

The Future of First Wave Behavior Therapies



Bruce A. Thyer

The focus of this chapter will be upon the future directions that first-wave behavior therapies seem to be heading. By the first wave behavior therapies I will be principally reviewing those forms of assessment and intervention largely derived from the conceptual framework of operant learning. Other early behavior therapies that relied more on respondent and observational learning, such as systematic desensitization and other forms of ‘reconditioning’ (e.g. exposure to fear evoking stimuli in order to desensitize someone to objects, animals or situations which produced unrealistically high anxious reactions) will be reviewed elsewhere in this volume, as will the so-called cognitive behavior therapies.

First wave behavior therapies based on operant learning principles initially tended to focus on eliminating dysfunctional behavior and on promoting more adaptive skills, without an empirical assessment of the causes of the problem. For example, if a child was displaying large amounts of out-of-seat behavior in the classroom, a program to reinforce in-seat behavior, and perhaps to punish out-of-seat behavior, might be implemented. If the child responded by remaining attentively seated more often, this was seen as a successful outcome. If the problem was self-injurious behavior by a young person with a serious intellectual disability, a similar program of reinforcing keeping one’s hands away from the head, and applying mild aversive consequences contingent on head-banging might be applied. Early published examples of this type of behavior modification can be found in Isaacs, Thomas and Goldiamond (1960) who used the contingent delivery of chewing gum to reinforce verbal behavior among two chronically psychotic persons with mutism. Similarly, Ayllon (1963) used mild punishment to reduce food stealing, satiation to reduce towel hoarding, and mild punishment to reduce the wearing of excessive amounts of clothing, with a 47 year old woman diagnosed with schizophrenia.

B. A. Thyer (✉)

College of Social Work, Florida State University, Tallahassee, FL, USA

Optentia Research Unit, North West University, Vanderbijlpark, South Africa

e-mail: bthyer@fsu.edu

These early efforts at operant-based treatment, which eventually evolved into the contemporary field known as behavior analysis, rarely attempted to consider the underlying *functions* of the problematic behaviors. It was seen as sufficient to “fix the problem” and to a very great degree this approach was successful (Grossberg, 1964). Over time behavior analysis became recognized as a generally effective approach to helping clients, albeit more so in the fields of education and developmental disabilities than in mental health.

As the field progressed, attention was drawn to cases when operant-based treatment either did not work, or produced only fleeting gains (e.g., Lazarus, 1971, Mausner, 1971), and it became obvious that the lack of attention to the *causes* maintaining the problematic behavior was responsible for some instances of treatment failure. In the 1980s the assessment methodology known as functional analysis entered the armamentarium of behavior analysts, wherein diligent efforts are undertaken to empirically ascertain the causes potentially maintaining a client’s problematic behavior (e.g., Iwata et al., 1982; Bailey & Pyles, 1989). Rather than immediately and directly implementing a behavior change technique, in functional analysis efforts are made to examine the antecedents and consequences surrounding the occurrence of the problem behavior, and potentially maintaining controlling contingencies that are tested via temporary experimental manipulation.

A given problem behavior could potentially be maintained by external positive reinforcement (e.g., attention), negative reinforcement (e.g., escape from an unpleasant situation), or perhaps by self-reinforcement (e.g., scratching an itch). A problem, such as school avoidance, could be caused by severe fears of something at the school environment, inadvertent reinforcement provided by the parents for staying home (e.g., more gaming time), so-called separation anxiety, or a child’s not wanting to leave mother alone for fear she might be abused by the father if the child is not present. Each different maintaining factor requires quite different approaches to treatment.

For treatment to be successful over the long run, determining the existing contingencies maintaining the problem behavior is crucial. The behavior analyst might take a baseline of the problem behavior under varying conditions, then change only one consequence, and see its possible effect. By evaluating the frequency of the problem under these varying conditions, one can gain a more accurate sense of the maintaining conditions, and then implement a suitable approach, such as withdrawing reinforcement, reinforcing an incompatible behavior, extinguishing escape behavior, or removing opportunities for self-reinforcement. An example of the latter might be having a client who scratches himself excessively wear gloves, have their fingernails well-trimmed, or apply anti-itch cream.

