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SI: COMPASSION IN APPLIED BEHAVIOR ANALYSIS

Scaling Compassion and Applications in ABA

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Abstract
In light of recent unrest within and outside the ABA space, the terms "compassion" and "compassionate-care" have become major focuses of both the social and natural sciences. Although the colloquial interpretation of compassion may be well understood, we posit that a thoroughgoing conceptualization of compassion, beyond that which is currently available, is warranted. To that end, we explore historical and current conceptualizations of compassion within the literature, and offer a cogent, functional definition of compassion couched in perspective-taking and examine per Baer et al. *Journal of Applied Behavior Analysis, 1*(1), 91–97 (1968) that compassion is both observable and measurable. Finally, we offer several contexts in which adoption of compassion as outlined is, both in definition and related measurement framework, pragmatic for practitioners of the science and practice of applied behavior analysis.

Keywords compassion · perspective taking · framework · choice

The field of applied behavior analysis (ABA) has received some critical feedback in recent years, which has prompted introspection among the ABA community, as evidenced by this special edition. For example, the research of Taylor et al. (2019) found that, from the perspective of consumers, BCBAs were often deficient in behaviors associated with compassion and empathy. This and other publications (e.g., LeBlanc et al., 2020; Rohrer et al., 2021) highlights that there may be a significant gap in the repertoire of applied behavior analysts that suggests that perhaps we have drifted culturally and institutionally from our originating purpose as a helping profession.

A keyword search of titles and abstracts for the term "compassion" in event archives of The Association of Behavior Analysis International's (2023) annual conferences shows that between 2004 and 2006, there was one result with that keyword. Between 2012 and 2014, there were 8 results, and between 2021 and 2023 there were 92. This sample is just one indication of a recent explosion of publications and conference presentations concerned with compassion and compassionate care in ABA; and it suggests an orientation that is most certainly beneficial to moving the collective behavior of the field in the appropriate direction. However, with contribution comes the potential introduction of ambiguity or lack of precision concerning terminological interpretations.

A tension exists within ABA that may be uncommon among other quantitative sciences. ABA is analytic, technological, conceptually systematic, and concerned with discrete, precisely defined natural phenomena (i.e., operationalized human behavior; Baer et al., 1968), the hallmarks of a natural science. Throughout history, the natural sciences (e.g., biology, chemistry, astronomy, or physics) have not had to produce scientists who are overly concerned with the perceptions of their subject matter. Their concern is accounting for the phenomena they observe and obtaining control within laboratory conditions. Behavior analysis, specifically the experimental analysis of behavior (EAB), began the same way, with a focus of understanding the relationship between an independent variable and the dependent variable; and often one that was abundant and convenient to study (e.g., button pecking and lever pressing). However, ABA has additional commitments to be "applied," meaning the "behavior, stimuli, and/or organism under study are chosen because of their importance to man and society" (Baer et al., 1968 p. 92). "Importance" presumably has to do with how one experiences or *feels* about the behavior and its impact on

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them. Moreover, ABA commits to be effective with generalized outcomes. These results are not likely achieved if the perspectives of those the analyst works with or on behalf of, are not taken into account. The importance of consumer perspective is referenced early in the ABA canon when Montrose Wolf (1978) describes interviewing communities about the "most important characteristics of teaching-parents that they wanted" (p. 207). Their response . . . "warmth."

The culture of natural science set the tone for the applied science, practice and service delivery model of ABA that grew out of EAB. This is reflected in what evolved into the training curricula for applied behavior analysts. Over the years there has been a great deal of emphasis put on operationalizing behavior, understanding the functional relations derived from quantitative analysis, research design, and ethical practice. There has been little analysis of understanding the feelings, perceptions, and experiences of our "subjects" (better put: our stakeholders or those we serve). For decades, scientific and technical methodology have been the predominant features of applied behavior analytic training. Absent from these curricula has been any emphasis on skills related to understanding the emotional state and perspective of those who we interact with professionally (i.e., *empathy*; see Luciano et al., 2020; Valdivia-Salas et al., 2009) and the overt extension of empathy, *compassion* (LeBlanc et al., 2020; Rohrer et al., 2021); sometimes described as benevolent action toward another arising from witnessing another's suffering (Luciano et al., 2020 p. 295).

We suspect that the cultural values placed on the natural science aspects of ABA may have overshadowed the helping profession aspects of ABA. We further postulate that the term "mentalism," a concept that behavior analysts are trained to oppose (Cooper et al., 2020; Moore, 2008), participates in the same verbal networks as words for other internal perceptions and responses (e.g. happiness, worry, fear, contentment, anxiety). Thus, discussions of feelings in a behavior analytic context can meet the same apprehension and even opposition.

