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SPECIAL SECTION: DIVERSITY AND INCLUSION

# Delivering Home-Supported Applied Behavior Analysis Therapies to Culturally and Linguistically Diverse Families

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## Abstract

The selection and adoption of culturally appropriate targets and practices, especially for home-based or parent-supported services, is an emerging interest in the field of applied behavior analysis (ABA). Variations in cultural norms, caregivers' ability to participate in home-based service delivery, and family and practitioner linguistic competencies are some of the areas that the culturally competent ABA therapist must consider when designing a home-based program of therapy. Given the paucity of empirical research related to cultural competency in ABA service provision, the goal of the current article is to provide practitioners, their supervisors, and researchers with information to overcome many perceived barriers to successfully working with clients whose home languages or cultures differ from that of the dominant U.S. culture. Practical examples, integration of research from ABA and allied fields, and terminology are used to support these points and provide actionable guidance grounded in empirical literature.

**Keywords** Applied behavior analysis · Autism · Bilingual · English language learners · Hispanic · Immigrant · Latino · Latinx · Multicultural · Spanish

Culturally and linguistically diverse (CLD) families—that is, families whose primary language is one other than English or who identify with a culture outside the dominant Anglo-American culture—constitute a growing part of the U.S. populace (Coutinho & Oswald, 2006; Passel & Cohn, 2008). Those who describe themselves as White (not Hispanic/Latino) make up 60.1% of the United States, meaning that a sizeable minority of our country's residents may identify as CLD (U.S. Census Bureau, 2010). First-generation immigrants, referring to those who were born elsewhere, comprise 13.4% of the U.S. population and often speak a first language (L1) other than English. Although Latinos are the largest minority subgroup of individuals in the United States, comprising 18.1% of residents (U.S. Census Bureau, 2010), intervention researchers often fail to include them in standardization samples (West et al., 2016) or to report client cultural and linguistic backgrounds (Brodhead, Durán, & Bloom, 2014). Shifting demographics and cultural landscapes have resulted in a growing need to serve clients and families using behavior-analytic treatments that are both research supported and culturally relevant (Fong, Catagnus, Brodhead, Quigley, & Field, 2016).

Within the field of applied behavior analysis (ABA), oversight of culturally relevant variables that affect intervention outcomes may occur because of the widely held conviction that the principles of behavior are universally applicable and that culture, therefore, does not need to be considered when providing ABA services (Brodhead et al., 2014). Alternately, practitioners may have limited awareness of what they do not know. In a survey of ABA practitioners, Beaulieu, Addington, and Almeida (2018) reported that 57% of practitioners replied that over half of their clients were from "diverse backgrounds." Although most reported having no diversity-specific training, the great majority reported that they felt skilled and comfortable working with diverse clients.

Recently, researchers have begun calling for the consideration of the cultural adaptation of ABA services (Brodhead et al., 2014; Fong et al., 2016; Li, Wallace, Ehrhardt, & Poling, 2017). Furthermore, many groups, including Latino families, are requesting more linguistically adapted and culturally sensitive ABA practices (DuBay, Watson, & Zhang, 2018) and greater access to information about their children's diagnosis

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provided in their native language. In a recent study (Zuckerman et al., 2017), parents of children with autism spectrum disorder (ASD) in California, Colorado, and Oregon voiced several barriers to receiving therapies for their children with ASD. A large majority (74.9%) of the 352 parents who responded to the questionnaire given to them by clinicians reported that the stress of the diagnostic process was a barrier to receiving treatment. Among Latino respondents, who comprised 53.7% of the sample and consisted of both English-proficient and non-English-proficient parents, the most prominent reported barrier was "parent knowledge of ASD." Of note, difficulties with "parent trust in providers" were experienced at a significantly higher rate for Latino parents than non-Latino White parents. Mistrust in providers may lead to diminished compliance with therapy directives and could reduce any possible gains or positive impact of therapy.

Angell, Frank, and Solomon (2016) employed an ethnographic approach to understand the specific cases of six Latino families receiving ABA in the Los Angeles area. These parents—whose children had ASD—noted structural, relational, and personal barriers that limited their compliance with behavioral therapies, such as time pressures, parental exhaustion, the perceived inflexibility of ABA approaches, the lack of appropriate adaptation to their family's needs, and difficulty with tolerating the child's distress when attention was withheld as a response to tantrums. Although there are multiple factors at the micro-, meso-, and macrosystemic levels that may influence the access to and utilization of ABA services among Latinos (Lopez, 2014) and other cultural groups, this article aims to target those variables that are within the control of the individual practitioner.

The *Professional and Ethical Compliance Code for Behavior Analysts* from the Behavior Analyst Certification Board (BACB, 2017b; hereafter referred to as the BACB Code) requires that behavior analysts consider the role of culture in service delivery (BACB Code 1.05c), involve clients and families in the treatment planning process (BACB Code 4.02), and individualize the treatment plan to meet client needs (BACB Code 4.03). It is clear that accounting for the cultural and linguistic needs of the client and family is a vital part of effective and ethical ABA service provision, especially when working with families and clients from minority cultural and linguistic backgrounds.

In this article, we will discuss methods to overcome some of the barriers to culturally competent ABA practice with CLD families by providing practical suggestions for how practitioners can better integrate familial language and cultural considerations into their planning and delivery of behavior-change services. Although we will give examples that may be specific to Spanish-speaking Latino families, our general framework and suggestions may be applied to other CLD groups. Ultimately, we aim to increase the likelihood that ABA interventions will fit into the established family and cultural contingencies for socially significant behavior and, therefore, will be understood, accepted, and integrated into family routines, promoting greater generalization and more effective treatment overall (Van Houten et al., 1988).

## Overcoming Barriers to ABA Treatment for CLD Families

For decades, parents of CLD students with disabilities have reported a lack of support from educators and clinicians for improving the outcomes of their children (Lian & Fontánez-Phelan, 2001). The extent of progress made in the field of ABA to answer this call is unclear. Here we name some salient barriers and present ways to overcome these barriers in serving CLD children with disabilities and their families.

### Barrier 1: Lack of Diversity in Research

Researchers in ABA and related fields have, unfortunately, not often utilized culturally sensitive practices, such as reporting descriptive demographic information regarding research participants' ethnicity and home languages (Li et al., 2017) or incorporating research instruments specified for use with CLD of families, overlooking the critical knowledge that could be gained by doing so. This omission speaks to the need in the field to intentionally include diverse participants and their viewpoints. By being intentionally inclusive in subject recruitment and purposeful in instrument selection to include those validated for use with diverse groups, by conducting analyses that examine participant response in consideration of their language and culture, and by monitoring participant attrition based on group membership, we will begin to understand how treatments may be differentially beneficial for certain groups.

