The evolution of values in the science of behaviour analysis: a discussion paper

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Summary

Behaviour analysis has been subject to considerable criticism in recent years. This paper sets out to discuss key values, concepts and perspectives in the field that are essential for current behaviour analytic practice, while highlighting and acknowledging necessary improvements for practice and training. These include the importance of behaviour analysts (BAs) focusing on social validity outcomes; the value of consumer opinions, alongside collaborative and relationship-based practice; the importance of proactive, function-based interventions that take into account learning histories; and the use of system-wide, quality of life interventions, including capable environments. This paper highlights areas where behaviour analysis needs further focus to ensure adherence to the underpinning values of the science and to continue to evolve as a science of behaviour grounded in clear and modern humanist values. This paper additionally reflects on the later development of behaviour analysis in the UK and Ireland and the influence of positive behavioural support (PBS) in graduate teaching and service application to develop values-based practice.

Keywords: Behaviour analysis, science, socially significant, system wide, values

Introduction

Applied behaviour analysis (ABA) has been subject to considerable criticism in recent years with neurodiversity advocates expressing concern over historical approaches and potential harm experienced by consumers (see Leaf et al., 2022). Significant concerns regarding the provision of early behaviour analytic services created the impetus for the development of non-aversive behavioural interventions and the allied discipline of PBS in the 1980s and 1990s. PBS was derived from behaviour analysis and, over time, has evolved to incorporate other disciplines, approaches to assessment, interventions and contextual approaches (Dunlap et al., 2008; Kincaid et al., 2016). According to Gore et al. (2013, p.18), key components of PBS fall under three categories: values, theory and evidence base, and process. Within the theory and evidence-based category, the authors describe the 'primary use of applied behaviour analysis (ABA) to assess and support behaviour change'. They also refer to PBS as a 'data-driven approach to decision-making' that uses 'functional assessment' and 'constructional approaches to intervention design' (Gore et al., 2013, pp.16, 18), all derived from behaviour analysis.

PBS addressed two major shortcomings in the application of ABA to human services: (1) development of a model of intervention that emphasised improving quality of life and preventing behaviours that challenge through antecedent interventions in addition to the use of behaviour analytic approaches to teach and reinforce socially significant behaviours; and (2) infusion of human values into the practice of behaviour support. These values include respect, collaboration, empowerment and humility (Carr et al., 2002; Lucyshyn et al., 2015). In the PBS framework, BAs may work with other multidisciplinary professionals,

such as psychologists, psychiatrists, speech and language therapists, occupational therapists, nurses and others, to develop multi-element PBS plans with the goal of improving quality of life and decreasing behaviours that challenge for the people they support (Dunlap et al., 2008).

Concerns regarding behaviour analytic interventions have continued into the 21st century and are outlined by Leaf et al. (2022). They provide an in-depth discussion regarding criticisms related to the University of California at Los Angeles' Young Autism Project, punishment and extinction-based procedures, the selection of goals for behaviour analytic interventions and claims of long-term negative outcomes. Others have noted that an emphasis in training on behavioural technology over clinical skills, such as rapport and therapeutic relationship building, can lead to BAs operating from an 'expert model' and appearing authoritarian as opposed to collaborative to individuals with disabilities, families, educators and adult service providers to whom they recommend the type of intervention or approach (Taylor et al., 2019). As a result, many autistic people, their families and service providers have rejected behaviour analytic services and have raised concerns over the selection of therapeutic goals and approaches informed by ABA. Whilst ABA has been the primary focus of criticism, the key scientific inclusion of ABA in the PBS framework model (Gore et al., 2013) has led to some generalised critiques of PBS as well.

The purpose of this paper is to describe essential behaviour analytic values and perspectives that should be highlighted for those less familiar with the field, but also for BAs in order to guide practice. This involves reminding ourselves of important foundational papers that advocated, for example, for the assessment of social validity, constructional approaches and functional perspectives of behaviour. Contributions of contemporary leaders in the field are also discussed. The field of ABA has evolved over recent years with a new generation of leaders asserting concepts that should be part of modern behaviour analytic practice, including an increased emphasis on the assessment of social validity (Leaf et al., 2022), therapeutic relationship skills (LeBlanc et al., 2020), compassionate care (Taylor et al., 2019; Rodriguez et al., 2023), cultural humility (Wright, 2019), mindfulness practice and self-compassion (Moran and Ming, 2020). The paper tracks the evolution and growth of the field of behaviour analysis over recent decades. Shortcomings in translating the technological science of behaviour analysis into value-based behaviour analytic practice are acknowledged and highlighted within the context of improving future training and professional practice.