Treatments based on functional assessment have a higher probability of being successful in the long run than applying a one-size-fits-all approach. Hanley et al. (2003) conducted a comprehensive review of the use of functional analysis in behavior analysis and found the approach to be widespread and highly effective in resolving behavioral difficulties. As we shall see below, behavior analysts are actually required by their code of ethics to conduct a functional analysis prior to implementing a behavior reduction plan (BACB, 2016, see Section 3.01). The

implementation of functional analysis, along with other factors, has significantly elevated the conceptual sophistication of the field.

Behavior analysis has made significant advances in the past few decades. Below I will outline some of the major developments and discuss both positive and negative aspects of each.

Signs of Professionalization

The field focused on the sociology of the professions has established a number of criteria through which a given discipline can be considered a genuine profession. These include such factor as recognition and endorsement by the larger society, solid professional associations, being based on a recognized body of specialized knowledge, a code of ethics, and the requirement of specific training, among others (see Larson, 1978). Here are some of the advances behavior analysis has made in this regard.

Organizational Infrastructure

The field of behavior analysis is well-supported by a number of national, regional and state associations that are academically-based and that practicing behavior analysts can join. The two major ones at the national level are the *Association for Behavior Analysis - International* (ABAI) (<https://www.abainternational.org/welcome.aspx>) and the *Association of Professional Behavior Analysts* (APBA, <https://apbahome.net/>) ABAI was founded in 1974 and has about 7000 members. It sponsors a number of national conventions each year; supports a stable of quality behavior analytic journals; accredits doctoral, masters and bachelor's degree programs; hosts an employment listing service, and sponsors continuing education (CE) programs in behavior analysis and several related fields, such as psychology and social work. APBA was founded in 2007 and has a clear focus on meeting the needs of practitioners in the field. In many ways APBA mirrors the activities of the ABAI. APBA hosts an annual conference, sponsors CE programs, undertakes legislative advocacy related to behavior analytic services, promotes a model legislative act governing the legal regulation of behavior analysts, and has a number of state chapters. Both ABAI and APBA endorse professional liability insurance programs its members may purchase. The *European Association for Behavior Analysis* (<https://www.europeanaba.org/>) and within-country associations around the world further support the development of the field.

A relatively small number of psychologists (about 500) remain active members within the American Psychological Association and form *Division 25 – Behavior Analysis*. It is more academically based than practice-oriented and includes important issues, such as basic research in the experimental analysis of human and animal

behavior and the philosophy of behaviorism (topics of not much interest to practitioners). It sponsors some awards in the field of behavior analysis and has a small number of papers and panels presented during the annual convention of the APA.

I am a member of Division 25 and my sense is that its members are older than the majority of practicing behavior analysts, who gravitate more to the ABAI and APBA. While not absolute, the budding off of behavior analysis from the field of psychology is nearly complete (Thyer, 2015a). Many licensed health care providers claim human behavior and its modification within its legal scope of practice, and to be science-based (this varies greatly obviously), claims isomorphic with those of behavior analysis. Fields such as clinical social work, marriage and family therapy, mental health counseling, speech and language pathology, teachers, business managers, all can potentially make use of the *methods* of behavior analysis. That they typically do this less well than qualified BCBAs seems apparent (I am a licensed clinical social worker and very familiar with that field), but it is unlikely that behavior analysts will ever successfully stake out an exclusive and legally supported claim to the professional practice of using operant methods to modify human behavior.