In addition to paying attention to client characteristics, the cultural interaction between the client and ABA researcher or practitioner merits further study. The language and cultural match between the clinician or researcher and the client or research population of interest (whether they correspond or not) should be an area of increased focus in high-quality cross-cultural research. A cultural "mismatch" may lead to communicative misunderstandings, result in inappropriate recommendations, and contribute to added cross-cultural stress for all involved, although more research on what effect cultural match or lack thereof has on ABA services and outcomes is needed.

### Barrier 2: Lack of Diversity Among Practitioners

Because the BACB does not make certificant demographics publicly available, it is difficult to determine exactly how many CLD behavior analysts may be available to provide

services to CLD families in need. Multiple attempts were made to request this information from the BACB; however, those requests were unanswered. In light of this, information from related professions may help provide information about possible shortages of diverse practitioners. The U.S. Department of Education has reported data from each of the states regarding the areas of teacher shortages from 1990 to 2018 (U.S. Department of Education, 2017). These data suggest that the shortage of teachers who are certified in bilingual education or special education has spanned decades and persists in many states. For example, in Texas, a state with a relatively high percentage of English language learners (ELLs), there have been shortages of both special educators and bilingual teachers in every year since 1990. What information is available indicates a shortage of Spanish-speaking special educators, school psychologists (Garcia-Joslin et al., 2016), health service psychologists (American Psychological Association, 2016), and primary care physicians (Zuckerman et al., 2013) relative to the numbers of Spanish speakers in their communities.

The presumed scarcity of ABA practitioners and supervisors whose language skills or cultural backgrounds match clients' families may be inferred from the data from related fields. Currently, a shortage of bilingual and multicultural practitioners may result in a system where most therapies are delivered in English, regardless of the appropriateness of doing so. A shortage of multilingual personnel suggests that services may not be culturally and linguistically adapted. This may be a result, in part, of lack of training in cultural diversity in university training programs (Beaulieu et al., 2018). This leaves open the possibility that when conceptual interpretation is necessary, it is done in an idiosyncratic and nonstandardized way, depending on the individual practitioners' degree of bilingualism, educational background, bilingual knowledge of discipline-specific terminology, and experiences with diverse families.

We encourage the BACB to create a process by which practitioners are able to publicly report the languages in which they are fluent and competent to practice and the cultures to which they belong. We further encourage training programs to intentionally recruit from diverse communities. These would be meaningful steps in consideration of culture and language as important variables in therapeutic provision.

## Barrier 3: Attitudes and Biases Regarding Cultures

Epidemiological research in public health suggests that health risks are not distributed equally among ethnic groups. Additionally, health services are not equally accessible to certain communities. These inequities in access to needed care may help to explain a striking paradox: Latinos are less likely to be diagnosed with ASD and are more severely impaired when they are diagnosed (Lopez, 2014). Despite an increase in the prevalence of ASD for most groups, Latinos' rate of ASD identification has lagged (Baio et al., 2018), and utilization of early childhood intervention services is low among Latino families (Lopez, 2014). Provider variables may also lead to discrepancies in diagnosis or service provision. Implicit biases held by the practitioner toward certain groups may, if unexamined, result in subtle but observable expressions of bias toward the client that could adversely impact health outcomes (Hall et al., 2015). Examination of one's own culturally bound values, assumptions, and expectations is an important first step in undoing historical systemic inequities.

Although ABA practitioners undoubtedly come from diverse language and cultural backgrounds, they share a set of cultural values and idiosyncratic language by virtue of their shared vocation. Behavior analysis, itself, is a cultural system (Glenn, 1993). Brodhead, Cox, and Quigley (2018) note that behavior analysis "differs from other applied sciences because of the unique underlying philosophical assumptions and approach to research that guides the behavior of BCBAs" (p. 87). Behavior analysis itself has been noted to have its own language of sorts that must be translated to different audiences (see, e.g., Slocum & Butterfield, 1994). As with any language, our field is rife with underlying assumptions that shape our behavior. For example, behavior-analytic language divides the topography and function of a behavior into distinct classes, a distinction that is meant to change the way behavior analysts think about and describe behavior. Understanding and becoming fluent in these linguistic assumptions is a key part of behavior-analytic training (see the BACB Task List), and people who enter behavior analysis from other fields sometimes discuss the process of acclimation into behavior-analytic culture and language (Slocum & Butterfield, 1994).

As cultural beings, practitioners function in a variety of situationally and contextually mediated settings, in which contingencies vary. One might not speak to one's own grandparent using the same language as one might use when speaking to a colleague. To speak to your grandparent in behavioral terms may cause confusion and may be perceived as inappropriate; the language that one uses and the sentiments conveyed are highly dependent on context. For a client who expects a warm, informal discussion to occur prior to any more formal discussion of the client's needs, a violation of this cultural norm may be perceived as odd or off-putting. Monitoring of clients' nonverbal behaviors for signs of discomfort or displeasure may provide insight into when or whether such a cultural norm violation has occurred.

To address the culturally bound assumptions that may enter the therapeutic process, the practitioner should take every opportunity to engage in self-reflection and introspection regarding cultural attitudes and practices and how these may impact behaviors toward diverse clients. Although undoing internalized biases may not be an easily achievable task, one

may be able to reduce the expression of such bias. Amodio and Swencionis (2018) described reactive control as a mental process that is engaged, once bias has been internally identified, in an attempt to correct the influence of bias on a response. Imagine trying to repair communication once a possibly biased thought enters one's mind, in response to a family's observable characteristics, or a potentially offensive gesture has been expressed; this most often results in an awkward and unsuccessful attempt to regain harmonious intercultural relations. These authors found that by engaging in a proactive control process of evaluating the difficulty of engaging in complex intercultural communication while providing therapeutic services and by maintaining the focus on the session's stated goals, rather than on observable differences between the practitioner and the client, clinicians were able to reduce their expression of behaviors related to implicit bias. Such an approach may be adopted by ABA practitioners as they prepare to meet with CLD families. This presumes that the practitioner has engaged in earnest self-reflection and introspection regarding the biases he or she may have unwittingly learned.

## Barrier 4: Mismatch Between Home Language and Practitioner Language

Language may be described as a vehicle for culture. One potential impediment to the application and dissemination of behavior analysis is the translation of behavior-analytic language to terms that can be more readily understood by non-behavior analysts (Brodhead et al., 2018). This process of translation may be even more challenging when a behavior analyst is working with a family whose cultural or linguistic background is different from his or her own. The highly specific language used by behavior analysts—or any group of people using specific vernacular that is difficult to understand for those who are not members of that group—constitutes a sort of subcultural delineation, with those in the "in group" being able to speak and understand with ease, whereas others fail to grasp the overt and covert meaning of terms. There is also the question regarding the degree to which meaning is compromised when translating behavior-analytic principles to non-behavior-analytic language, and this becomes even more complex when adding an additional degree of cultural and linguistic complexity.