Development of ABA and PBS in the UK and Ireland

This paper is written from the viewpoint of BAs in the UK and Ireland. The autumn 2023 edition of the *International Journal of Positive Behavioural Support* contained papers on the application of PBS in Australia, Ireland, the Netherlands, Norway and the USA. These papers described the different cultural influences on the values and delivery of behaviour analysis in each country, indicating country specific diversities of approach. It is worth noting that graduate ABA programmes in the UK and Ireland developed later than in North America. Master's level ABA courses commenced at the University of Bangor in 2003, University of Galway in 2006, Trinity College Dublin in 2006, University of Kent (Tizard) in 2012 and University of South Wales in 2013. This was an era distinct from earlier applications of behaviour analysis that, in addition to the use of effective teaching and positive reinforcement methods, equally employed punishment methods to suppress behaviours that challenge.

Behaviour analysis delivery in the UK and Ireland developed initially in community learning disability services at a time of human rights and antidiscrimination legislation, and it focused on improving outcomes for this population. These contextual factors played a role in PBS being embraced by BAs in the UK and Ireland and being infused into graduate training programmes in ABA. PBS has had a substantial influence on the training and practice of ABA in the UK and Ireland, and BAs are familiar with, or indeed work within, the PBS framework used widely in practice. Graduate programmes in the UK and Ireland teach and emphasise seminal articles in ABA, including Wolf's 1978 paper on social validity that helped to lay a values-informed foundation for both behaviour analysis and PBS. Seminal work of the likes of Horner et al. (1990) and Carr et al. (2002) are also included in training. This has helped to infuse practitioners of ABA with technical knowledge and skills in the practice of behaviour analysis and also a rich set of human values that continue to influence practice. This suggests that there has been an early focus on the integration of values into the practice of ABA among UK and Irish practitioners, learning from the mistakes of other countries historically in the dissemination and implementation of behaviour analysis in community settings.

Engagement with consumers

The authors encourage BAs to reflect on shortcomings and concerns raised by consumer groups within the context of an evolving science of behaviour and a growing field of application. The enthusiasm of BAs

to evolve and improve the field, and to listen and work alongside consumer groups, is evidenced by: (a) recent research and publications (e.g., see recent publications in *Behaviour Analysis in Practice*, including an article on dignity and respect by Flowers and Dawes, 2023); (b) changes to the ethical code of the Behavior Analyst Certification Board (BACB) in 2022 (bacb.com/ethics-information/ethics-codes/); and (c) the position statement by the UK Society for Behaviour Analysis (UK-SBA) emphasising quality of life as the key focus of BAs and avoidance of punishments strategies (uk-sba.org/about-behaviour-analysis/uk-sbapositionstatement-.on-the-use-of-punishment/). There have been frequent posts and activity regarding this matter on social media by consumers and academics, and there is a need for continued respectful dialogue.

There is a new generation of leaders in the field addressing consumer criticisms of ABA and offering hope, freshness and vitality for the profession (see *Behavior Analysis in Practice* issues between 2015 and 2024). Most BAs acknowledge the issues raised and are engaging with consumer groups to shape future behaviour analytic practice. In the evolving science of behaviour analysis, it is important to look back and acknowledge our errors, remind ourselves of the intended values and key perspectives of both ABA and PBS, and consider the future expectations of our evolving and increasingly more values-based science. This paper describes the necessity for BAs to place future emphasis on the inclusion of these key practices and values in their work.

Behaviour analysis

Behaviour analysis is the science of behaviour which seeks to understand how the world around us, and our history with that world, have influenced who we are and how we behave from day-to-day. Research tells us that by changing our environment, we can learn new behaviours and skills, even behaviours that we could not learn though previous efforts and alternative approaches. Equipped with knowledge and training in this effective technology, BAs in practice work alongside others to help them to learn new behaviours and skills that will ultimately improve their wellbeing and quality of life. In recent years, the values of behaviour analysis have been questioned and debated, and often without reference to seminal behaviour analytic literature outlining values for their application. This literature is important to highlight as critics of the field are often unaware of the foundational articles that guide the training and practice of BAs, including those practising within the field of PBS.