Credentialing and Legal Regulation

Unlike the ABAI and APBA, which are membership organizations, the *Behavior Analyst Certification Board* (BACB, <https://www.bacb.com>) was founded in 1998 to nurture the legal regulation and state-level credentialing of the practice of behavior analysts. One does not join the BACB as a member. The BACB develops and maintains a high quality set of credentialing examinations, created consistent with the highest psychometric standards, to support several levels of credentialing. These are the Board Certified Behavior Analyst (BCBA, requiring a master's degree), the Board Certified Associate Behavior Analyst (BCaBA, requiring a bachelor's degree), and the registered behavior technician (RBT, requiring a high school diploma). BCBAs holding a doctoral degree may also qualify to use the designation of BCBA-D but there are no additional requirements for this designation. All these credentials require formal training in ABA, passing a valid examination, adherence to the professional code of ethics (formally called the *Professional and Ethical Compliance Code for Behavior Analysts*, <https://www.bacb.com/ethics-information/ethics-codes/>), and maintaining ones skills through continuing education (CE) requirements. Recertification is required every two years.

The two major initiatives of the BACB involve the development and administration of the credentialing examinations, and promoting the state-level licensure of qualified behavior analysts. Both initiatives are extremely successful. At least 31 states now legally regulate or license the practice of behavior analysis and passing the appropriate BCBA examination is included in to each state's legislation as a requirement to be licensed. Some states (e.g., Florida) do not legally regulate the practice of behavior analysis via licensure but may provide for a lower level of regulation called certification, but also involving the BACB examinations.

The BACB actively works with the states lacking licensure to help obtain it, and refine the licensure acts in states which already have licensure. As of the end of 2020, there were over 42,000 BCBAs, over 4500 BCaBS, and about 83,000 RBTs. The BACB focuses on providing certifications to residents in the USA, Canada, and the UK, although residents of other countries may be permitted to apply in the future. The BCAB program is accredited by the National Commission for Certifying Agencies, a highly respected agency. The demand for persons holding the BACB credentials is rapidly increasing and salaries are generally good. For example, in 2018 there were over 16,000 job postings for BCBAs, increasing to almost 29,000 in 2019 (BACB, 2020b).

Insurance Reimbursement and Billing Codes

Related to the growth of an extensive and valid credentialing program for professional behavior analysts, is the practice of permitting BCBAs to obtain health insurance reimbursement for their services. Behavior analysis is a fairly intensive treatment modality and few families have the financial wherewithal to pay for ABA out of pocket, so having insurance reimbursement available makes these services more widely accessible and also makes ABA practice more financially feasible for BCBAs. When federal and state insurance programs, such as Medicaid and the widely available military insurance program known as Tricare, decided to reimburse for BCBA services, this acted as a sort of *imprimatur* which encourages other state and private insurance programs to similarly support behavior analysis. As noted by Trump and Ayres (2020) “Recent insurance reforms in 47 states, the District of Columbia, and the U.S. Virgin Islands require companies to offer, or cover, behavior-analytic services to individuals diagnosed with autism spectrum disorder.” (p. 282). This is an incredible impetus to the spread of behavior-analytic treatment.

The ABAI collaborates with a multidisciplinary Billing Codes Commission which is aimed at developing Current Procedural Terminology (CPT) codes for BCBAs and other professionals to use to bill for behavior analysis assessment and treatment services. This is important because the improper use of a CPT code can result in non or delayed insurance reimbursement (Staff, 2020).

Practice

The practice of behavior analysis is growing exponentially. As noted by the BACB (2020a), “Demand for behavior analysts is increasing: Annual demand for individuals holding BCBA/BCBA-D certification has increased each year since 2010, with an 80% increase from 2018 to 2019. In addition, increases in demand occurred in every state since 2010” (p. 1, bold in original).

The practice of behavior analysis is not limited to providing autism services. The ABAI supports a number of special interest groups focused on many other domains and social problems in which BCBAs practice. Some of these are Addiction; Health, Sport and Fitness; Behavioral Gerontology; Behavioral Medicine; Clinical Medicine; Crime; Delinquency and Forensics; Gambling; Mental Health; Rehabilitation and Independent Living; and Sexual Behavior, among others. Clearly it is a mistake to see behavior analysis as being limited to practice with persons with intellectual disabilities and autistic spectrum disorders, although this latter field clearly dominates the field.