For a practitioner who does not speak the family's language(s) and is unable to communicate basic information with the family, the practitioner is limited in his or her understanding of the child's needs and functioning. This, along with the culturally bound interpretation of behaviors, may even lead to the misdiagnosis of ASD in ELLs (Dennison, Hall, Leal, & Madres, 2018). Thus, the person who is the first point of contact with the family should make every attempt to invite a bilingual practitioner or interpreter to future meetings with the family. This may promote the acceptability of the services and ensure that the family has an opportunity to have their concerns communicated effectively to the therapist or provider. If an in-person interpreter is not available, remote interpreters via phone or videoconferencing should be used. Although use of video, phone, and in-person interpretations produce similarly high levels of acceptability among clinicians and Spanish-speaking clients in medical settings (Azarmina & Wallace, 2005; Joseph, Garruba, & Melder, 2018), interpreters have complained of physiological and psychological strain when using remote media and report a slight preference for in-person interpretation (Braun, 2007). School psychologists (Carvalho, Dennison, & Estrella, 2014), speech-language therapists, and other professionals who often use interpretation services have written broadly about best practices in the use of interpreters in assessment and therapy. Many recommendations from these fields are relevant to ABA, such as reviewing relevant legal and ethical guidelines, assessment processes, and oft-used terms in advance with the interpreter; encouraging interpretation of all communication, including informal banter and side conversations; speaking to the client rather than the interpreter; leaving adequate pauses during speaking so that interpretation may occur; and discussing the interactions that occur with the interpreter once the family session has concluded. This will allow time for any clarifications of interpretation and possibly for a discussion of cultural assumptions to take place.

Communication barriers directly contribute to the problem of access to behavioral services by diverse families. Although learning the family's language may not be feasible, and reliance on the use of an interpreter for each session may present its own set of challenges, there are opportunities for improving the cultural and language match of service providers and clients by noticing and addressing the unique cultural experiences of both, employing empathy and humor when cultural conflicts arise, and attending to the parent-clinician relationship.

Many factors may impair equitable access to services. Much of the literature regarding disabilities is published in English, so it may be difficult for Spanish-speaking families to access. Although online tools may make the translation to other languages more accessible, the highly technical nature of ABA terminology may still be incomprehensible to families without a professional's interpretation. Printed reference resources, such as ABA textbooks in other languages, may be shown to families whose primary language is not English when explaining ABA terminology, as long as the family is literate in that language. By providing access to information about ABA in the home language early in the process of service provision, practitioners may help to increase the effectiveness and acceptability of services delivered to CLD families.

## Barrier 5: The Challenge of Analyzing and Understanding One's Own Cultural Lens

A component often missing in ABA training, and therefore treatment for ASD, is a strategic way to examine the deep, multiple, and interacting ways that cultures shape language and behaviors, including helping behaviors by therapists. We do not perceive this oversight to be intentional. It is indeed difficult to "see" one's own cultural lens, much less that of another person from whom one differs in unknown ways. We do not intend to suggest that it is at all possible to inhabit another person's worldview. We do encourage training programs to incorporate discussions of languages and cultures across curricula and to consider how these may impact services for CLD families. Creation of bilingual training programs may further help to push the field toward intentional inclusivity.

Recently, the concept of cultural humility has begun to enter the literature in applied therapeutic fields, including psychology (Davis et al., 2018). Cultural humility involves the acknowledgment of the limitations in one's own knowledge and understanding of another's culture and prescribes an other-focused orientation to overcome these limitations, including strategies for relational repair when needed (Hook, Davis, Owen, & DeBlaere, 2017). Among the several notable recommendations made by Abbott, Pelc, and Mercier (2019) to apply this concept to the practice and training of psychologists is the recommendation to participate in self-reflection and evaluation of personal power, privilege, and marginalization. These resources may be of use to the practitioner engaged in a serious self-study toward reducing internalized bias and outward oppression.

**Cultural analysis** For practitioners with little experience or exposure to their clients' language or cultural background, engaging in a cultural analysis of oneself or one's context may be indicated. A cultural analysis is a systematic process that allows for the better prediction and control of human behavior at the third level of selection (Brodhead et al., 2014; Skinner, 1953; Sugai, O'Keefe, & Fallon, 2012). A cultural analysis is not meant to result in stereotyped or gross generalizations about an individual or a group of individuals. Just as a behavior analyst would analyze an individual's environment to identify relevant information about a behavior-change program, a cultural analysis involves an individual analysis of the cultural factors affecting an individual's environment and the resulting contingency. For example, an important concept in Spanish, *educación*, does not primarily refer to formal education in most Latin cultures; rather, it refers to the caregiver's responsibility to ensure that social norms of etiquette have been taught and are exhibited, such as *simpatía*, or the value placed on social harmony, conflict avoidance, and agreement (Merz et al., 2016). A family interested in the avoidance of conflict may be reticent to bring up points of disagreement or even to ask questions, making it contingent on the practitioner to notice nonverbal expressions suggesting that confusion or concern has arisen. Considering the nuance embedded in language and questioning the implicit assumptions tied to certain words are part of a cultural analysis. When providing services to CLD families, a cultural analysis may indicate that the aforementioned values (i.e., learned reinforcers) constitute what behaviors are identified as the primary targets for behavioral interventions.

Another example of a cultural analysis may be to hold discussions with local stakeholders to better understand the values and needs of a given community (see Brodhead et al., 2018). This may include private communications and larger forums in which the public is invited to participate (Christopher, 2016). These discussions may yield information about community trust in Western medicine, roles of parental involvement in treatment, and the capacity of community members to adhere to treatment recommendations based on external stressors (e.g., economic factors). With this information, behavior analysts may ensure they approach treatment within that community in a manner that aligns with the aforementioned information. For example, the behavior analyst may take extra care to build rapport with a family before recommending behavior management strategies to ensure trust exists between both parties. The behavior analyst may also take extra care to ensure that interventions are of low effort (but still likely to be efficacious) due to external demands faced by members of that community.

A cultural analysis is also in line with current best practices regarding cultural competency in other human service fields that call for individual assessment and consideration of a client's cultural background in treatment (Lund, Nelson, & Johnson, 2017a, b). The primary difference is that the analysis primarily takes place at the third level of selection (i.e., the cultural level), instead of the second, or operant, level (Skinner, 1981).