If the aim of ABA is to improve the quality of lives, we must be concerned with feelings. Quality of life is perceived and felt, and it is not (in large part) publicly observable. We should not let the appreciation of feelings as relevant behavior and context be confused with an appeal to thoughts and feelings as causal of other behavior (see also Skinner, 1965, pp. 166–169, for a more in-depth treatment of emotion and causality, and Hayes et al., 2001, pp. 6–7, for more on functional contextualism). It is important that we remain aware that pleasure and pain are feelings and satisfaction, safety, value, and warmth as felt by ABA consumers are outcomes of importance. The presence of compassion is integral for these results and must therefore be integrated into the various aspects of the industry and beyond.

Perspective Taking within Contemporary Cultural Contexts

The current U.S. cultural and political climates have served as a reflection pool for the behavior analytic community who have vehemently echoed Skinner's (1987) question "why are we not acting to save the world?" If we can, we haven't . . . yet. This realization along with other criticisms of our practice has urged us, as a community, to change for the greater good. Such opprobriums have served as a call to action for clinicians to reevaluate their practices (e.g. Levy et al., 2021; Malott, 2018; Taylor et al., 2019; Silbaugh & El Fattal, 2021) and offer a more considerate and aware approach with compassion as a focus of our work. With the sociocultural flashpoints of 2020, there has been a greater push for behavior analysis to expand beyond the realm of autism services and into areas such as compassion and social justice (Sadavoy & Zube, 2021). We suspect the accelerating interest in compassion and compassionate care may be attributed, at least in some part, by our constant (direct and indirect) interface with the global pandemic, police brutality, gun violence, and other catastrophic and seemingly unprecedented events. Perhaps it has prompted a collective perspective taking that has increased motivation to seek and provide relief, and offer those suffering options to exist under less aversive contingencies.

The field has seen in the last few years an array of work that both directly and indirectly (i.e., although not explicitly "compassion" the issues are focused on increasing perspective taking of members of a group, recognizing their suffering and/or limited choices and including calls to action to improve the situation) advocate for the deliberate expansion of compassion in the field of ABA. There have been special issues of *Behavior Analysis in Practice* regarding diversity, equity, and inclusion (Zarcone et al., 2019), compassion (current issue), as well as the text *A Scientific Framework for Compassion and Social Justice* (Sadavoy & Zube, 2021), and *Multiculturalism and Diversity in Applied Behavior Analysis* (Connors & Cappell, 2021). Behavior analysts have sought to apply behavior analytic principles to a myriad of global dilemmas (Heward et al., 2022). Their effort to operationalize the behaviors that contribute to systemic injustices while offering ways in which we can intervene and remediate these circumstances is commendable. Such efforts include conceptualizations and research regarding compassion (LeBlanc et al., 2021; LeBlanc et al., 2020; Rohrer et al., 2021; Taylor et al., 2019); Social Justice (Pritchett et al., 2021; Weiss, 2021); racism (Levy et al., 2021; Machalicek et al., 2021; Matsuda et al., 2020; Matsuda et al., 2021; Rose et al., 2022); diversity, equity, and inclusion (DEI; Cirincione-Ulezi, 2020; Gingles, 2022; Hilton et al.,

2021); Black Lives Matter (BLM; Gingles, 2021), police brutality and racism (Sylvain et al., 2022); self care (Slowiak & DeLongchamp, 2022; Fiebig et al., 2020); burnout (Novack & Dixon, 2019; Plantiveau et al., 2018); gendered language (Donovan, 2021; Leland & Stockwell, 2019); LGBTQ2IA (Conine et al., 2022; Leland et al., 2021; Morris, Goetz et al., 2021b); gun violence (Giannakakos et al., 2020; Lee et al., 2019); and gender/sexism (Baires & Koch, 2019; Gravina et al., 2019; Rotta et al., 2021).

To be sure, this is not an exhaustive account of all of the work that has been done to ameliorate systemic injustices, alleviate suffering, or advance the science around these issues. The field has a long history of grappling with such topics dating back to 1978 when *Behaviorists for Social Action Journal* was first published. In addition, these topics have been addressed for over 40 years in *Behavior and Social Issues (BSI)* which contains broad reaching applications of compassion for social good that have been influential for the field of ABA.

Now as then, we believe this is a moment of introspection and widespread cultural evaluation within ABA, and that it is crucial to reference this work as we consider how compassion will be included in our professional values and how those values will influence the behavior of our diverse and growing field.