Some Problems

Competing Credentials

Although the BACB continues to be the dominant credentialing program for behavior analytic providers, a number of less stringent or more narrowly focused competing credentials have arisen. This creates some confusion within the field itself and among the public. The *Behavioral Intervention Certification Council* (BICC, <https://behavioralcertification.org/>) offers credentials as a Board Certified Autism Technician (BCAT) and a Board Certified Autism Professional (BCAP). This group has its own examination program (not as well developed as those offered by the BACB) and a Code of Conduct (2 pages long, also not as extensive as that developed by the BACB). The BICC was created in 2013 and focuses exclusively on providing credentials related to the treatment of person with autism spectrum disorder, a far narrower focus than the field of behavior analysis as a whole. The BCAT requires only 15 h of clinical experience (a shockingly low number) to earn the credential, along with other qualifications. The BICC eerily mirrors the structure of the BACB processes and services such as its own code of conduct, credentialing examinations, certifications, continuing education programs, disciplinary actions, etc.

The *American Board of Professional Psychology* (<https://abpp.org/Applicant-Information/Specialty-Boards/Behavioral-Cognitive.aspx>) offers board certification with an emphasis in applied behavior analysis (under the umbrella of its certification in behavioral and cognitive psychology, an odd pairing, given ABA's eschewal of so-called cognition as a directly manipulable cause of behavior). This credential, board certification in clinical psychology, is limited to licensed psychologists (holding a doctoral degree) with at least two years of practice in behavioral and cognitive psychology. It does not require earning the BCBA credential. It is not clear how many licensed psychologists have earned the ABPP with the specialization in behavioral and cognitive psychology but it is likely very small.

Professional psychology viewed with misgivings the slow but steady rise of behavior analysis as an independent, science-based practice. Increasing numbers of ABA practitioners obtain their academic degrees outside of psychology programs

(e.g. academic masters or doctorates solely in the field of behavior analysis, or in education). One early sticking point was whether BCBA's were practicing 'psychology' and as such needed to be supervised by licensed psychologists. There is an uneasy truce now, with the surge of ABA as its own independent discipline and credentials, and the apparent minimal interest of licensed psychologist in providing ABA services. ABA services requires a sizeable investment of time and effort and do not lend themselves to the tradition of the 50-min-h and office-based practice common in psychotherapy. Licensed psychology lost the fight in terms of restricting the licensed masters-level practice of psychotherapy by clinical social work, marriage and family therapy, and mental health counseling, and it seems ABA is emerging as its own similar stand-alone discipline.

In one recent development, the APA has approved accreditation standards for master's programs in "health" psychology, e.g., clinical, counseling, and school psychology (Grus, 2019). Previously APA only accredited doctoral programs in professional psychology and this new accreditation program in health psychology will inevitably lead to state-level efforts to permit the licensure of masters-level health psychologists. These will likely be met with some resistance by doctoral-level licensed psychologists in some instances, and also very likely from other masters-level psychotherapy-related professions, such as clinical social workers, marriage and family therapists, and counselors, fearing, perhaps rightly so, increased competition in the marketplace. It is also possible that licensed masters-level health psychologists will compete with the large and growing number of masters-level BCBA's, and state-level efforts by BCBA's may also push back on providing licensure to masters-level health psychologists. This could potentially give rise to a resurgence of conflicts between the profession of behavior analysis and that of professional psychology.