A cultural analysis involves an assessment of both one's clients and oneself. Fong et al. (2016) note that only considering the cultural values of one's clients is an incomplete analysis. Instead, a thorough analysis involves both one's biases as a behavior analyst and one's own cultural values relative to one's own personal life. This may be initially difficult for many practitioners, as culturally based contingencies are often deeply embedded through an extensive, lifelong learning history.

Social validity is a key component of ABA, given its focus on socially significant behavior change. Social validity assessment may be particularly important when working with Latino families and other families from nondominant cultural backgrounds, as assessing social validity can help behavior analysts know if an intervention or target behavior is seen as meaningful within the client's family and cultural context

(Beaulieu et al., 2018). Furthermore, as Beaulieu et al. note, ensuring that one's interventions and treatment goals are socially valid may help improve treatment integrity, as the family will not feel the need to modify interventions on their own in order to make them more appropriate within their cultural context. Additionally, using materials that are culturally and linguistically accessible to families and being able to provide services in the family's native language or via an interpreter may help increase the family members' understanding of the intervention and thus increase the integrity with which they implement the treatment.

Finding and taking advantage of extant tools that promote cross-cultural competence and that are used across helping professions is strongly encouraged. For example, use of tools promoting self-directed inquiry, such as the ADDRESSING framework (Hays, 2001), may help define the areas in which one's own identity and experiences may differ from a client's. Although these dimensions are important to identify, it is of equal import to recognize the great diversity that exists within groups of people belonging to a similar demographic group in order to avoid making overly broad assumptions. Using the Cultural Formulation Interview found in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., DSM-5; American Psychiatric Association, 2013) when interviewing CLD families may help a practitioner engaged in cultural analysis understand the unique perspectives and ways of knowing and experiencing the world that are potentially influencing the expression of symptoms and the family's style of engagement in therapeutic processes.

Hofstede and Hofstede's (2010) decades of multicultural research on the functioning of teams and organizations has resulted in the empirical validation of cultural constructs in many countries. An interactive online tool allows for the comparison of diverse countries' cultural characteristics along several dimensions (https://www.hofstede-insights.com/product/compare-countries/). Exploring the dimensions of cultures, as they align on spectra of related behaviors and values, may be relevant to ABA practitioners interested in learning about cultural differences.

## Barrier 6: Practitioners' Understanding of and Empathy for the Impact of Sociocultural and Socioeconomic Stressors

Delayed intervention carries negative consequences, as diagnosis and intervention are acknowledged as critical means of improving outcomes in a number of functional domains; however, access to social supports is directly linked to a family's knowledge of and access to educational and medical supports that do exist. It is important not to stigmatize a family as "uncaring" or "irresponsible" for not seeking help earlier. The knowledge of American culture, education, and health care systems may be very limited, especially for families who have recently arrived in this country. With potentially limited knowledge of and access to disability services, an immigrant family may wait until the child's symptoms totally overwhelm the family's capacity to accommodate before they seek assistance from outside providers.

Socioeconomic factors are likely contributors to the delayed identification of CLD children with ASD symptoms. Latino families are more likely to live in poverty than other groups (Center for Public Policy Priorities, 2018) and may therefore experience multiple associated stressors, such as the lack housing and transportation availability, food scarcity, and time pressures due to having multiple responsibilities, including possibly the need to work multiple jobs. The sense of feeling tired and overwhelmed may further diminish the family's success with seeking and receiving help when needed, especially if their needs are focused on meeting basic (i.e., food and housing) needs.

Importantly, when families in the United States are composed of immigrant members, they may not seek help from social service agencies, fearing that they may be ineligible to receive those services or, even worse, that they may be detained or deported upon accessing them. This fear is not unreasonable in the current social and political environment, in which governmental support for immigrants is diminishing. Historic and current patterns of discrimination and inequality should not be overlooked as potential barriers to help-seeking behaviors and compliance with prescribed treatments.

Ultimately, the omnipresence of covert discrimination and overt racism toward immigrants and people of color in the United States make it difficult for families to know with whom to place their trust. Being a target of racist behavior has been linked to deleterious effects for its victims, including a reduced sense of belonging, depression, and diminished self-efficacy (Paradies, 2006). Reports of open hostility toward minority cultures have been increasing recently, counteracting progress in this area. These stressors, when compounded, may result in the diminished health of the individual members of the family and could increase the likelihood for family dysfunction. Suárez-Orozco, Yoshikawa, and Tseng (2015) described children who live at the "intersection of cumulative risks" as inhabiting intersecting inequalities that result in lower academic and economic outcomes, all of which can be related to developing a therapeutic relationship.

Take time to listen to a family's stories, their values, and their experiences with prior help-seeking attempts. Acknowledge to parents and families that you are aware that they have faced and overcome many personal (and possibly economic and sociopolitical) challenges; this may help in forging an alliance that facilitates trust in the therapeutic process. A trusting relationship with a helping professional may be of special significance to a family who has experienced poverty or marginalization. This trust may engender confidence in the pursuit of meeting other family needs. A safe,

supportive relationship may even become a protective factor for a family who has been underserved previously. Even if the practitioner and family do not share a home language, the communication of empathy can be expressed nonverbally, through reassuring facial expressions and gestures. Attempts to understand, in spite of language barriers, may be especially appreciated by members of immigrant groups.

An additional step that practitioners and researchers interested in confronting social injustice may consider is the participation in organizations and events that actively seek to overcome harmful internalized narratives and structural inequities disproportionately faced by ethnic minority groups. The W. K. Kellogg Foundation (WKKF) has invested resources since 2015 for confronting and countering the false "human hierarchy of value" based on physical characteristics. This false hierarchy has harmful and potentially lethal consequences for those impacted—most often, those who are or appear to be another race or ethnicity (Christopher, 2016). To facilitate the healing of communities, the WKKF produced the *Racial Equity Resource Guide* (http://www.racialequityresourceguide.org/), an interactive guide that is customizable by the user to address locally relevant disparities. They have further begun a series of workshops across the United States with the aim of healing communities impacted by racial injustice. These workshops conform to the foundation's framework of truth, racial healing, and transformation by encouraging truth telling in the context of community relationships and data gathering from impacted communities that may inform policy development. The resources on the organization's website are based on best practice, informed by the work of a number of similar efforts, and are also often available in Spanish.