ABA is undoubtedly a growing field. According to the Behavior Analyst Certification Board (BACB), in 2020 there were 44,025 BCBAs; as of April 2022, the count is 55,628 and growing (BACB, n.d.). This translates to 20% of practicing BCBAs with fewer than 2 years of certified experience at the time of writing. As it stands, there has been some critique of the absence of compassion and compassionate care from the training of many practicing applied behavior analysts (e.g., LeBlanc et al. 2019; Heitzman-Powell et al., 2007; Rohrer et al., 2021). We echo the authors' recommendation that skills associated with compassionate care be an area of explicit training in applied behavior analytic education and fieldwork. We fear the failure to do so may leave the field open to the same criticism, with the same limits to proliferation and existential vulnerabilities.

The world can sometimes appear to be declining across many areas of social significance (Hayes, 2015). As a science, we understand the principles and possess the technology to recognize suffering and act to ameliorate it such that valued behavior can emerge. We hope that our conceptualization of compassion and the suggestions that stem from that are useful in this pursuit.

Historical and Contemporary Role of Compassionate Care

Compassion and compassionate care is far from a new subject in science and health care. Compassion, as an evolved human trait, may be one that was selected for over many thousands of years because of its importance to caregiving, and cooperative relations among community members (Goetz et al., 2010) and has been discussed as such from the earliest days of Darwin's account of natural selection (e.g., Darwin, 1871). Compassionate care, as a term, emerged in health care related to the field of nursing in the 1970s (Lanara, 1976; Tierney et al., 2019), and since then has gained increasing attention, particularly in the past decade with respect to patient care and clinical outcomes (Cameron et al., 2015; Roberts et al., 2019; Strauss et al., 2016; Trzeciak et al., 2017). Compassion is central to medical ethics around the world. For example, compassionate care is explicitly stated in Item 1 of the American Medical Association's Principles of Ethics and is one of the six core values of the UK's National Health Service (Strauss et al., 2016).

Compassionate care has been associated with numerous health-care benefits including improved outcomes in physical health including reduced migraines, enhanced immune responses, and reduced cold symptoms (Roberts et al., 2019). It is also associated with better outcomes among trauma patients, as well as reduced depression and anxiety (Roberts et al., 2019). Compassionate care is also associated with higher treatment adherence, patient satisfaction, and lower health-care costs (Roberts et al., 2019; Strauss et al., 2019; Tehranineshat et al., 2019).

In recent years, there have been numerous efforts to define, study, and promote compassionate care within health sciences to support the evolution of a more acceptable and effective health-care system (e.g., Cameron et al., 2015; Roberts et al., 2019; Patel et al., 2019; Scarlet et al., 2017; Strauss et al., 2016; Trzeciak et al., 2017). Within ABA, similar but relatively fewer efforts have been made in the past few years to encourage the same behavior (e.g., Leblanc et al., 2020; Taylor et al. 2019; Rohrer et al., 2021). Our hope with what follows is not to duplicate the work of these authors in terms of their recommendations to the field, but to suggest a method for assessment to inform customized compassionate behavior as well as measuring impact based on the definition offered in a subsequent section. To do so, however, we must first look to previous interpretations of private events couched in behaviorism, such that we may forge a cogent account for future use.

Misinterpretations within Behaviorism

With the need to integrate compassion into the fold of all facets of ABA, comes a preliminary need to define the parameters of its use from a philosophical perspective. Absent this effort, we are likely to fall subject to further philosophical misinterpretations of a behavior not yet well defined. Science, defined as "knowledge or a system of knowledge covering general truths or the operation of general laws especially as obtained and tested through scientific method" (*Merriam-Webster.com*, retrieved on May 20, 2022). Sustainable sciences, as best they are able, take an

unbiased approach to data and adapt accordingly in service of being a more thoroughgoing and malleable approach. Sciences that lack said flexibility, die out. ABA is in the midst of a course correct relative to its learnings in the context of compassion as a beacon for human service. Although not an exhaustive list, the tragic events surrounding the Black Lives Matter movement, anti-Asian crime amid COVID-19, the untimely death of Elijah McClain and other autistic males at hands of police, in addition to the neurodiversity movement catalyzed the pivot within ABA. Most recently, many within ABA have posited critical reviews of the use of contingent electrical skin shock (CESS) for patients, a practice that appears incompatible with compassionate practices such as consent/assent-based trauma informed/assumed and those efforts concerned with an individual's freedom to choose.

As has been the case for decades, the question remains, "Why would/should it take such society-altering events for a nimble science to adjust or reevaluate its conceptual and philosophical perspectives?" The answer is complex, to be sure. Compared to other disciplines, the science of behavior analysis is but a fledgling in tenure among others much longer in tooth with less forward-facing, societal impact (e.g., physics). With that, behavior analysis has had a shorter history of reinforcement (and punishment) concerning its conceptual and philosophical, patient-oriented successes, as well as its missteps in the same vein. Having said that, we are not recused of responsibly curating initiatives to improvement within our conceptual and philosophical underpinnings. Therefore, we afford several interpretations of this lag, and provide a potentially viable go-forward course of action.