The *International Board of Credentialing and Continuing Standards* (IBCCS) offers a Certified Autism Specialist and an Advanced Certified Autism Specialist credential (<https://ibcces.org/certifications-education/#1600369147586-2ebcce10-6b51>). One can earn both 'credentials' with a bachelor's degree, some years of practice experience in the field, completing 21 continuing education hours, and the payment of a \$875 fee! The CE training is limited to the following topics: Behavior, Behavior Contingency, ethics, and Discrete Trial Training. These are certainly within the scope of ABA practice but extremely limited, coming nowhere near the competencies needed to effectively serve persons with autism. I suspect that these certifications are marketed to either the gullible or those unwilling to complete the more rigorous requirements of the BACB.

The *Qualified Behavior Analysis Credentialing Board* (<https://qababoard.com/about/>) is another independent body which offers certifications to practitioners who serve persons with autism spectrum disorder. Founded in 2012, it offers three levels of credentials which largely mirror those of the BACB, the entry-level Applied Behavior Analysis Technician, the supervisory-qualified Qualified Autism Services Practitioner, and the masters-level Qualified Behavior Analysts. These required a high school diploma, continuing education or university-based coursework, passing a written exam, and supervised experience. Unlike the BCBA, the QABA

credentials are exclusively focused in the area of autistic spectrum disorders. Fewer than 5000 individuals have earned one of these credentials.

Green (2015) authored a comprehensive paper on evaluating various credentials in behavior analysis, a paper whose recommendations were adopted by the Association for Professional Behavior Analysis (https://cdn.ymaws.com/www.apbathome.net/resource/collection/1FDDDBDD2-5CAF-4B2A-AB3F-DAE5E72111BF/APBA_Guidelines_EvaluatingCredentials_180906.pdf). Anyone contemplating education and credentialing in the field of ABA is advised to consult Richmond's recommendations, and to evaluate each credentialing program they are considering against these standards.

For now the BACB credentials remain the most rigorous and most widely recognized. In many states the title "Behavior Analyst," or some close variant thereof, is a legally protected term that may only be used by licensed behavioral analysts (licensure of behavior analysts is each individual state's prerogative). No private organization licenses behavior analysts, no matter what credential is offered by that organization. The advantages of the BACB credentials is their sound research-base, rigorous standards of examination, a highly sophisticated and scrupulous code of ethics, disciplinary procedures, broad scope of practice – beyond the field of autistic spectrum disorders, third party insurance recognition, and widespread adoption by the states that regulate ABA services. The development of multiple practice credentials in behavior analysis is confusing to the field, practitioners and public alike. As the legal regulation of behavior analysis moves ahead (31 states license behavior analysts), with more and more states requiring the BCBA credential and restricting the title "Behavior Analyst" and terms such as "behavior analysis services" to the holders of that and other BACB-provided credentials, it is hoped that alternative, and in many ways spurious credentials, will wither away (BACB, 2020c).

Corporate Takeover of Behavior Analysis?

In the early years of behavior analysis, services were usually provided in institutional settings, such as state homes for persons with intellectual disabilities, psychiatric hospitals, and public schools. Clientele were often persons with very serious disabilities for whom there seemed little hope, who received little professional attention and were provided only with custodial care. There seemed little to lose by letting experimental psychologists try their new methods to help such persons learn to acquire adaptive living skills and to decrease dysfunctional behaviors.

Over time, the successes of behavior analysis led to these services being adopted within more mainstream setting. With the rise of the BACB credentials, individual practitioners became hired as staff members or independent contractors, and companies exclusively devoted to providing behavior analysis services arose. As third party insurance payments became more widely available, some entrepreneurial ABA companies expanded and became not only quite large in terms of professional staff, but also quite profitable. Inevitably, this has attracted the attention of venture

capitalists or larger health care companies, who literally ‘bought’ entire ABA-service companies. This can be a problem, as noted by Cathey and Ward (<https://bsci21.org/how-to-build-your-business-as-a-behavior-analyst/>):

A related issue is the tendency for leaders to sell out their businesses to larger organizations or conglomerates. This again may make for a short-term windfall for the leader but larger conglomerates can tend towards profit maximization over quality care and production. This is of course not the rule, but is quite common.