## Barrier 7: Limited Knowledge About Bilingualism

Knowledge of the impact of bilingualism on ASD treatment is starting to be an area of increased academic interest. In spite of widely held beliefs, bilingualism does not appear to "confuse" the child or delay their development (Paradis, Genesse, & Crago, 2011), nor does it appear to create additional linguistic impairment or delay in children with ASD (Lund, Kohlmeier, & Durán, 2017). In an investigation of the language skills of 80 toddlers with ASD, half of whom were bilingual, the only measurable difference between the study groups was that the bilingual toddlers were more likely to vocalize and use gestures (Valicenti-McDermott et al., 2013). Cognitive impairments often associated with ASD should not deter the practitioner or family from using the home language; as with other bilinguals, the fund of knowledge in the first language appears to enhance and support the growth of vocabulary in the second language (Hambly & Fombonne, 2014). Bilingualism has been hypothesized to confer benefits for cognitive flexibility, socialization, and executive function, though the research at this point is mixed and inconclusive, most likely due to its paucity. Despite this, there are some clear, practical advantages to bilingualism including, importantly, the ability to converse, study, and possibly "belong" in more than one cultural context. More research is needed in this important area.

**Tapping into language transfer** For effective bilingual language development to occur, academic instruction in the child's home language is regarded as vital (Durán, Hartzheim, Lund, Simonsmeier, & Kohlmeier, 2016). If there are no available role models with well-developed academic language skills, nor behavioral technicians or behavior analysts who are able to deliver services in a child's home language, the child may not be able to access high-quality programming and linguistic input in that language. The use of cognates, or words that share an underlying root of origin, is a useful tool to overcome this limitation, as there are many such words in English and Spanish. A simple web search for English and Spanish cognates may provide instructive.

When ELL children with ASD learn in their native language and later in English, they are often able to transfer underlying knowledge and skills from one language to the other (Kingsdorf, 2014). Overall, interventions can be more useful initially in the child's native language (Kingsdorf, 2014), as a young child spends most of his or her time with family members and therefore is more likely to receive high-quality language input in the home language. Quality language input has been shown to be key in promoting language development in bilingual children with disabilities (Durán et al., 2016). In behavior-analytic terms, the use of the home language in treatment allows for easier generalization into the home and family setting and provides more natural modeling and opportunities to respond across settings.

**Considerations for assessment** During the assessment phase, language proficiency, dominance, and preference within the various learning environments must be assessed, because children who are ELLs will typically move between language environments throughout their day, and relative rates and exposure to different languages may differ depending on situational and familial factors. For example, ELL children may speak in one language to their parents but in another language to their siblings or in the community. Thus, children may learn certain words in certain contexts and develop different verbal behavior repertoires in different settings. For example, a child may learn the words for kitchen items first in Spanish but may learn the words for school supplies first in English due to the differing primary languages of instruction in each setting. Additionally, a child may rely on discriminative stimuli in the environment to decide what language to use and thus may demonstrate different verbal behavior repertoires depending on what environmental stimuli are present and may mix or

switch between different languages ("code switching" and "code mixing"). For example, if a child wants to mand for milk but does not know the English word, he or she may say something like "Give me leche" in order to try and create an effective mand. Whereas typically developing children may gain an expansive verbal repertoire through natural exposure, children with ASD may require more explicit and extensive instruction and practice opportunities in order to develop their verbal repertoires. The additive impact of learning two or more languages has been observed to enhance linguistic competence in bilingual learners with disabilities (including ASD). Hambly and Fombonne (2012) found that young children with ASD who were exposed to bilingual learning environments exhibited vocabulary development and socialization skills almost comparable to nondisabled monolingual peers. Bilingualism is theorized to enhance executive functioning in learners, which may make it a relevant and effective component of treatment, as executive functioning is frequently impaired in students with ASD. Longitudinal and large-scale studies of diverse samples are needed in this area.

**Augmentative and alternative communication** Children with ASD may use augmentative and alternative communication (AAC) to communicate, either in lieu of, in addition to, or as a precursor to spoken language (Ganz, Davis, Lund, Goodwyn, & Parker, 2012a, b; Ganz, Earles-Vollrath, Mason, et al., 2011a, b). Many AAC systems for children with ASD involve both pictorial and written images (e.g., the picture exchange communication system [PECS]; Frost & Bondy, 2001; Ganz, Simpson, & Lund, 2012), as they allow for use by preliterate individuals. Additionally, graphic AAC interventions may provide extra information for ELLs with ASD by helping them understand what is being said and aiding them in their vocabulary development (Fahim & Nedwick, 2014). Such interventions could help ELLs with ASD make the connection that both words refer to the same item or action (Fahim & Nedwick, 2014). Furthermore, behavior analysts should work with the family to develop activity schedules and visual supports for both languages (Fahim & Nedwick, 2014). For example, a dual-language or visual daily schedule can be made and clearly displayed in the home to aid in transitions and help the child with ASD understand what is happening, regardless of the language being used (Ganz, Earles-Vollrath, & Cook, 2011).

**Cautious use of informally translated words** Online or app-based translation tools may not be ideal for activities requiring precise definitions, as these tools are known to be error prone when interpreting diverse voices. So, although they may be used for low-stakes translation, they should not be used for making diagnostic decisions or formal recommendations. The effort made by the therapist in taking the time to attempt to communicate in the home language is likely to be perceived favorably by members of many cultures.

**Incorporating family language and routines** Because the child should first learn vocabulary that can be frequently modeled and reinforced, behavior analysts should work with the family to identify items or activities that are pivotal to the child's life, as well as words used across settings. In the case when families use nonsensical words during routines, behavior analysts should respectfully prompt parents to use a grammatically correct word from either language to guarantee that the child with ASD is able to effectively generalize and communicate across settings with different individuals, as well as to minimize linguistic and cognitive processing demands (Fahim & Nedwick, 2014). Additionally, it is important to discuss with parents and caregivers that language should be consistently modeled, with the grammatical rules and cultural norms of the language in mind—which may change depending on contextual variables. For example, in Spanish, *papi* means "daddy" but can also be used to address a male child. An ELL who also has ASD may have difficulties comprehending that *papi* can be used in different ways depending on the context of the conversation (Fahim & Nedwick, 2014). In Spanish (as in all languages), there are many such words that hold more than one meaning, underscoring the importance of explicit teaching, modeling, and reinforcement across contexts. Finally, children with ASD from bilingual families should be exposed to both languages when engaging in activities such as story time, bath time, or meal time to help develop the links between the two languages. Consistent exposure to both languages during these routine activities can help ELLs with ASD generalize their acquired skills (Fahim & Nedwick, 2014).

Ultimately, it is critical that ELLs with ASD be provided tools to communicate effectively across environments and fully engage in the home, school, and community (Kingsdorf, 2014). Encouraging monolingualism in bilingual families has been shown to limit opportunities to respond and thus decrease the level and quality of language input that a child with ASD receives (Kremer-Sadlik, 2005). Additionally, allowing children with ASD to communicate bilingually increases the opportunities for social practice and reinforcement in their community and family.