Skinner's (1945) introduction of radical behaviorism, whereby the term "radical" was chosen to entail a "thoroughgoing" analysis of behavior, inclusive of both outwardly observable *and* private events. At its genesis, this stance was viewed as a substantive deviation from more widely acknowledged philosophical perspectives on behavior within psychology, namely methodological behaviorism. With that deviation came criticism from within and outside the behavior-analytic community. We posit, however, that the historical criticisms and present apprehension to adopt this stance, relate to a misinterpretation of respective methodological and radical perspectives regarding the conceptualization of what "counts" as behavior. This unfortunate misinterpretation has, without hyperbole, set back the science of behavior analysis decades now concerning the adoption of more complex analyses of verbal behavior into practice (e.g., relational frame theory [RFT]; see Hayes et al., 2001, for a detailed account).

Methodological behaviorism didn't denounce the existence or participation of mental events on behavior. However, it was its stance that due to their inaccessibility, such events were "outside the realm of a scientific account" (Cooper et al., 2020, p. 13). Skinner's (1945) radical behaviorism was a stark deviation from his predecessors in Tolman, who provided a mechanistic-consistent analysis of behavior, and Hull (1943), who afforded a methodological, hypothetico-deductive approach to behavior, in that there was a reliance on observable, operantly influenced behavior *and* acknowledged the existence and importance of unobservable behavior. However, Skinner afforded no particular, causal status to unobservable behavior (e.g., thinking or self-control); rather, Skinner (1965) stated that these behaviors should be subjected to the same analysis applied to observable behavior. The challenge, however, was in the access to said covert events for an appropriate analysis. What is often omitted from the aforementioned citation is that Skinner noted it was the responsibility of the scientific community to determine ways in which to account for this conundrum of covert, inaccessible behavior.

Another concept Skinner addressed under the umbrella of radical behaviorism is that of *freedom* (de Fernandes & Dittrich, 2018; Skinner, 1965, 1971). The remainder of this article will explore the relationship between compassion and freedom, specifically the freedom to choose among multiple available sources of positive reinforcement when given relief from aversive contingencies and how individuals and organizations might apply this concept in practice.

A Functional Definition of Compassion

In behavior analysis, the object of study is the objectively defined behavior of organisms (Skinner, 1965) and compassion refers to a class of generalized operants that meets this requirement. Definitions of compassion appear in a number of places in behavior analytic literature and appear similar. For instance, LeBlanc et al. (2021, p. 60) describes compassion as "action designed to alleviate the suffering of another person"; Taylor et al. (2019, p. 655) states that "compassion converts empathy into an act aimed at the alleviation of suffering"; and Tarbox and Rodriguez (2022, p. 9) describe compassion as "behavior aimed at alleviating the suffering of others." Although we find each of these definitions reasonable, we believe it may also be helpful to include in the definition more than the intent of the behavior, but the observable effect it has. In this way we might consider a functional definition of compassion to be similar to that of "reinforcement" or "punishment," which is to say that it is defined by its function effect, rather than its topography form or the intent of others. For example, it is not uncommon to hear a therapist refer to a bag of toys as "reinforcers" or for a parent to call a timeout a "punishment," but until those consequences come to have an effect associated with reinforcement or punishment, labeling them as such

is not technically accurate. A similar case can be made for compassion.

We believe that a pragmatic definition of compassion is one that helps individuals to behave more effectively in context. To this end, we suggest that those seeking to act compassionately toward others should be sensitive to its effects so that one might know when their behavior has been compassionate; just because my behavior was intended to be compassionate, does not mean that will function as such. Observing and measuring the effects of compassion, we believe, will help shape behavior that is well-intentioned to that which can be accurately described as compassionate.

A critical component of this definition is the emphasis on effect; to act compassionately is to alter a condition to allow for more of another's behavior to come under the appetitive control of long-term reinforcement. We acknowledge that in many day-to-day, nonscientific circumstances, the influence of the compassionate act may not be conveniently observable for a number of reasons. For instance, in many if not most situations, the effects of a compassionate act may not be experienced until much later and/or the increased availability of choice may be the result of many individual acts. Also, in many situations, the choice under appetitive control may be private. For example, the availability of the choice to experience a moment of hope, or to engage in positive self-talk are all examples of private choices that may become available as a result of another's compassion, but may never be observed by another person. There is no agenda here to suggest that all humanity should only be compassionate if and when the impact can be measured. However, we suggest that within different aspects of ABA, the powers that be should consider setting themselves up for success by planning for self-reports that measure private experience associated with compassion effects and consider sampling procedures that could detect relief of aversive conditions and a resulting increased allocation of behavior under appetitive control.