A science applied to socially significant behaviours

In 1968, Baer and colleagues laid the foundations for how the field of behaviour analysis should apply the science in the most effective and beneficial way for society. It was at this 'embryonic' stage in the field's development that Baer et al. (1968) proposed that behaviour analysis must be 'applied', meaning that it only deals with socially important behaviours. They proposed that the behaviours studied in behavioural application were chosen because of their 'importance to man and society' and that a society is more likely to support behavioural applications that are viewed as dealing with socially important behaviours. 'Applied' was one of the seven dimensions of behaviour analysis outlined by Baer et al. (1968) – the remaining six were behavioural, analytic, technological, conceptually systematic, generality and effective. The authors argued that an application of behavioural techniques can only be considered effective when it has been of practical importance (i.e., when the behaviour change has been significant enough to be socially important).

In light of recent criticisms, it might be argued that the 'applied' dimension was later taken for granted and not emphasised in training, practice or in behaviour analytic research to the extent that it might have been. Consumers and critics of behaviour analysis seem often unaware of this early advocacy for a focus on socially important behaviour change, instead viewing behaviour analysis as a technology for behaviour change in the absence of values or direction. On the contrary, from its inception, behaviour analysis has held a commitment to socially important change, but arguably did not sufficiently demonstrate this aim in research and practice.

Social validity

In their seminal articles, Wolf (1978) and Baer et al. (1987) advocated for subjective measurement of opinions regarding a behavioural approach to intervention, and asserted that through this measurement, society should assess BAs' work. An understanding of how well a behavioural approach is liked with regard to goals, procedures and outcomes (i.e., social validity) is essential and is a core part of how the science is applied today. Baer et al. (1987, p.323) advocated for the assessment of 'consumers' goals before the program is designed', which they suggested would lead to socially valid applications of behaviour analysis. They also noted that when an intervention is socially invalid, 'it can hardly be effective, even if it changes its target behaviors thoroughly and with an otherwise excellent cost-benefit ratio; social validity is not sufficient for effectiveness but is necessary to effectiveness'.

Equally important are people's opinions regarding whether the supports provided by the BA have been effective enough to bring about meaningful change to their lives and, as such, have been of practical importance or are socially significant (Baer et al., 1968, 1987). The authors suggested that we can teach many social skills without understanding if they have improved a person's social life, many safety skills without understanding if a person was subsequently safer, and many language skills without understanding if they were subsequently used in useful contexts. They further suggest that a failure to seek an understanding of the beneficial effects of behaviour analysis at this level would represent a weakness in the effectiveness of the field.

Despite the founders' early and continued advocacy for the measurement of social validity, the assessment of consumers' opinions on the application of behaviour analysis largely did not take hold. For example, in a special edition of the *Journal of Applied Behaviour Analysis*, Bailey (1991, p.447) expressed concern that '…we have, in our zest for science and technology, taken the human concern out of behaviour analysis. We have the technology, but where is the value system to accompany it?'

To this end, contemporary leaders in the field have added five additional characteristics to the seven original foundational characteristics of ABA (Cooper et al., 2020): (1) accountable – practitioners must demonstrate effectiveness of input including repeated measures; (2) public – BAs should publish results for scrutiny in accessible language; (3) feasible – interventions should be available to an array of people including parents and therapists; (4) empowerment – permits clinicians to assess their own skills level with confidence; and (5) optimism – the endeavours of practitioners and researchers should have social meaning. These additional characteristics place more emphasis on accessibility of ABA, collaboration, humanistic values and the social meaning and effectiveness of ABA programmes.

By and large, the assessment of social validity has not been emphasised in the behaviour analytic literature. Ferguson et al. (2019) found that social validity measures were reported in only 12% of articles published in the *Journal of Applied Behavior Analysis*. Huntington et al. (2023) reviewed behavioural literature in eight journals between 2010 and 2020 and found that only 47% of studies included the assessment of social validity, but there was a significant rise in assessments of social validity from 2019 onwards. Similarly, a study in the *International Journal of Positive Behavioural Support* found that between 2011 and 2015

there were no articles published that contained a measure of social validity, but between 2016 and 2020, 30% of articles featured measures on social validity (Caprice et al., 2023), indicating some recent progress. Although this does not represent all behaviour analytic research, it indicates a lack of historical emphasis on the essentiality of social validity measures for evaluating the goals, procedures and outcomes of behavioural interventions, and the need to build on recent improvements in this area of assessment.