Graber and O’Brien (2019) also accurately note this issue. The new owners may tend to see ABA service providers more as profit generators than as purveyors of humanistically-based care carefully regulated by a strong code of ethics. Caseloads might be increased to the point that quality of care deteriorates, and supervisory hours are cut below the minimum required. The careful attention to live data-collection, ascertaining inter-rater agreement, conducting functional analyses, and social validity issues, all may be seen as ancillary to the real business of doing ‘therapy’, which produces billable hours, and reduced accordingly.

Sohn (2020) wrote about this problem and quoted one of the country’s leading experts in ABA, Jon Bailey, Ph.D., making the following point:

...the agencies that hire RBTs often rely on a vast pool of undertrained labor. These businesses collectively train and employ tens of thousands of RBTs to work with children. “It’s being treated as a money grab in many places,” Bailey says. He estimates that there are hundreds, if not thousands, of these companies in the United States. Some are profitable enough that they have become popular buys for private equity firms.

One firm was alleged to have committed fraud against the federal Tricare insurance program and paid a penalty of over \$600,000 (<https://www.justice.gov/usao-mdfl/pr/tampa-bay-autism-service-provider-agrees-pay-675000-resolve-civil-healthcare-fraud>). The ABA Ethics Hotline (<https://www.abaethicshotline.com/who-we-are/>) is one reliable resource dedicated to providing guidance to companies and individuals faced with ambiguous billing practices of a lowering of practice standards. Several Florida ABA firms were convicted of Medicaid fraud. While the firms involved paid penalties, the state also cut back on ABA services as a whole, depriving clients of needed care. Such incidents tarnish the reputation of ABA as a credible and trustworthy field. Some companies specialize in rooting out fraud and abuse among the providers of behavior analysis services (e.g., <http://highlandbehavioral.com/managed-care-organizations-employers/fraud-abuse-analysis/>). In sum careful attention needs to be given to ensure that ABA firms owned and operated by larger corporations which are non-ABA focused maintain high professional standards and that these are not sacrificed in the name of enhancing profits.

The Intrusion of Pseudo-scientific and Non-Research-Based Services

In the broad field of human services, there are several ways a given intervention can be categorized.

1. It may have no scientific support at all, which is all too common. A given program has simply not been examined, and there is no way to empirically see if it is or is not supported by research since the requisite research has not been undertaken.
2. It may have been researched and found not to be helpful. This too is common. ‘Helpful’ means that the intervention yields outcomes that are clearly superior to the benefits obtained following receipt of credible placebo-type services. Many accepted therapies have been shown to provide little more than placebo-level benefits.
3. It may have been researched and found to be harmful. This too is common. Yet such services continue to be provided.
4. It may have been adequately researched and shown to be generally beneficial.

The BACB Code of Ethics is quite clear that therapies associated with statuses 1–3 above are unacceptable for inclusion in the practice of ABA. For example, Item 2.09 (a) on Treatment/Intervention Efficacy states “Clients have a right to effective treatment (i.e. based on the research literature and adapted to the individual client)... Effective treatment procedures have been validated as having both long-term and short-term benefits to clients and society.” Given this clear mandate it is surprising to find behavior analysts providing non-scientifically validated or pseudoscientific services to their clients, as documented by Schreck and Mazur (2008) and Schreck, Karunaratne, Zane and Wilford (2016). Among the non-research-based therapies provided were facilitated communication/rapid prompting, vitamin therapy, holding therapy, hyperbaric oxygen therapy, Sensory Integration Therapy, Auditory Integration, and Gluten-casein-free diets, and Floor-time. As Schreck et al. (2016) contend, “These results must serve as a wakeup call for our field of ABA. It is unfathomable that even one behavior analyst would admit to and/or use any of the unestablished or ineffective/harmful treatments listed” (p. 373). There is an ample literature out there to educate practitioners on ineffective and harmful therapies and their characteristic warning signs (Capuano & Kim, 2020; Offit, 2008; Pignotti & Thyer, 2015; Thyer, 2015b, 2019, 2022; Thyer & Pignotti, 2010, 2015. Schreck, Karunaratne, Zane & Wilford (2016) provide some helpful suggestions to further reduce the intrusion of fake therapies into the practice armamentarium of behavior analysts. If we do not that behavior analyst employ empirically valid practices, our claims to being a science-based field will ring hollow.