## Discussion and General Recommendations

In addition to those named previously, there are a number of recommendations to consider when working with a family or client from a cultural background that is different from the one's own (Brodhead et al., 2014; Fong et al., 2016). It is recommended that the behavior analyst considers caretaker preference, culturally appropriate forms of reinforcers, and the language(s) of assessment (Rispoli et al., 2011) and pays close and thoughtful attention to understanding the cultural identities of clients.

## Include Families

Parents-as-trainers encompasses the idea that parents are essential components in a child's learning. In order to enhance parents' use of ABA techniques into the home, parents' knowledge of their child must be valued and respected. To develop ABA skills, caregivers may opt to participate in group-based parent education and training that is sometimes offered through schools, individualized parent education and training, or Internet-based parent training. Across these three categories, there are several modalities that construct the different types of training, including using didactic or written means, using in vivo modeling or video modeling procedures, involving parents in role-play, and providing corrective feedback while the parents practice targeted intervention strategies with their child (Lang, Hancock, & Singh, 2016). To acknowledge the value placed on family cohesion and the role of extended family networks in many cultures, grandparents may be encouraged to participate in parent training sessions.

## Considerations for Trainers

An important contributor to the variability in the cultural adaptation of services stems from the various emphases that ABA training programs place on issues related to diversity. This is further complicated by the fact that ABA practitioners may come from a wide variety of professions, such as psychology, special education, speech-language pathology, and others, and, therefore, consistency in cultural responsiveness training is difficult, at best. Even if ABA practitioners are trained in principles and practices related to serving multicultural clients and do so with cultural humility, there is likely a great deal of variability in the quality and content of this training.

Individuals pursuing an education in or having completed a verified course sequence (VCS) will likely not be exposed to content related to cultural analysis unless that information is presented as supplementary material or requirements of their program of study. The BACB Fourth Edition Task List (BACB, 2017a), and upcoming Fifth Edition Task List (BACB, forthcoming), which defines the scope of practice of individuals credentialed by the BACB, does not make much mention of culture. This is in contrast to other human service fields, such as psychology (American Psychological Association, 2011) and counseling (Council for Accreditation of Counseling and Related Educational Programs, 2016), which specify cultural competency as a key component of training. This omission places the onus on students (and practitioners) to seek education related to multiculturalism and cultural competency on their own. Such "do-it-yourself" training can create considerable additional variability in the intensity, duration, quality, and accuracy of the information received (Lund et al., in press). Consultation with the professional standards for cultural competence of the American Psychological Association, the National Association of School Psychologists, and the American Speech-Language-Hearing Association (ASHA) may be helpful for our field. For example, ASHA provides cultural competence checklists that may be useful in clinical and policy-shaping efforts.

The omission of culture from ABA educational and training standards requires an astute remedy on behalf of practitioners and instructors for a number of reasons. First, VCSs are located throughout the world, on every continent except Antarctica. It can be inferred, then, that behavior analysis has become a global affair. As a result, behavior analysis is reaching a broad and diverse group of students, instructors, and clients. This may cause some of the underlying cultural and linguistic assumptions of the field and its practice to be questioned. As indicated by Angell et al. (2016), in some cultures parents may find it very difficult to tolerate a child's cries when a reinforcer is intentionally withheld. Parents may see the expectation to allow the child to cry as a lack of compassion for the child or as in conflict with culturally specific parenting expectations. In other cultural contexts, parents may question recommendations to emphasize the acknowledgment of desirable behaviors instead of the discouragement of inappropriate behaviors, as punishment may be seen as a more acceptable response to undesired behaviors. As behavior analysts, we understand that a variety of environmental factors can alter the contingencies surrounding behavior and that each individual is under the control of a lengthy learning history that involves a complex array of operant, conditioned, and rule-governed contingencies. Cultural norms and expectations may play a considerable role in shaping these contingencies and therefore may influence not only client behavior but also the behavior of therapists and behavior analysts.

> Indeed, the BACB Code (2017b) acknowledges the potential role of culture in shaping behavior surrounding behavior analysts' work:
> Where differences of . . . culture . . . significantly affect behavior analysts' work concerning particular individuals or groups, behavior analysts obtain the training, experience, consultation, and/or supervision necessary to ensure the competence of their services, or they make appropriate referrals. (p. 5)

We interpret this section of the BACB Code as conveying the importance of, and need for, the consideration of culture in the practice in behavior analysis. In addition to the benefits of considering culture in developing and delivering effective treatment programming, this section of the code indicates that behavior analysts have an ethical obligation to be

multiculturally aware and able to approach others' cultures with humility, even if the BACB Task List does not explicitly require demonstrated knowledge addressing cultural competency or cultural and linguistic diversity. The recommendations we have made, which are aligned with Fong and Tanaka's (2013) recommended standards for cultural competence in ABA, hopefully provide benefits and actionable steps toward increased cultural competence.

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## Compliance with Ethical Standards

**Conflict of Interest** Dr. Dennison declares that she has no conflict of interest. Dr. Lund declares that she has no conflict of interest. Dr. Brodhead declares that he has no conflict of interest. Ms. Mejia declares that she has no conflict of interest. Ms. Armenta declares that she has no conflict of interest. Ms. Leal declares that she has no conflict of interest.

**Ethical Approval** This article does not contain any studies with human participants or animals performed by any of the authors.

## References


Abbott, D. M., Pelc, N., & Mercier, C. (2019). Cultural humility and the teaching of psychology. *Scholarship of Teaching and Learning in Psychology*. Advance online publication. https://doi.org/10.1037/stl0000144.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

American Psychological Association. (2011). *Revised competency benchmarks for professional psychology*. Washington, DC: Author Retrieved from http://www.apa.org/ed/graduate/competency.aspx.

American Psychological Association. (2016). *2015 APA survey of psychology health service providers*. Washington, DC: Author Retrieved from https://www.apa.org/workforce/publications/15-health-service-providers/report.pdf.

Amodio, D. M., & Swencionis, J. K. (2018). Proactive control of implicit bias: A theoretical model and implications for behavior change. *Journal of Personality & Social Psychology, 115*(2), 255.

Angell, A. M., Frank, G., & Solomon, O. (2016). Latino families' experiences with autism services: Disparities, capabilities, and occupational justice. *OTJR: Occupation, Participation and Health, 36*(4), 195–203.

Azarmina, P., & Wallace, P. (2005). Remote interpretation in medical encounters: A systematic review. *Journal of Telemedicine & Telecare, 11*(3), 140–145. https://doi.org/10.1258/1357633053688679.

Baio, J., Wiggins, L., Christensen, D. L., Maenner, M. J., Daniels, J., Warren, Z., et al. (2018). Prevalence of autism spectrum disorder among children aged 8 years—Autism and Developmental Disabilities Monitoring Network, 11 sites, United States, 2014. *MMWR Surveillance Summaries, 67*(6), 1–23.