Behaviour analysis can look to other related fields such as implementation science (e.g., Fixsen et al., 2011) and to attempts by healthcare providers and researchers to improve patient and public involvement in research concerning their care (e.g., Brett et al., 2014; Gowen et al., 2019). Training programmes in behaviour analysis should teach research methods for assessing social validity of behaviour analytic approaches (e.g., survey methods, qualitative methods) and for engaging users of behaviour analysis at every stage of the research process. Research is also necessary to evaluate the best methods for assessing social validity in practice. No doubt this will (and should) be a focus for researchers in the field moving forward.

Behaviour analysis is built on a foundational value that those who apply the science of behaviour analysis do so for socially important change. Seminal articles in the *Journal of Applied Behavior Analysis* across decades have advocated for social validity (Wolf, 1978; Baer et al., 1987; Schwartz and Baer, 1991). This means that BAs are open to constructive criticism and are willing to allow individuals and society shape behavioural applications. This value should be better reflected in behaviour analytic literature going forward. Leaf et al. (2022) provide a comprehensive discussion on this and recommendations for BAs in practice, which include taking steps to 'live up' to the vision of social validity put forward by Wolf (1978).

System-wide intervention: providing effective supports

In 1987, Baer et al. asserted that the effectiveness of the field would be built primarily on system-wide interventions; that we are not narrowed to a simple therapist–client interaction but consider the life systems in which behaviour analytic interventions are implemented (e.g., families, schools, healthcare). This system-wide perspective has been particularly emphasised in PBS. Carr et al. (2002, p.9) asserted that a 'systemic perspective rejects the notion that practitioner effectiveness depends solely on identifying a key critical intervention that can turn the tide'. The role of the BA within a PBS context is often

to work alongside an individual in a collaborative manner, without any power hierarchy, to conduct a functional assessment and codesign effective supports in the form of a bespoke support plan. This is an effective, individualised and person-centred approach that can help a person communicate in alternative ways, maintain personal autonomy and ensure their needs are met. However, PBS plans can be difficult to implement on a case-by-case basis. If not implemented as planned, they will not be effective and thus not meet the standards of behaviour analysis set out by Baer et al. (1968). System-wide intervention promoting capable environments is a necessary element of the work of a BA, and without such a structure, individualised PBS plans may lack the robust environments necessary to maximise success.

BAs often work alongside vulnerable individuals that are part of a system, be that family, educational or healthcare systems. They advise on the design of environments and responses that avoid sanctions, meet needs and allow individuals to thrive in the classroom, in activities or in relationships. BAs in practice most often recognise that the effects of individualised supports can be hindered or overshadowed by a system that does not support their implementation, that this has negative consequences for individuals' quality of life, and that there is a need for system-wide intervention. However, BAs have been criticised for not confronting this reality in research and behaviour analytic literature. For example, Carr et al. (2002, p.9) argued that 'For decades, applied behavior analysts have prided themselves on the publication of many successful research demonstrations that involve the application of single interventions. These demonstrations have made for great science but ineffective practice.' Going forward, a greater emphasis should be placed on the development of system-wide interventions that consider life systems to guide best practice for the wider field of behaviour analysis, not just within the PBS context.

A functional perspective independent of pathology

The traditional or 'pathologising' approach to behaviours that challenge results in people being diagnosed with a particular disorder where harmful behaviours are seen as abnormal and explainable by the disorder with which they have been diagnosed. However, BAs bring a unique perspective to understanding so-called 'abnormal' behaviours. That is, the perspective that such behaviours have been learnt through interactions with their world over time, that they are often functional (i.e., serve a purpose for that person) and are sometimes necessary in

order for that person to exert control over their own lives or cope with their world. Behaviours are never labelled or seen as 'good' or 'bad', 'rational' or 'irrational', or 'unpredictable'. On the contrary, because they serve a purpose for each person and have been learnt, they can be understood – and this is an ideal starting point for helping others. This functional perspective enables a contextual understanding of the purpose of the behaviour, allowing for the development of effective, bespoke interventions that support the replacement of behaviours that challenge with socially significant skills.