It has been postulated (e.g., LeBlanc et al., 2021; Tarbox & Rodriguez, 2022; Taylor et al., 2019) that the intent of compassion is to relieve suffering. Suffering being an aversive condition that results in a narrow range of available options to behave. Behavior under aversive control/influence is often reinforced only by one thing, the relief of said aversion (de Fernandes & Dittrich, 2018; Skinner, 1965; Torneke, 2010). It follows then that compassionate behavior on behalf of another would result in less aversive pressure on another's behavior thereby enabling a more probable *freedom to choose* (de Fernandes & Dittrich, 2018) among a wider array of reinforcers resulting in an expanded behavioral repertoire. Said another way, the result of compassionate behavior is an increased probability of response allocation to conditions under which appetitive functions prevail. Furthermore, we contend that behavior intended to be compassionate might be better called altruistic, sympathetic, or empathetic until it results in an increase in the recipient's ability to freely choose, and their behavioral repertoire expands under appetitive control, at which point the effect of compassion becomes evident and the functional criteria for compassion are met. To summarize, *compassion*, in our conceptualization, describes a functional class of behavior that removes or transforms the aversive functions influencing another's behavior, which results in an increase of response allocation to conditions of available positive reinforcement. In service of pragmatism for both research- and field-facing endeavors, the next section unpacks "compassion," as we have conceptualized it, in the context of Baer et al.'s (1968) seminal work.

Compassion through the Lens of the Seven Dimensions

In addition to discussing compassionate ABA using a procedural example, we should also consider how the very framework of ABA might be viewed through this lens of compassion, relief, and choice. In 1968, Baer et al. outlined *Some Current Dimensions of Applied Behavior Analysis* and we believe that compassion as we've conceived it was at its heart.

The *applied* dimension refers to the fact that ABA is the natural science of behavior "applied" to the concerns of society and the individuals in it. One might speculate that this application could only be developed because of our aversion to the responses to aversion other people have. Put another way, we feel what others feel, and we want to relieve it. "Habilitation" is a term defined as "the degree to which the person's repertoire maximizes short- and long-term reinforcers for that individual and for others, and minimizes short- and long term punishers" (Hawkins 1984, p. 284; Cooper et al., 2020, p. 59). Again, we might speculate that *habilitation* is why the applied dimension exists and this definition implies the relief of aversion giving rise for choice to be allocated toward behavior yielding the most reinforcing consequences, short and long term; aka "compassionate." Here we might say that compassion and habilitation are inexorably linked, and furthermore "applied behavior analysts . . . must place the highest importance on the selection of target behaviors that are truly useful and habilitative" (Cooper et al. 2020; Hawkins, 1991).

The *behavioral* dimension clarifies that ABA be concerned with quantified responses of social significance under different conditions; predominantly those conditions that put the individual in contact with the most short- and long-term reinforcement (aka habilitation). Our definition of compassion is especially relevant here because a measurable, habilitative outcome requires that the analyst do what they can to minimize conditions of high aversion and punishment and arrange conditions that maximize reinforcement; and we can

only understand if a habilitative outcome has been achieved if we have monitored how behavior has been allocated across conditions of varying reinforcement, which the matching law (Herrnstein, 1961; Reed & Kaplan, 2011) tells us will be done proportionately. Put another way, habilitation as an outcome requires that we constantly assess for indicators of aversion and maximize choice to make the greatest amount of reinforcement available; habilitation demands compassion. In addition, our definition of compassion strives to meet the *behavioral* criteria in a way that we have not seen in the literature. In practical usage, one should be able to measure an observable response to the compassionate act.

ABA is *analytic*, meaning that there is a strategy to quantitatively evaluate a functional relationship between environment and behavior, and *effective,* meaning that interventions based on the relationship "produce large enough effects for practical value" (Baer et al., 1968 p. 96). If we understand *analytic* to mean scientifically understanding which conditions reinforce and punish behavior and *effective* to mean minimizing punishment and putting one's behavior in contact with sustainable, meaningful sources of reinforcement, then again we find our definition of compassion at the heart of these tenets. Again, our definition of compassion seeks to provide analytic utility to users, by defining a functional relationship between an overture intended to be compassionate and a response indicating that if functioned as such.