Beaulieu, L., Addington, J., & Almeida, D. (2018). Behavior analysts' training and practices regarding cultural diversity: The case for culturally competent care. *Behavior Analysis in Practice. Advance online publication.* https://doi.org/10.1007/s40617-018-00313-6.

Behavior Analysis Certification Board. (forthcoming). *BACB task list* (5th ed.). Retrieved from https://www.bacb.com/wp-content/uploads/2017/09/170113-BCBA-BCaBA-task-list-5th-ed-.pdf

Behavior Analysis Certification Board. (2017a). *BACB task list* (4th ed.). Retrieved from https://www.bacb.com/wp-content/uploads/2017/09/160101-BCBA-BCaBA-task-list-fourth-edition-english.pdf

Behavior Analysis Certification Board. (2017b). *Professional and ethical compliance code for behavior analysts.* Retrieved from https://www.bacb.com/wp-content/uploads/170706r_compliance_code_english.pdf

Bondy, A., & Frost, L. (2001). The picture exchange communication system. *Behavior Modification*, 25(5), 725.

Braun, S. (2007). Interpreting in small-group bilingual videoconferences: Challenges and adaptation processes. *Interpreting: International Journal of Research & Practice in Interpreting, 9*(1), 21–46.

Brodhead, M. T., Cox, D. J., & Quigley, S. P. (2018). *Practical ethics for effective treatment of autism spectrum disorder*. New York, NY: Academic Press.

Brodhead, M. T., Durán, L., & Bloom, S. (2014). Cultural and linguistic diversity in recent verbal behavior research on individuals with disabilities: A review and implications for research and practice. *The Analysis of Verbal Behavior, 30*, 75–86.

Carvalho, C., Dennison, A., & Estrella, I. (2014). Best practices in the assessment of English language learners. In P. Harrison & A. Thomas (Eds.), *Best practices in school psychology* (Vol. 6, pp. 75–88). Bethesda, MD: National Association of School Psychologists.

Center for Public Policy Priorities. (2018). *Kids count data book: State trends in child well-being*. Retrieved from http://forabettertexas.org/

Christopher, G. C. (2016). Unearthing and undoing the lethal belief in racial hierarchy. *Poverty & Race, 25*(1), 3–20.

Council for Accreditation of Counseling and Related Educational Programs. (2016). *2016 CACREP standards*. Retrieved from http://www.cacrep.org/wp-content/uploads/2012/10/2016-CACREP-Standards.pdf

Coutinho, M. J., & Oswald, D. P. (2006). *Disproportionate representation of culturally and linguistically diverse students in special education: Measuring the problem*. Tempe, AZ: National Center for Culturally Responsive Educational Systems.

Davis, D. E., DeBlaere, C., Owen, J., Hook, J. N., Rivera, D. P., Choe, E., et al. (2018). The multicultural orientation framework: A narrative review. *Psychotherapy, 55*, 89–100.

Dennison, A., Hall, S. P., Leal, J., & Madres, D. A. (2018). ASD or ELL? *Distinguishing differences in patterns of communication and behavior. Contemporary School Psychology. Advance online publication*. https://doi.org/10.1007/s40688-018-0206-x.

DuBay, M., Watson, L. R., & Zhang, W. (2018). In search of culturally appropriate autism interventions: Perspectives of Latino caregivers. *Journal of Autism and Developmental Disorders, 48*(5), 1623–1639. https://doi.org/10.1007/s10803-017-3394-8.

Durán, L. K., Hartzheim, D., Lund, E. M., Simonsmeier, V., & Kohlmeier, T. L. (2016). Bilingual and home language interventions with young dual language learners: A research synthesis. *Language, Speech, and Hearing Services in the Schools, 47*, 347–371.

Fahim, D., & Nedwick, K. (2014). Around the world: Supporting young children with ASD who are dual language learners. *Young Exceptional Children, 17*(2), 3–20.

Fong, E. H., Catagnus, R. M., Brodhead, M. T., Quigley, S. P., & Field, S. (2016). Developing the cultural awareness skills of behavior analysts. *Behavior Analysis in Practice, 9*, 84–94.

Fong, E. H., & Tanaka, S. (2013). Multicultural Alliance of Behavior Analysis standards for cultural competence in behavior analysis.

*International Journal of Behavioral Consultation and Therapy, 8*(2), 17–19.

Ganz, J. B., Davis, J. L., Lund, E. M., Goodwyn, F. D., & Simpson, R. L. (2012a). Meta-analysis of PECS with individuals with ASD: Investigation of targeted versus non-targeted outcomes, participant characteristics, and implementation phase. *Research in Developmental Disabilities, 33*, 406–418.

Ganz, J. B., Earles-Vollrath, T. L., & Cook, K. E. (2011a). A visually based intervention for children with autism spectrum disorder. *Teaching Exceptional Children, 43*(6), 8–19.

Ganz, J. B., Earles-Vollrath, T. L., Mason, R. A., Rispoli, M. J., Heath, A. K., & Parker, R. I. (2011b). An aggregate study of single-case research involving aided AAC: Participant characteristics of individuals with autism spectrum disorders. *Research in Autism Spectrum Disorders, 5*(4), 1500–1509.

Ganz, J. B., Simpson, R. L., & Lund, E. M. (2012b). The picture exchange communication system (PECS): A promising method for improving communication skills of learners with autism spectrum disorders. *Education and Training in Autism and Developmental Disabilities, 47*, 176–186.

Garcia-Joslin, J. J., Carrillo, G. L., Guzman, V., Vega, D., Plotts, C. A., & Lasser, J. (2016). Latino immigration: Preparing school psychologists to meet students' needs. *School Psychology Quarterly, 31*(2), 256–269.

Glenn, S. (1993). Windows on the 21st century. *The Behavior Analyst, 16*, 133–151.

Hall, W. J., Chapman, M. V., Lee, K. M., Merino, Y. M., Thomas, T. W., Payne, B. K., et al. (2015). Implicit racial/ethnic bias among health care professionals and its influence on health care outcomes: A systematic review. *American Journal of Public Health, 105*(12), e60–e76.

Hambly, C., & Fombonne, E. (2012). The impact of bilingual environments on language development in children with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 42*, 1342–1352.

Hambly, C., & Fombonne, E. (2014). Factors influencing bilingual expressive vocabulary size in children with autism spectrum disorders. *Research in Autism Spectrum Disorders, 8*, 1079–1089. https://doi.org/10.1016/j.rasd.2014.05.013.

Hays, P. A. (2001). *Addressing cultural complexities in practice: A framework for clinicians and counselors*. Washington, DC: American Psychological Association.

Hofstede, G., & Hofstede, G. J. (2010). *Cultures and organizations: Software of the mind*. New York, NY: McGraw-Hill.