Friman (2021, p.168) recently expanded on the functional perspective of behaviour, putting forward 'the circumstances view of problem behaviour [which] attributes the source of the problem not to the person him or herself but to what has happened to the person over the course of their life up to the occurrence of the behavior(s) of concern'. This view of behaviour echoes that described by Skinner (2002, p.156) in asserting that 'a failure is not always a mistake, it may simply be the best one can do under the circumstances'. In the absence of particular behavioural repertoires (e.g., communication, coping skills, self-management) seemingly 'abnormal behaviours' are the best that a person can do in their circumstances. This perspective does not disregard biopsychosocial influences. In fact, behaviour analytic research has identified the role of vulnerability factors in the causal model of challenging behaviour (Bowring et al., 2019). At the same time, however, BAs acknowledge the fundamental influence of learning histories and context and the ability to learn new behaviours and skills by changing the context. A criticism of ABA historically is that limited coverage of ecological context has been provided, focusing instead on the proximal variables of antecedent and consequence stimuli (Wahler and Fox, 1981). A lack of focus on wider contexts can lead to the omission of important considerations for effective behaviour support, including vulnerability factors, importance and acceptability of goals, contextual fit of interventions, impact of setting events, and style of support provided towards behaviour change.

Gambrill (2012, p.129) provides a more in-depth discussion on this topic and asserts that 'ABA is deeply concerned with individual differences in learning histories and current contingencies and related implications for selection of interventions. ABA requires attention to real-life worlds in which a client lives.' Understanding people's life stories, their circumstances, where they have come from and where they are now helps us to recommend adjustments to their current circumstances

so that their quality of life can be improved. The authors of the current paper suggest, as did Friman (2021), that this functional perspective leads to behaviour analysis holding an inherently compassionate view of behaviour. However, while this may be true, it is acknowledged that such an understanding of behaviour may not always translate into a compassionate application of the science. Ethical and philosophical frameworks for practice are important in this regard, as is training for BAs on compassionate, relationship-based support with stakeholders. An emphasis on ensuring compassionate applications of behaviour analytic supports informed by the circumstances view of behaviour is essential for the continued evolution of the science of behaviour analysis.

Strengths-based approach

Gambrill (2012, p.127) describes behaviour analysis as 'a constructional approach to change in which there is a focus on constructing repertoires including those which compete successfully with undesired behaviors'. She argues that behaviour analysis shares the 'strength perspectives' embodied in strengths-based approaches to working alongside others. The constructional approach is not a new concept; it was put forward initially by Goldiamond (1974) and described subsequently by other authors such as Delprato (1981). Unfortunately for the field, BAs are often associated with an ability to help in situations where a reduction of behaviours that challenge is necessary. For this reason, it is not surprising that external points of view of behaviour analysis might be that practitioners are in the business of decreasing behaviour, when in reality the focus is on skills teaching, learning and meaningful quality of life changes.

Within the context of supporting people experiencing behaviours that challenge, meaningful quality of life changes occur when we work closely with an individual to understand why harmful behaviours are happening, then help them to replace harmful behaviours with alternative behaviours that serve the same purpose but are more conducive to wellbeing. For example, PBS practitioners are commonly asked to help others to reduce behaviours that challenge, and at a surface level this seems to define their role. However, the goal in reality is to develop capable environments (McGill et al., 2020) that meet people's needs and to teach meaningful behaviours and skills that lead to the prevention as well as reduction of harmful behaviours and a better quality of life. BAs in the UK and Ireland have been leading this approach for a number of years, alongside coproduction of goals, focus on respectful and collaborative working relationships

with stakeholders, measurement of outcomes (including quality of life and social validity, e.g., Bowring et al., 2019), and respect for the actions of consumers.