"A behavioral change may be said to have *generality* if it proves durable over time, if it appears in a wide variety of possible environments, or if it spreads to a wide variety of related behaviors" (Baer et al., p. 96). This dimension speaks directly to the compassionate agenda of providing relief such that a wide array of opportunities become available. We should note here that relief can also mean relief of a skill deficit. Learning a pivotal skill provides relief from the inability to access new and expanding sources of reinforcement.

Compassion is reflected in the *conceptual systems* and *technological* dimensions in that they both exist to codify a set of practices and root them in a logical, unifying philosophy, that without doing so other dimensions, particularly *effectiveness* and *generality*, would not be possible at scale. As previously stated, the intent of providing a roadmap of compassion through the seven dimensions was meant to afford researchers and clinicians alike the ability to make actionable a thoroughgoing assessment (and subsequent treatment) of compassion. In service of this endeavor, we propose a behavior-analytically consistent assessment of compassion in the section that follows.

Assessment

A common clinical assessment question used in acceptance and commitment therapy/training (Hayes et al., 1999; Tarbox et al., 2020) is to ask *What would you be doing with your time, if _____ was not a problem for you?* (Luoma et al., 2007, p. 45). The purpose of this question is to assess for both what the individual is doing or not doing that is negatively affecting their life as well as the aversive conditions influencing those target behaviors. This question may serve as an assessment template to inform the type(s) of behavior that might provide the desired relief and promote the greatest amount of valued behavior. A more structured version of this concept is provided in Appendices 1 and 2. If our *intent* is to provide repertoire expanding, choice enhancing, relief, then it would help to understand the conditions inhibiting the choices that are most meaningful for the individual *in a given context*.

Impact Measurement

According to our definition of compassion, there should be two main effects from a compassionate response: a sign of relief from an aversive contingency and an increase in responses under appetitive control. A few examples of different contexts have been selected because they are common areas of interest, analysis, and research in ABA; these areas are related to direct care, parent/caregiver training and organizational behavior. When discussing impact measurement regardless of the context, we have two general recommendations: (1) clinicians and/or organizations will want to have a baseline of the aversive experience; and (2) an understanding of how choice is being limited as a result and they will want to have a mechanism for detecting relief and choice expansion. Relief can be measured via self-report (e.g., personal exchange, survey, or questionnaire) or observation of public accompaniments or indices of relief (e.g., Parsons et al., 2012). Likewise, choice expansion could be assessed via self-report or direct observation. It should be noted that these methods can and should be adapted to the method(s) of expression most likely to correspond with the relevant internal conditions for each person or people.

Important to articulating this definition and measurement framework is that we go beyond the colloquial understanding of compassion as being equivalent to "nice," "kind," "benevolent," etc., to provide a method for understanding and confirming compassionate behavior. The next sections will attempt to do just that while providing exemplars of said methods.

Compassion in Direct Care

Coinciding with the increasing call for compassion in ABA (e.g., Taylor et al., 2019) has been a rising call for assent-based practice in ABA (e.g., Kennedy et al., 2021; Morris et al., 2021a; Rajaraman et al., 2022). "One way to conceptualize assent is a freedom to choose whether to participate in a research session or not" (Morris et al., 2021a, p. 1309). In an assent-based model, rather than imposing a

condition where the escape from the learning environment is prevented, the learner is presented with multiple options to choose as a learning condition as well as the choice not to participate (Morris et al., 2021a). In addition, in an assent-based approach the clinician monitors for public accompaniments of happiness and unhappiness as a continuous assessment of assent and withdrawal thereof (e.g., Dalphonse, 2022). In this way, the clinician is assessing for aversive conditions, and ideally altering the context to provide relief such that the learner's behavior may allocate toward a less aversive condition. For learners who may struggle with symbolic communication, clinicians may consider developing indices of happiness (Ramey et al., 2022) for specific learners to facilitate more precise monitoring of aversion to enable more immediate compassionate responses. For example, in the context of an instructional activity, if the clinician detects signs of distress (e.g., self-injury, whining, attempts to elope) the clinician might respond early in the progression to offer a choice to take a break, select a different activity, and/or other options relevant to that learner. If the sign of aversion subsides and an alternate option was selected (e.g., broader distribution of choice) it might be said that the clinician acted compassionately. The opposite might be said, if the clinician decides to persist with the same task despite signs of distress and limiting any alternative choice. This example is just that, and should not be taken as a prescription to respond to certain forms of behavior regardless of function, context, or other possible outcomes.

