58%), Facebook (68%); News (80%), and Policy Documents (83%). In BSI mentions (Table 1), one sees the same qualitative bias: Twitter (66%), Facebook (90%), News (80%), and Policy Documents (53%). This matters to the extent that a mission of “saving the world” implies *all* of the world. The four countries just listed comprise less than 6% of the world population, so no matter how much altmetric attention a journal or article can boast of, this represents a tiny slice of the world that needs solutions to Big Problems.

Discussion: Can you “Save the World” Without Engaging it?

No claim is made here that altmetric data tell the whole story of dissemination impact. It is easy to think of many ways, beyond those quantified in altmetric mention counts, that members of the public could demonstrate that they have

Table 3 Mentions of BSI articles in policy documents, news articles, blogs, and Wikipedia pages

| Policy documents | Source Institution (Country), Document Name (Date) | URL* |
|---|--|---|
| BSI Article Mentioned | | |
| Guerin & de Oliveira Ortolan (2017). Analyzing domestic violence behaviors in their contexts: Violence as a continuation of social strategies by other means. | Analysis & Policy Observatory (Australia), <i>Transforming legal understandings of intimate partner violence</i> (2019) | https://apo.org.au/sites/default/files/resource-files/2019-06/apo-nid244616_1.pdf |
| Signal & Taylor (2008). Propensity to report intimate partner violence in Australia: Community demographics. | Analysis & Policy Observatory (Australia), <i>ACT Family Violence Intervention Program review</i> (2012) | https://apo.org.au/sites/default/files/resource-files/2012-10/apo-nid31515.pdf |
| | Analysis & Policy Observatory (Australia), <i>Responding to intimate partner violence victimisation: effective options for help-seeking</i> (2010) | https://apo.org.au/sites/default/files/resource-files/2010-03/apo-nid20746.pdf |
| Fournier, et al. (2007). Human-animal interaction in a prison setting: Impact on criminal behavior, treatment progress, and social skills. | Analysis & Policy Observatory (Australia), <i>Assessing the social climate of Australian prisons</i> (2011) | https://apo.org.au/sites/default/files/resource-files/2011-09/apo-nid26191.pdf |
| | Canadian Parliament (Canada), <i>Mental health and drug and alcohol addiction in the federal correctional system</i> (2010) | https://www.ourcommons.ca/Content/Committee/403/SECUR/Reports/RP4864852/securep04-securep04-e.pdf |
| News articles | | |
| BSI Article Mentioned | | |
| Sidman (1993). Reflections on behavior analysis and coercion. | Source Publication (Country), Article Name (Date) | URL* |
| | Newsbreak (US), Punishing behavior makes it worse (2021) | http://ct.moreover.com/?a=46305515045&p=1pl&v=1&x=yEIV-dgCbjw3TXJEIBHF-g |
| | Newsbreak (US), What B.F. Skinner Knew About Behavior (2021) | http://ct.moreover.com/?a=46231138080&p=1pl&v=1&x=NfBbFAXfBWHWH-6qlI79A |
| | ThriveGlobal (US), Defending Yourself From Misinformation via Neuroscience (2020) | http://ct.moreover.com/?a=43534844268&p=1pl&v=1&x=XXM-X-KdlZ7_qYte1TojDsgg |
| | Dallas Morning News (US), How to use neuroscience to stop falling for fake news (2020) | http://ct.moreover.com/?a=43457933926&p=1pl&v=1&x=zPKgGSVnWfIGDxqtZ_pTUg |

Table 3 (continued)