Applications of the science of behaviour analysis make use of what is known about how people interact with their world and how that shapes the ways in which they learn to behave in differing contexts. Thus, the focus of behaviour analysis is on learning and how practitioners can adapt a person's environment to enhance their ability to learn important behaviours and skills. The work of Sidney Bijou, a founder of behaviour analysis, is a testament to this focus (see Bijou, 1995). Understanding child development was, in his view, dependent on understanding the child's environment (Bijou, 1995). He believed that rearranging the child's learning environment might bring about changes in behaviour and learning (Mendres and Frank-Crawford, 2009). In addition, his work on behaviours that challenge not only focused on understanding why such behaviours occur, but also suggested viable methods for enabling alternative behaviours (Mendres and Frank-Crawford, 2009).

Avoidable suffering

Gambrill (2012) further discusses the 'avoidable suffering' that can be minimised using behaviour analysis, and questions how many people spend their days in punishing environments with few pleasant consequences; how many lost opportunities there are for reinforcement of important behaviours and skills; and how many avoidable instances of punishment result from different programmes. Many BAs in practice can recount experiences of visiting residential homes where staff have reduced community activity (due to 'risk reduction' arguments or to low arousal plans) following behaviours that challenge at community venues and have neglected to assess the function of the person's behaviour or to develop function-based support. This is a punishment contingency that leads to no improvement in the person's behaviour for the long-term and significantly impacts quality of life.

In *Beyond freedom and dignity* (2002), Skinner wrote about how common the use of punitive sanctions is in society and how people become skilful punishers, an approach to managing others that is more reflective of control rather than support. Skinner saw punishment as the logical consequence of an unscientific analysis of human behaviour and against the tradition of freedom and dignity. He described the operant nature of behaviour, and believed punishment was an ineffective way of controlling behaviour, leading to short-term change but mostly resulting in individuals avoiding the punishing stimulus.

BAs recognise punishment contingencies very quickly, as it is part of their training to do so. On a day-to-day basis, a large part of the role of the BA is to identify those punishment contingencies and punishing environments and to replace them with reinforcement contingencies that are more conducive to learning meaningful behaviours and establishing a better quality of life. In doing so, they help others avoid the 'avoidable suffering'.

An evolving science

It is well known that PBS emerged in the 1980s in response to ethical concerns regarding the use of aversive procedures (LaVigna and Donnellan, 1986; Meyer and Evans, 1989; Dunlap et al., 2008). One may also consider that the field of behaviour analysis has too evolved in the nearly four decades since. Over time, behaviour analysis has grown exponentially and has been applied across a wide array of people, settings and services, and in a growing number of countries around the world (Heward et al., 2022). The systems and frameworks within which it is applied are no doubt contextual and specific to the laws, policies, values and cultures within which it is implemented. For example, Carr et al. (2002) discussed person-centred values and the inclusion movement as sources for the development of the PBS approach. Both person-centred values and the inclusion movement are ideals that are embedded within the policies and procedures of all disability services across the UK and Ireland. This means that BAs working in those countries are applying behaviour analysis within the context of these values and principles, whether they are identifying as BAs or PBS practitioners. There are many contexts (e.g., early intervention, educational settings) across the world within which values-informed behaviour analysis has evolved and is being implemented with positive outcomes.

However, it should be acknowledged that behaviour analysis has also been applied in contexts that have been less concerned with social validity, coproduction of goals and collaboration with other disciplines. This is worth considering within the context of growing and evolving training and education in behaviour analysis. Rather than being solely reliant on context-specific values and principles, the field might benefit from a universal centring of social validity across training programmes. It follows that behavioural technology should not be taught in isolation, without consideration of the clinical skills necessary to effect meaningful environmental and behavioural changes in practice.

For example, a criticism of BA historically has been the authoritative nature of 'expert' BAs, the lack of engagement with consumers and, in some instances, difficulties in developing supportive relationships with the people and families they are working alongside. Taylor et al. (2019) conducted a survey in the USA examining caregiver views on the relationship skills of BAs. A sample of 95 caregivers assigned low scores to BAs on several items related to listening and collaboration skills, as well as empathy and compassion. Taylor et al. (2019) urged course leaders in behaviour analysis to include formal instruction in relationship skills as key teaching goals. Such research helps to inform training and professional practice in behaviour analysis and reflects growth in the field.