Summary and Conclusions

For many, behavior analysis is considered as a major approach in the first wave of behavior therapies. Today there are solid indicators forecasting that behavior analysis will thrive in the future. There is a snowballing of the number of appropriately credentialed Board Certified Behavior Analysts, the professional infrastructure is sound, private-pay and third-party insurance sources of income needed to support

the practice of ABA are growing, our scientific foundation is sound and expanding. Our Code of Ethics, supported by the BACB is solid, and in my opinion is one of the most rigorous and comprehensive available. The number of avenues for becoming certified as a behavior analyst, via formal university-based degrees or by taking approved courses, is growing. I find these developments astonishing, considering the state of affairs when I entered the field in the late 1970s. My peers and I had little sense of how successful the field would become. We held the view that through behavior analysis we could help make over the existing practice disciplines (Thyer, 1995). We believed that by showing how effective ABA services were, myriad clinical social workers, professional psychologists, educators, and other groups would eagerly substitute ABA practices their less effective, traditional practices, and in effect become much more behavioral in their orientation. This did not happen. ABA remains a minority practice perspective in most health care fields. It is the privilege of these fields to ignore the utility of the science of behavior. If they continue to do so, a Darwinian process will likely winnow out the less effective approaches to care and behavior analytic practices are well positioned to file the gap.

References

- Ayllon, T. (1963). Intensive treatment of psychotic behavior by stimulus satiation and food reinforcement. *Behaviour Research and Therapy*, 1, 53–61.
- Bailey, J. S., & Pyles, D. A. (1989). Behavior diagnostics. In E. Cipani (Ed.), *The treatment of severe behavior disorders: Behavior analysis approaches* (pp. 85–107). American Association on Mental Retardation.
- Behavior Analyst Certification Board. (2016). *Professional and ethical compliance code for behavior analysts*. Author. https://www.bacb.com/wp-content/uploads/2020/05/BACB-Compliance-Code-english_190318.pdf
- Behavior Analyst Certification Board. (2020a). *US employment demand for behavior analysts: 2010–2019*. Author.
- Behavior Analyst Certification Board. (2020b). *US employment demand for behavior analysts: 2010–2020*. Author. https://www.bacb.com/wp-content/uploads/2021/01/BurningGlass2021_210126.pdf
- Behavior Analyst Certification Board. (2020c). *U.S. licensure of behavior analysts*. Author. <https://www.bacb.com/u-s-licensure-of-behavior-analysts/#:~:text=U.S.%20LICENSURE%20OF%20BEHAVIOR%20ANALYSTS%20With%20licensure%20in,reveal%20the%20year%20its%20regulatory%20law%20was%20enacted>
- Capuano, A. M., & Kim, K. (2020). Understanding and addressing pseudoscientific practices in the treatment of neurodevelopmental disorders: Considerations for applied behavior analysis practitioners. *Behavioral Interventions*. <https://doi.org/10.1002/bin.1750>
- Graber, A., & O'Brien, M. (2019). The promise of accountable care organizations: “The Code,” reimbursement, and an ethical no-win situation for behavior analysts. *Behavior Analysis in Practice*, 12, 247–254.
- Green, G. (2015). How to evaluate alternative credentials in behavior analysis, Part II. *APBA Reporter*, 55(October).
- Grossberg, J. M. (1964). Behavior therapy: A review. *Psychological Bulletin*, 62(2), 73–88.
- Grus, C. L. (2019). Accreditation of master’s programs in health service psychology. *Training and Education in Professional Psychology*, 13(2), 84–91.