| | | |
|---|---|--|
| <p>Knapp (1997). Behaviorism and public policy: BF Skinner's views on gambling.</p> | <p>MSN (US). Así atraen las casas de juegos de azar a clientes cada vez m-s jÚvenes (2019)</p> | <p>https://www.msn.com/es-es/dinero/finanzas-personales/as/%C3%AD-atraen-las-casas-de-juegos-de-azar-a-clientes-cada-vez-m-%C3%A1s-%C3%B3venes/ar-AABOCPr?srcref=rss</p> |
| <p>Sasson & Paul (2014). Labeling acts of sexual violence: What roles do assault characteristics, attitudes, and life experiences play?</p> | <p>La Nueva Espaða (Spain). Así atraen las casas de juegos de azar a clientes cada vez m-s jÚvenes (2019)</p> | <p>https://www.lne.es/sociedad/2019/05/23/atraen-casas-juegos-azar-clientes/2476929.html</p> |
| <p>Fournier, et al. (2007). Human-animal interaction in a prison setting: Impact on criminal behavior, treatment progress, and social skills.</p> | <p>Diario de Asturias (Spain). Así atraen las casas de juegos de azar a clientes cada vez m-s jÚvenes (2019)</p> | <p>https://www.elcomercio.es/sociedad/casas-juegos-azar-jovenes-20190523113631-nt.html</p> |
| <p>Blogs</p> <p>BSI Article Mentioned</p> <p>Tsipursky, et al. (2018). Fighting fake news and post-truth politics with behavioral science: The pro-truth pledge.</p> <p>Bell & Naugle (2005). Understanding stay/leave decisions in violent relationships: A behavior analytic approach. Wikipedia pages</p> <p>BSI Article Mentioned</p> | <p>The Conversation (Australia). Así atraen las casas de juegos de azar a clientes cada vez m-s jÚvenes (2019)</p> <p>Vox.com (US). 7 ways to make girls safer without discriminating against trans kids (2017)</p> <p>Psychology Today (US). Do animal-assisted interventions work, and for whom? (2016)</p> <p>Source Blog, Post Name (Date)</p> <p>Skeptical Science, Pro Truth: A pragmatic plan to put truth back into politics (2020)</p> <p>JPMS Medical Blogs, Male dominance over female in Pakistan (2017)</p> <p>Source Page Title (Language) (Date)</p> | <p>http://theconversation.com/asi-atraen-las-casas-de-juegos-de-azar-a-clientes-cada-vez-mas-jovenes-117354</p> <p>http://www.vox.com/identities/2017/2/25/14672366/women-girls-safety-no-discrimination</p> <p>https://www.psychologytoday.com/blog/how-do-life/201606/do-animal-assisted-interventions-work-and-whom</p> <p>URL*</p> <p>http://www.skepticalscience.com/news.php?h=4858</p> <p>http://blogs.jpmsonline.com/2017/12/17/male-dominance-over-female-in-pakistan/</p> <p>URL*</p> |

Table 3 (continued)

| | | |
|---|---|--|
| Schliger (2002). Not so fast, Mr. Pinker: A Behaviorist Looks at the Blank Slate. A Review of Steven Pinker's <i>The Blank Slate: The Modern Denial of Human Nature</i> . | Clean Slate (Russian) (2021) | http://ru.wikipedia.org/?diff=prev&oldid=117454600#altmetric_citation_2 |
| Simon (2017). Why Norwegians Don't Have Their Pigs in the Forest: Illuminating Nordic 'Co-operation'. | The Blank Slate (English) (2018) | http://en.wikipedia.org/?diff=prev&oldid=874028528#altmetric_citation_1b848033-08a4-4d7f-9032-8ba56cd8b59f |
| | Swedish Model (Swedish) (2021) | http://en.wikipedia.org/?diff=prev&oldid=1019950778#altmetric_citation_968c3d01-a10c-4a64-a0c9-1adc9a2e29d5 |
| | Nordic Model (Spanish) (2019, 2020) | http://pt.wikipedia.org/?diff=prev&oldid=56131673#altmetric_citation_0 http://es.wikipedia.org/?diff=prev&oldid=129476996#altmetric_citation_0 |
| | Nordic Model (English) (2019) | http://en.wikipedia.org/?diff=prev&oldid=903702300#altmetric_citation_1fc9f9b4-2730-4c89-be08-21113a13e3251 |
| Wyatt (2002). What was under the McMartin preschool? A review and behavioral analysis of the "tunnels" find. | Ted Gunderson (English) (2021) | http://en.wikipedia.org/?diff=prev&oldid=1019950778#altmetric_citation_968c3d01-a10c-4a64-a0c9-1adc9a2e29d5 |
| | McMartin Preschool Trial (English) (2019) | http://en.wikipedia.org/?diff=prev&oldid=882996866#altmetric_citation_9457a4b1-f2a6-4c0b-b5f7-a2f22bda8981 |
| | Los Horcones (Spanish) (2017) | http://fr.wikipedia.org/?diff=prev&oldid=137610820#altmetric_citation_0 |
| Lamal, P. (2009). From rats to pigeons to cultural practices: A review of <i>Beyond the box: B.F. Skinner's technology of behavior from laboratory to life, 1950s to 1970s</i> , by Alexandra Rutherford. | Los Horcones (English) (2016, 2016) | http://en.wikipedia.org/?diff=prev&oldid=754802440#altmetric_citation_30b5ede1-b276-45bc-94d6-e1f9810ee9fb http://en.wikipedia.org/?diff=prev&oldid=754954500#altmetric_citation_fc27d82b-3ab0-4c61-9c18-7a2d4dd87a06 |