Hook, J. N., Davis, D. E., Owen, J., & DeBlaere, C. (2017). *Cultural humility: Engaging diverse identities in therapy*. Washington, DC: American Psychological Association. https://doi.org/10.1037/0000037-000.

Joseph, C., Garruba, M., & Melder, A. (2018). Patient satisfaction of telephone or video interpreter services compared with in-person services: A systematic review. *Australian Health Review, 42*(2), 168–177. https://doi.org/10.1071/AH16195.

Kingsdorf, S. (2014). Review of research: Do you speak my language? Are behavior analysts considering the needs of learners on the autism spectrum? *Childhood Education, 90*(2), 143.

Kremer-Sadlik, T. (2005). To be or not to be bilingual: Autistic children from multilingual families. In J. Cohen, K. T. McAlister, K. Rolstad, & J. MacSwan (Eds.), *ISB4: Proceedings of the 4th International Symposium on Bilingualism* (pp. 1225–1234). Somerville, MA: Cascadilla.

Lang, R., Hancock, T. B., & Singh, N. N. (2016). *Early intervention for young children with autism spectrum disorder*. Cham, Switzerland: Springer.

Li, A., Wallace, L., Ehrhardt, K. E., & Poling, A. (2017). Reporting participant characteristics in intervention articles published in five behavior-analytic journals, 2013–2015. *Behavior Analysis: Research and Practice, 17*(1), 84–91.

Lian, M. J., & Fontánez-Phelan, S. M. (2001). Perceptions of Latino parents regarding cultural and linguistic issues and advocacy for children with disabilities. *Journal of the Association for Persons With Severe Handicaps, 26*(3), 189–194.

Lopez, K. (2014). Sociocultural perspectives of Latino children with autism spectrum disorder. *Best Practices in Mental Health, 10*(2), 15–31.

Lund, E. M., Kohlmeier, T. L., & Durán, L. K. (2017a). Comparative language development in bilingual children with autism spectrum disorder: A systematic review. *Journal of Early Intervention, 39*, 106–124.

Lund, E. M., Nelson, J. R., & Johnson, A. J. (2017b). Keeping an open door: Past problems, best practices, and future directions for working with interpersonal violence survivors with disabilities. In A. J. Johnson, J. R. Nelson, & E. M. Lund (Eds.), *Religion, disability, and interpersonal violence* (pp. 225–228). New York, NY: Springer.

Lund, E. M., Schultz, J. C., Thomas, K. B., Nadorff, M. R., Chowdhury, D., & Galbraith, K. (in press). "It's awful when we get it wrong": An exploratory qualitative study of vocational rehabilitation counselors' perspectives on suicide. *OMEGA: Journal of Death & Dying*. Advance online publication.

Merz, E. L., Roesch, S. C., Malcarne, V. L., Penedo, F. J., Talavera, G. A., Castañeda, S. F., et al. (2016). Social support, simpatía, and hypertension prevalence in Hispanics/Latinos: Findings from the HCHS/SOL Sociocultural Ancillary Study. *Journal of Latina/o Psychology, 4*(3), 131–141. https://doi.org/10.1037/lat0000047.

Paradies, Y. (2006). A systematic review of empirical research on self-reported racism and health. *International Journal of Epidemiology, 35*, 888–901.

Paradis, J., Genesee, F., & Crago, M. B. (2011). *Dual language development and disorders: A handbook on bilingualism and second language learners*. Baltimore, MD: Brookes Publishing.

Passel, J., & Cohn, D. (2008). *US population projections: 2005–2050*. Washington, DC: Pew Hispanic Center Retrieved from http://pewhispanic.org/files/reports/85.pdf.

Rispoli, M. J., O'Reilly, M., Lang, R., Sigafoos, J., Mulloy, A., Aguilar, J., & Singer, G. (2011). Effects of language of implementation on functional analysis outcomes. *Journal of Behavioral Education, 20*, 224–232.

Skinner, B. F. (1953). *Science and human behavior*. New York, NY: The Macmillan Company.

Skinner, B. F. (1981). Selection by consequences. *Science, 213*, 501–504.

Slocum, T. A., & Butterfield, E. C. (1994). Bridging the schism between behavioral and cognitive analyses. *The Behavior Analyst, 17*(1), 59–73.

Suárez-Orozco, C., Yoshikawa, H., & Tseng, V. (2015). *Intersecting inequalities: Research to reduce inequality for immigrant-origin children and youth*. Retrieved from http://wtgrantfoundation.org/library/uploads/2015/09/Intersecting-Inequalities-Research-to-Reduce-Inequality-for-Immigrant-Origin-Children-and-Youth.pdf

Sugai, G., O'Keefe, B. V., & Fallon, L. M. (2012). A contextual consideration of culture and school-wide positive behavior support. *Journal of Positive Behavior Interventions, 14*, 197–208.

U.S. Census Bureau. (2010). *Quickfacts: United States*. Retrieved from https://www.census.gov/quickfacts/fact/table/US/PST045217

U.S. Department of Education. (2017). *Teacher shortage areas nationwide listing 1990–1991 through 2017–2018*. Retrieved from https://www2.ed.gov/about/offices/list/ope/pol/ateachershortageareasreport2017-18.pdf

Valicenti-McDermott, M., Tarshis, N., Schouls, M., Galdston, M., Hottinger, K., Seijo, R., et al. (2013). Language differences between

monolingual English and bilingual English-Spanish young children with autism spectrum disorders. *Journal of Child Neurology, 28*, 945–948. https://doi.org/10.1177/0883073812453204.

Van Houten, R., Axelrod, S., Bailey, J. S., Favell, J. E., Foxx, R. M., Iwata, B. A., & Lovaas, O. I. (1988). The right to effective behavioral treatment. *Journal of Applied Behavior Analysis, 21*, 381–384.

West, E. A., Travers, J. C., Kemper, T. D., Liberty, L. M., Cote, D. L., McCollow, M. M., & Stansberry Brusnahan, L. L. (2016). Racial and ethnic diversity of participants in research supporting evidence-based practices for learners with autism spectrum disorder. *Journal of Special Education, 50*, 151–163.

Zuckerman, K. E., Lindly, O. J., Reyes, N. M., Chavez, A. E., Macias, K., Smith, K. N., & Reynolds, A. (2017). Disparities in diagnosis and treatment of autism in Latino and non-Latino White families. *Pediatrics, 139*(5), 1–10.

Zuckerman, K. E., Mattox, K., Donelan, K., Batbayar, O., Baghaee, A., & Bethell, C. (2013). Pediatrician identification of Latino children at risk for autism spectrum disorder. *Pediatrics, 132*(3), 445–453.