- Hanley, G. P., Iwata, B. A., & McCord, B. E. (2003). Functional analysis of problem behavior: A review. *Journal of Applied Behavior Analysis*, *36*, 147–185.
- Isaacs, W., Thomas, J., & Goldiamond, I. (1960). Application of operant conditioning to reinstate verbal behavior in psychotics. *Journal of Speech and Hearing Disorders*, *25*, 8–12.
- Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1982). Toward a functional analysis of self-injury. *Analysis and Intervention in Developmental Disabilities*, *2*, 3–20.
- Larson, M. S. (1978). *The rise of professionalism: A sociological analysis*. University of California Press.
- Lazarus, A. A. (1971). Notes on behavior therapy, the problem of relapse and some tentative solutions. *Psychotherapy: Theory, Research & Practice*, *8*(3), 192–194.
- Mausner, B. (1971). Some comments on the failure of behavior therapy as a technique for modifying cigarette smoking. *Journal of Consulting and Clinical Psychology*, *36*(2), 167–170.
- Offit, P. A. (2008). *Autism's false prophets*. Columbia University Press.
- Pignotti, M., & Thyer, B. A. (2015). New Age and related novel unsupported therapies in mental health practice. In S. O. Lilienfeld, S. J. Lynn, & J. M. Lohr (Eds.), *Science and pseudoscience in clinical psychology* (2nd ed., pp. 191–209). Guilford.
- Schreck, K., & Mazur, A. (2008). Behavior analyst use of and beliefs in treatments for people with autism. *Behavioral Interventions*, *23*, 201–212.
- Schreck, K. A., Karunaratne, Y., Zane, T., & Wilford, H. (2016). Behavior analysts' use of and beliefs in treatments for people with autism: A 5-year follow-up. *Behavioral Interventions*, *31*, 355–376.
- Sohn, E. (2020, 28 October). Low standards corrode quality of popular autism therapy. *Autism Research News*. Retrieved from: <https://www.spectrumnews.org/features/deep-dive/low-standards-corrode-quality-popular-autism-therapy/>
- Staff. (2020). Introducing the ABA billing codes commission. *Inside Behavior Analysis*, *12*(1), 36.
- Thyer, B. A. (1995). The X club and the secret ring: Lessons on how behavior analysis can take over psychology. *The Behavior Analyst*, *18*, 23–31.
- Thyer, B. A. (2015a). The divergent paths of behavior analysis and psychology. *Vive la Difference! Behavior Analyst*, *38*, 137–141.
- Thyer, B. A. (2015b). Playing whack-a-mole with pseudoscientific psychotherapies: A review of *Alternative psychotherapies: Evaluating unconventional mental health treatments* by Jean Mercer. *PsyscCRITIQUES*, *60*(28), Article 5.
- Thyer, B. A. (2019). Pseudoscientific therapies for autism spectrum disorder: Characteristics and examples. In J. Matson (Ed.), *Handbook of intellectual disabilities: Integrating theory, research, and practice* (pp. 501–515). Springer.
- Thyer, B. A. (2022). Pseudoscientific behavioral and mental health treatments: Characteristics and examples. In K. Corcoran & L. Rapp-McCoy (Eds.), *Social workers' desk reference*. Oxford University Press.
- Thyer, B. A., & Pignotti, M. (2010). Science and pseudoscience in developmental disabilities: Guidelines for social workers. *Journal of Social Work in Disability and Rehabilitation*, *9*, 110–129.
- Thyer, B. A., & Pignotti, M. (2015). *Science and pseudoscience in social work practice*. Springer.
- Trump, C. E., & Ayres, K. M. (2020). Autism, insurance, and discrimination: The effect of an autism diagnosis on behavior-analytic services. *Behavior Analysis in Practice*, *13*, 282–289.