Table 3 (continued)

| | | |
|--|-----------------------------------|---|
| Ward et al., (2009). An experimental analysis of cultural materialism: The effects of various modes of production on resource sharing. | Behaviorism (English) (2014) | http://en.wikipedia.org/?diff=prev&oldid=612077179#altmetric_citation_8 |
| Greenwood (1997). Classwide peer tutoring. | Classwide Peer Tutoring (English) | http://en.wikipedia.org/?diff=prev&oldid=607600038#altmetric_citation_0 |

* URLs supplied by [Altmetric.com](https://www.altmetric.com) on March 3, 2022

noticed and understood sociocultural behavior analyses. It is also easy to think of possible validity challenges that might make at least some Attention Scores an imperfect measure of dissemination impact.¹³ And of course there is the demographic problem just noted. In estimating the value of altmetric data as a source of feedback for a developing field that is concerned with dissemination impact, one is reminded of Montrose Wolf's thoughts about social validity procedures. "Something of social importance would *have* to be judged by *someone* as having value to society", mused Wolf (1978, p. 203, emphasis added), but he could think of no way to measure those judgments except by asking people to make verbal reports. And Wolf knew that verbal-report measurement has many potential problems. In the end, he decided that it was better to know what verbal reports can tell us than not to know anything. Analogously, altmetric data are not perfect, but in the absence of other objective means of measuring dissemination impact, perhaps they will do.

What altmetric data tell us about the dissemination impact of CBS published in BSI provides considerable food for thought. One possible silver lining in the present report is that BSI's altmetric attention profile is roughly similar to that of several familiar behavior analysis journals. BSI's mean mentions per article, for instance, is not too different from that of *Behavioral Interventions*, *The Analysis of Verbal Behavior*, *Journal of the Experimental Analysis of Behavior*, and *The Psychological Record*. When BSI is compared to many other journals, particularly those emphasizing public policy, it seems obvious that there is considerable room for improvement in the level of societal attention that CBS articles attract.

To reiterate a point from our Introduction, societal attention, as defined here, might be considered the low-hanging fruit of dissemination. Even if the entire world were talking constantly about culturo-behavioral behavior analyses, it would not necessarily get "saved" – that would require implementing systems-level interventions. All that is claimed for present purposes is that getting the word out about CBS may promote one day being *able* to adopt and implement real change, and that a field that is serious about getting the word out should, if it is evidence-based, be systematically monitoring its progress on this front. Consider the present data as providing a baseline from which to move forward.

How might CBS achieve more dissemination impact? Before specific strategies are suggested, a critical step is to embrace the model of accountability already operating in many areas of behavior analysis. In this regard, the most important thing culturo-behavior scientists can do is also the most general: Operate as an "experimental community" whose practices evolve based on objective feedback about their success (e.g., Malott, 2021). This applies both to topics selected for study and means of communicating about them. Regarding topics, it has often been noted that CBS suffers from a shortage of material resources and properly trained professionals (e.g., Mattaini, 2013). This is a strong argument for using

¹³ For instance, based on casual observation, it appears that some of the social media attention garnered by some journal articles consists of tweets issued by a publisher or scholarly society, and retweets of those. Since these mentions originate from scholarly sources they clearly violate the spirit of dissemination impact.