That behaviour analysis is evolving as a field is reflected in a number of recent publications calling for graduate training in compassionate care and therapeutic relationship skills (Taylor et al., 2019; LeBlanc et al., 2020), mindful practice and self-compassion (Moran and Ming, 2020); cultural responsivity and humility (Wright, 2019), interpersonal skills and effective repertoires for practice (Callahan et al., 2019), and ethical continuation of professional relationships with non-behavioural colleagues (Brodhead, 2015). No doubt this necessary focus on clinical relationship-based skills in behaviour analytic literature will continue to grow and inform training and professional practice.

BAs can deepen their practice beyond knowledge and skills in behavioural technology, towards the assessment of social validity, ensuring that the goals, procedures and outcomes of behavioural interventions are viewed as important, acceptable and viable by consumers, including the children, young people and adults who receive these services. Key areas that might be considered essential to pre-service learning and future in-service practice include training on coproduction of supports, systemic perspectives on the provision of supports, collaboration with other disciplines and stakeholders, clinical and interpersonal skills, mindful and reflective practice, as well as more robust methods for assessing social validity.

This is of particular importance within the context of the BACB no longer certifying practitioners outside of North America. As countries all over the world begin to develop their own pathways to certification, professional codes of ethics and frameworks for professional practice, social validity should be placed at the core for identifying goals, designing supports and evaluating outcomes, as proposed by Wolf in 1978. For example, the UK-SBA

has developed its own accreditation scheme for BAs and introduced the UK-SBA Code of Ethical and Professional Conduct (uk-sba.org/about-uk-sba/ethics/).

The fields of ABA and PBS remain allied fields. Those who have developed PBS should be commended for both purposefully emphasising the centrality of social validity in practice and recognising the necessity for systems change, as well as including additional key elements for practice: (a) improved quality of life as the goal; (b) a life span perspective; (c) ecological validity; (d) collaboration with principal stakeholders and (e) a pragmatic understanding that contributions to the development of effective supports can come from multiple theoretical perspectives (Dunlap et al., 2008). An excellent framework for the ethical application of the operant conceptual model, and the assessment and intervention technologies derived from behaviour analysis, is clearly laid out within PBS. BAs may choose to work within the values of the PBS framework, as has been the case for many BAs in the UK and Ireland. Alternatively, BAs will do well to work within similar contextually appropriate models of intervention that centre social validity and human values.

Conclusion

Real-world applications of science and technologies can take many forms, some of which benefit society and some that have the opposite effect. Scientific discoveries and resulting technologies are 'ethically neutral … [and] can be used by villain or saint. There is nothing in a methodology which determines the values governing its use' (Skinner, 2002, p.150). It is therefore of the utmost importance that emphasis is placed on the values held by a field that applies such technologies, to the same extent that there is emphasis placed on the technology itself. Behaviour analysis has evolved and grown over the past number of decades, resulting in a powerful behavioural technology. Recently, Heward et al. (2022) published an A-to-Z list of behaviour science applied to 350 domains of social significant behaviours that illustrated the broad applicability of behaviour analysis for helping others. However, it could be argued that behaviour analysis has historically placed greater emphasis on technological application and that values-based application has only gained momentum in more recent years. The field of behaviour analysis, despite asserting values in foundational papers, has seen a slow evolution of values into practice which requires further effort.

This paper seeks to assure those in receipt of services that the profession of behaviour analysis is listening to concerns. As Donald Baer stated (1986, p.147):

> *The true function of social validity measurements is to reveal discontent … Whenever we turn up discontent, we should ask those respondents in as many ways possible, no matter how incorrect we consider their answers to be. The point is to rely as much as possible on their socializations, not our own.*

Recent research has indicated that the field is listening and evolving practice as a result of consumer feedback and concerns. The later development of behaviour analysis in the UK and Ireland and the influence of PBS have led to a culturally specific values-based application. This paper has further highlighted key values-based areas where work is required by BAs in research and practice to continue to improve this field.

This paper has also clarified key values and perspectives held in the field of behaviour analysis and the socially significant impact of BAs' work. BAs in practice each have multiple stories of transforming people's lives, which offer inspiration and hope to the people BAs will support in the future. We encourage BAs to reflect with self-compassion on their practice and values and be encouraged by the knowledge that seminal articles in behaviourism outline a science of behaviour that can be, and has been, applied to support the most vulnerable and to benefit society. Whilst recent years may be felt as an uncomfortable period in our history, the field is evolving and developing rapidly as a result, with fresh and inspiring new leaders and new focal areas of research.

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