Compassion When Working with Parents and Caregivers

Although ABA is utilized in many fields (Heward et al., 2022) it is the case that the vast majority of board certified behavior analysts (72.22% at the time of writing) practice in the area of autism spectrum disorders (BACB, n.d.). The involvement of parents and other caregivers is considered an important, if not an essential, part of effective and generalized ABA therapy (Najdowski & Gould, 2014). When working with parents in an ABA context, it is impossible to avoid eliciting emotions related to their child's development and the ever-shifting realities they may be adjusting to. ABA therapy does not operate in an emotional vacuum, and it is important for ABA professionals to be aware of the emotional context of where they practice and that perspective taking, empathy and compassion are important to aware and effective practice (Rohrer et al., 2021; Taylor et al. 2019; Najdowski & Gould, 2014).

Parents of autistic children tend to experience greater levels of chronic stress, guilt, shame, depression, and anxiety relative to parents of typically developing children and even parents of children with other developmental disabilities such as Down syndrome (Eisenhower et al., 2005; Wolf et al., 1989). The omnipresence of these stressors often has a repertoire narrowing effect that reduces parental engagement and adherence in their child's ABA programming (Allen & Warzak, 2000; Andrews et al., 2021), limits their broader social engagement (Hahs et al., 2019), and "impacts their ability to engage in values-directed overt behavior" (Gould et al., 2018).

There is a small but growing body of research into the inclusion of acceptance and commitment training (ACTr) into conventional therapy programs for parents of autistic children (Juvin et al., 2022). Although ACTr does not seek to provide relief from psychological distress per se (Harris, 2006), ACTr strategies do help teach skills that support new ways to relate to aversive private stimuli and verbal behavior as to reduce the repertoire narrowing effects of aversive private events (Bordieri, 2021; Gould et al., 2018; Snyder et al., 2011).

For parents who perceive their choices to be limited due to the repertoire narrowing effects of the thoughts and feelings associated with their child's autism, ACTr may be a valuable part of a compassionate, comprehensive treatment package that would reduce the impact of aversive private events and give rise to a wider range of values-based choices. There have been a number of studies that have found that the use of ACTr with parents of autistic children and in combination with conventional ABA therapy that both aversion relief and choice expanding effects that are consistent with our conceptualization of compassion. For example, Blackledge and Hayes (2006) and Hahs et al. (2019) found that teaching ACTr skills to parents of autistic children resulted in improvements in psychological well-being and reductions in various forms of psychological distress. Andrews et al. (2021) found that using ACTr to support parents as part of a behavioral parent training program positively affected parental stress and their tendency to avoid aversive private events (experiential avoidance; Hayes et al., 1999), increased implementation of behavior improvement strategies, which also led to behavioral improvements in their children. Gould et al. (2017) found that ACTr interventions with parents of autistic children also receiving ABA significantly increased the parents' freely chosen valued behavior. This study in particular highlights the choice-expanding effects that ACTr can have. For example, the dependent variables in this study were valued behavior classes having to do with self-care, balanced parenting, and child autonomy, which often include behaviors such as "Eating dinner together, playing together at home, going for walks in the neighborhood, having a BBQ, going to a community event" (Gould et al., 2018, p. 83), which may not feel like available options to parents avoiding aversive private events and whose behavior is under the control of rigid rules derived from those aversive experiences. To reiterate, if the hallmarks of *compassion* are relief from the effects of aversive stimuli and increased availability of choice as a result, we contend that ACTr in ABA could be useful in that regard.

Although it is beyond the scope of this article to take a deep dive into ACTr, both Gould et al. (2018) and Andrews et al. (2021) used methods that could be useful to other

clinicians, teams and programs for assessing for and measuring the impact of compassion. They both leveraged values clarification exercises to help identify what concepts represent long-term reinforcers for them as well as actions that would be likely to yield those outcomes (e.g., Luoma et al., 2007; Forsyth & Eifert, 2016; Polk et al. 2016; Whittingham & Coyne, 2019). These exercises can be useful to identify what important and valued choices parents might be making if not for avoidance of aversive private events. As discussed previously, these types of exercises could be used as an assessment of sorts to identify if and what type of responses might function as compassionate. Furthermore, the studies mentioned at the beginning of this paragraph also measured how the parents' behavior changed in response to the inclusion of values and other ACTr methods. Both studies showed evidence of increased values-directed behavior, which could also be seen as an increased allocation of choice under appetitive control.

Compassion within the Business of ABA

Much of the attention given to compassion in the ABA literature, especially in recent years, has been focused on compassionate care with clients (e.g. Rajaraman et al., 2022, Taylor et al., 2019) and interactions with caregivers (Rohrer et al., 2021). Although there is a considerable amount of literature devoted to compassion in the workplace in general (e.g., Leach & Kim, 2022; Frost, 1999; Tehan, 2007; Worline et al., 2017), there has been little published on the topic of compassionate workplaces within the business of ABA. In contrast, there are a number of publications addressing turnover and burnout in ABA (e.g., Cymbal et al., 2022; Kazemi et al., 2015; Plantiveau et al., 2018) and a simple internet search of the words "BCBA burnout" will yield multiple pages of websites devoted to this topic. These data would indicate that professionals within the ABA industry often find themselves in contact with aversive conditions that establish escape as the most available and perhaps only option for relief and reinforcement.