the field's limited person power strategically, for instance, by focusing on a few Big Problems with the greatest chances of remediation, rather than on the whole smorgasbord of them that traditionally have been said to define the field (e.g., see Cihon & Mattaini, 2021; Mattaini, 2013). It's reasonable to suggest that the Big Problems most likely to be solved are those for which the public shows the most interest in sociocultural behavior analyses. Dissemination impact data may be useful in identifying which Big Problems those are (falling in line with Wolf's (1978) vision for social validity). We therefore recommend that every CBS scholar dig deep into altmetric data to get an empirical sense of just how much societal interest really exists for their preferred topics of investigation. The results are not always intuitive and, in some cases, may be counter-intuitive.¹⁴ Tracking these data may better inform effort allocation by guiding both research and dissemination focus.

Regarding communication, we already know that behavior analysts can struggle with making their insights sound palatable to outsiders. Therefore, one critical focus involves how to describe one's work clearly and persuasively, and behavior analysis is just beginning to grapple with some possible directions for improvement (Becirevic et al., 2016; Chan et al., 2021; Cihon et al., 2016; Critchfield, 2014; Critchfield et al., 2017; Foxx, 1996; Hinline, 2018; Lindsley, 1991; Mace & Critchfield, 2010; Wolf, 1978). Dissemination impact data can be used to glean clues about which communication strategies work best. Such data might also shine light on the value of crossing disciplinary boundaries in collaboration, an arrangement often discussed as having profound benefits for efficiency in communications and overall influence.

Another important focus involves making sure one's work is displayed where it can be encountered by the right people – and in most cases this does not mean other behavior analysts (e.g., Miller et al., 1992). The present analysis suggests that, compared to BSI, journals with larger and more mainstream circulation bases offer greater potential for attracting attention. From Table 2, for instance, compare BSI's 382 total altmetric mentions to the 15,709 of *Analyses of Social Issues and Public Policy*.¹⁵ Such data suggest that behavior analysis journals may not be the most effective conduit for dissemination.

Here one is reminded of Skinner's (1993) comment on the tendency for behavior analysts to congregate in comfortable communities of like-minded

¹⁴ For example, we think that one of the most culturally important works in the history of behavior analysis is Hart and Risley's (1995) *Meaningful differences in the everyday experiences of American children*. Massive societal ripple effects can be expected from promoting better child language development (e.g., Suskind et al., 2015). Yet, the [Altmetric.com](https://www.altmetric.com) database shows exactly zero mentions of this work in public policy documents.

¹⁵ By the way, this phenomenon – of greater attention being available outside of behavior analysis publications than within – is not limited to altmetric attention. Most journals are cited more often than BSI; for instance, compare BSI's average citations per article (about 2) to that of *Behavioural Public Policy* (5), *Psychology, Public Policy, and Law* (27), and *Social issues and Policy Review* (38). Moreover, most of BSI's citations (about 97%) come from within behavior analysis (including 31% from BSI itself). We found only a handful of citations of BSI articles in journals devoted to dealing with specific Big Problems (*Sustainability, Atmosphere*, etc.). Data obtained from Web of Science on February 9, 2022.

individuals: “We have been accused of creating our own ghetto.... Rather than break out of the ghetto, I think we should strengthen its walls” (p. 24). We agree with Skinner’s view where the *development* of solutions is concerned. Getting the analysis of behavior right is a prerequisite to doing anything useful in the world; therefore it makes sense to surround oneself with people who are most likely to help with getting it right. Behavior analysis journals serve the essential function of allowing behavior analytic work to be read by those with the greatest capacity to understand and refine it.

However, we disagree with Skinner where the *dissemination* of solutions is concerned. Walls do not make good neighbors¹⁶, at least when the goal is to share scientific insights, and the readership of behavior analysis journals may be limited mainly to behavior analysts (e.g., Critchfield, 2002; Friman, 2014; Krantz, 1971; Poling, 2010), raising the risk that “technologies developed by applied behavior analysts... mostly lie unnoticed in our ever-proliferating professional journals” (Stolz, 1981, pp. 491–492). “Saving the world” therefore requires outreach, and to disseminate their solutions culturo-behavior scientists may need to rely on mainstream journals (for persuasive arguments along these lines, see Friman, 2010, 2014). It is no great secret, of course, that this kind of outreach is difficult. There can be a steep learning curve for writing in a style that will suit mainstream journals (e.g., Friman, 2014). Ditto for designing studies whose methods will receive mainstream approval. However, as with other skill acquisition challenges, the tonic is lots of opportunities to respond under conditions of feedback, and the steeper the expected learning curve, the sooner practice should begin (Ericsson, et al., 2005).

Of course, some culturo-behavior scientists are already publishing in journals outside of behavior analysis, and this creates two opportunities. The first opportunity is to test the speculation that mainstream journals are a superior springboard to dissemination impact. One useful follow-up to the present analysis will be to evaluate the altmetric profiles of CBS articles that already have been published in mainstream journals.¹⁷ This may provide insights on where CBS articles are achieving the most attention, and on what kinds of CBS work have the best odds of receiving dissemination-impact traction with general audiences. The second opportunity, assuming the first yields anything interesting, is for those who are already achieving dissemination impact via mainstream journals to work with other culturo-behavior scientists to share their outreach expertise, so that more CBS work can be placed in front of more eyes.

Skinner’s (1993) “ghetto” comment, mentioned earlier, raises the possibility that behavioral journals can serve a sort of incubator function, fueling the

¹⁶ Apologies to Robert Frost.

¹⁷ To illustrate the tenor of the proposed analyses, consider as a case study Tony Biglan, a prolific researcher whose work is generally considered to fall under the umbrella of CBS. Biglan has published 2 BSI articles, neither of which has received an altmetric mention. He has published 81 articles in mainstream journals, and at least 11 in behavior analysis journals other than BSI, that have received mentions. Forty of those articles have Attention Scores of at least 10, which places them among the top 25% of all articles in the [Altmetric.com](https://www.altmetric.com) data base. Numbers like these, if replicated across other researchers, would support the proposition that mainstream journals may be a preferred way to seek dissemination impact.

development of solutions that later are disseminated by other means. This, in turn, raises the question of how one might know when a solution has been sufficiently developed to merit dissemination. Dissemination impact data can provide useful guidance. For instance, preliminary work that begins to attract altmetric mentions may be ripe for taking to the next level. These mentions are objective evidence that a mainstream community took interest in the work and thus may be receptive to adopting and supporting it. By contrast, work that achieves little dissemination impact may require additional development before it is ready to disseminate or, in the spirit of using limited disciplinary resources efficiently (Mattaini, 2013), might be a candidate dropping in order to focus on more promising alternatives.

Where the quest for societal acceptance of behavioral solutions is concerned, it seems a good idea to follow another of Skinner's admonitions: "Regard no practice as immutable. Change and be ready to change again" (Skinner, 1979, p. 346). Work that meets society's needs and interests (defined in part by how members of society understand and react to it) has a chance of making a difference. Work that doesn't is unlikely to better the world and must therefore be either modified or replaced. The key is to know which work is which, and dissemination impact data reveal, in one key way, which efforts do and do not meet society's needs and interests. In this vein, the present data are a specific instance representing a general ideal. If we have not persuaded that altmetric data provide potentially informative feedback about dissemination impact, let the reader suggest a better source of data. If we have not persuaded that the available data portray CBS as having not yet achieved significant dissemination impact, let the reader make an alternative data-based case. These are matters on which there is room for debate. The take-away should be that, to qualify as an evidence-based behavioral enterprise, and to have the best odds of a successful developmental trajectory, CBS must remain in close contact with, and be responsive to, objective feedback about its progress toward acquiring dissemination impact. On this there should be no debate.

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Data Availability The data analyzed for this investigation are available in the Web of Science and [Altmetric.com](https://www.altmetric.com) databases.

Declarations

Ethical Review and Human Subjects Protections Informed Consent and Ethics Board review are not relevant to this work because the data come from public, archival sources rather than original investigations with human or nonhuman participants.

Competing Interests The authors declare no competing interest, financial or otherwise, related to this article.

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