Worline et al. (2017) describes compassion, from the perspective of an organization as a four-part process. To paraphrase their work, the steps are (1) to notice the suffering; (2) to understand how to alleviate it; (3) feel empathy for those suffering; and (4) take action to alleviate the suffering. Appendix 1 gives an example of a workplace assessment tool that could be used as a simple electronic survey distributed to a workforce on a schedule that suits the organization. The examples provided include a baseline version (Appendix 1) to be administered as an initial assessment and an intervention version (Appendix 2) that can be administered repeatedly after some organizational effort to relieve aversion and increase values-based choice. In an ideal situation, tools like this can be used to help employers or supervisors detect suffering, understand its impact, illuminate alternate choice possibilities, and thereby take action that could effectively provide the relief and choices preferable to the employee and mitigate some of the concerns discussed in the literature related to burnout (e.g., Cymbal et al., 2022; Kazemi et al., 2015; Plantiveau et al., 2018).

On the subject of choice and its relationship to freedom and compassion, with coercion as its antithesis (de Fernandes & Dittrich, 2018) it is relevant to address the use of noncompete clauses (NCC) in ABA businesses. In short "NCCs are clauses that prohibit an employee from competing with a previous employer after leaving the company by working for a competitor" (Brown et al., 2020, p. 925) and they are surprisingly prevalent in ABA. A study by Brown and Brodhead (2022) found that 70.5% of ABA professionals (RBT, BCaBA, BCBA, and BCBA-D) either had an NCC in their current contract or have had one in the past. NCCs attempt to control behavior by way of negative reinforcement or aversive control. In other words, under an NCC the employee's decision to stay at a place of employment is at least in part the result of the avoidance of litigation, a consequence contacted by half of ABA professionals who have worked under an NCC according to research by Brown and Broadhead (2022). Not only are NCCs perceived unfavorably with respect to ABA consumers, professionals and the field at large (Brown et al., 2020), their function operates in stark contrast to our definition of compassion. Skinner (1971) discusses "freedom" as conditions where choice is not a function of immediate or delayed aversive control (de Fernandes & Dittrich, 2018). If an outcome of compassion is the freedom to choose, then that also includes the freedom to choose to work for another organization without aversive contingencies, immediate or delayed.

Conclusion

The field of ABA finds itself at a tipping point. Given the weight of recent societal events, the movements related to assent-based efforts within patient care, and the not-so-subtle shift in compassion focused agendas amongst myriad state, national, and international agencies, we find ourselves coming down on the increasingly humanitarian side of serving others. To be sure, the endeavor is unlikely to lead to a terminal "destination"; rather, the field will repeatedly be charged with the continuous assessment, manipulation, and evolution of our own theories, conceptualizations, and practices within ABA as societal needs change. Good "science is first of all a set of attitudes" (Skinner, 1953, p. 12), and although Whaley and Surratt (1968) afforded six of these attitudes (i.e., determinism, empiricism, experimentation, replication, parsimony, and philosophical doubt), we find ourselves incumbent to marry these attitudes with compassion. As a science with a tenet of remaining *socially significant* (Baer et al., 1968), we hope that our description and proposed analysis of compassion ushers the field in the direction of continued, more thoroughgoing efforts to integrate compassion to the extent that it becomes an attitude of science.

Appendix 1

Aversion and Choice Assessment for Work: Baseline

What is your biggest problem at work?

How does this problem affect your mental health?

Not at all **A great deal**

1	2	3	4	5	6	7	8	9	10

How much time does this problem take up in your workday?

None **Very much**

1	2	3	4	5	6	7	8	9	10

What would you rather be doing with that time?

How much time do you do that now?

Never **As much as I want**

1	2	3	4	5	6	7	8	9	10

Appendix 2

Aversion and Choice Assessment for Work: Intervention

Is your original problem still a problem?

Y **N**

How does this problem affect your mental health?

Not at all **A great deal**

1	2	3	4	5	6	7	8	9	10

How much time does this problem take up in your workday?

None **Very much**

1	2	3	4	5	6	7	8	9	10

What would you rather be doing with that time?

Are you doing that _____ than last week?

Less **The same** **Much more**

1	2	3	4	5	6	7	8	9	10

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Data Availability No data were collected for this article.

Declarations

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