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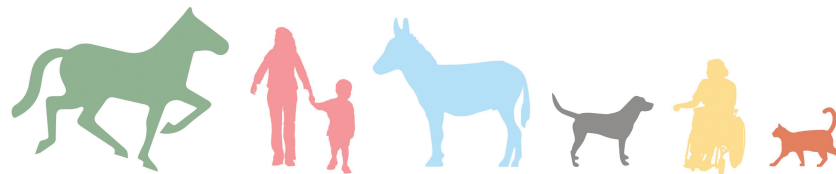


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Animal Welfare: A Contemporary Understanding Demands a Contemporary Approach to Behavior and Training

E. Anne McBride¹ and David J. Montgomery²

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Abstract Contemporary understanding of One Welfare highlights the intrinsic link between animal and human welfare and ethics, regarding physical and psychological well-being as equally important. These principles apply to all animals we keep, regardless of why we keep them. One factor influencing psychological welfare is how animals are prepared for their life, including how they are taught (trained) to behave. Where such preparation is lacking or inappropriate methods are used, animals will be fearful and/or frustrated, resulting in impaired welfare, problematic behavior, and potential injury to humans and other animals. How animals are trained and by whom are the focus of this paper. Currently, animal trainers and behaviorists are unregulated. Thus anyone can claim to be a “professional” or “expert” with no required testing of knowledge or skill. This enables the continued use of outdated, less humane methods and increases confusion for those seeking competent help and for those looking for a career path. With increasing numbers of companion animals, there is commercial incentive to work in this sector and an urgent need for clarity and regulation if One Welfare is to be enhanced. This paper catalogues the UK experience of developing a regulatory framework for this sector. It argues the need for and benefits of regulation and maps the progress of the Animal Behaviour and Training Council since its inception in 2010 with the bringing together of various stakeholders including veterinary organizations, animal welfare charities, and associations representing practitioners. It describes the rationales leading to the development of agreed standards, academic provision to support those standards, and assessment procedures common to all. It considers future challenges within a turbulent political and economic environment, including securing government recognition for a single UK regulatory authority. Though this goal is yet to be realized, significant progress has been made and momentum is gathering.

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Introduction

As the findings of scientific research permeate society, people's perceptions and understandings of the world around them are slowly shaped. Science, and possibly public pressure, can lead to changes in legislation, which in turn stimulates further research. This triangulation of science, ethics, and legislation is clearly demonstrated in the field of animal welfare and human-animal interactions. Research across taxa, including invertebrates (Mather & Anderson, 2007), in areas such as animal emotions (Panksepp, 1998; Panksepp & Panksepp, 2013), personality (Stamps & Groothuis, 2010), and cognition and perception (Call, Burghardt, Pepperberg, Snowdon, & Zentall, 2017; Wynne & Udell, 2013), has led to steady improvements in animal husbandry and physical and psychological well-being. The last few decades have seen wider acceptance of the evidence that providing species-appropriate environmental, physical, and mental enrichment is as integral to welfare as good diet (Yeates, 2017).

Increased knowledge has in turn improved animal welfare legislation and public understanding of animals and of responsible ownership, regardless of why animals are kept. It has also led to the development of new roles for animals, as in medical detection dogs (Willis et al., 2004) and landmine-detecting rats (Poling et al., 2011). However, paradoxically this new enlightenment has brought with it a range of unexpected threats to animal welfare. One is the dis-association of animals' species identity by attributing to them human characteristics, known as uncritical anthropomorphism (Wilkins, McCrae, & McBride, 2015). Frequently this reduces physical and behavioral welfare (Serpell, 2002), as in breeding for anthropomorphic traits like brachycephalia (CAWC, 2006; Packer, Hendricks, & Burn, 2012), inappropriate management causing obesity (Nijland, Stam, & Seidell, 2010), or problem behavior (Appleby, 2016). The negative effects of such anthropomorphic attitudes can also be very subtle.

Increasingly animals are used to improve human psychological and physical health and the rise of

new animal industries, such as animal-assisted interventions (IAHAIO, 2014) and service or assistance animals. Some of these roles require specifically breeding and/or training animals to perform particular functions. These include improving or accommodating physical disabilities, as in horses used in therapeutic riding and assistance (service) dogs for visually, aurally, or physically compromised people. More recently this use of animals has been extended beyond physical concerns, including for people with conditions that can involve unpredictable behavior such as post-traumatic stress disorder, autism, and other developmental disorders (Burrows, Adams, & Millman, 2008; APA, 2013).

Over the last 40 years animals have increasingly been used by the public as a form of self-medication in our modern, socially isolated societies (Hortulanus, Machielse, & Meeuwesen, 2006). The most commonly reported reason for acquiring an animal is that the person hoped this would fill a need for companionship and reduce loneliness (e.g., Müllersdorf, Granström, Sahlqvist & Tillgren, 2010; Raina, Waltner-Toews, Bonnett, Woodward, & Abernathy, 1999; Staats, Wallace, & Anderson, 2008; Westgarth et al., 2010). These expectations may not always be realistic (Andreassen, Stenvold, & Rudmin, 2013; Herzog, 2011), as animal rehoming and euthanasia figures testify (Coe et al., 2014; O'Neill, Church, McGreevy, Thomson, & Brodbelt, 2013).

It has been suggested that different terminology should be used to better reflect why we keep animals and our relationship to them. This includes replacing the terms "pet" with "companion animal" and "owner/keeper" with "caregiver/guardian" and using the labels "co-therapists" or "assistants." This alone will not result in an overall betterment of animal welfare (Hankin, 2009). Unfortunately, many current practices have long-term implications for welfare (Appleby, 2016; Broom & Fraser, 2015; McBride, 2017; Yeates, 2017). Just as traditional concepts of animals as "simply an animal" led to ignorance of their attributes and the complexities of their needs, so welfare issues may be clouded and potentially exacerbated by terminology that subtly (albeit unintentionally) humanizes them.

Regardless of species, how an animal is prepared for its life implicates psychological welfare. Preparation includes breeding for good physical and mental health, and ensuring that sufficient and appropriate social and environmental experiences occur throughout the animal's development to behavioral adulthood (Appleby, 2016; Yeates, 2017). This is essential to good psychological health. Equally important is how the animal is taught (trained) to behave. How animals are trained and by whom are the focus of this paper. The implications for animal and human welfare of inappropriate training are considered. Then the UK experience is used to illustrate how this can be tackled through defining and regulating standards. We describe the steps taken, challenges encountered, and achievements made, developing a structure that engenders consensus within the animal industry, government, enforcement agencies, and the public, be they animal guardians or not. It is the aim of the authors that this will encourage others to reflect on the situation in their own profession/country and help them see ways in which improvements can be made.

Why Training and Behavior?

Since the work of Pavlov, Thorndyke, and Skinner, substantial scientific endeavor has investigated how animals (and people) learn. Principles of classical and operant learning apply across taxa. In classical learning, associations between stimuli that engender feelings of pleasure/relaxation or those that lead to feelings of anxiety, fear, or frustration are learned. Classical learning is also an integral part of operant learning whereby new behaviors are learned, be they self-taught or human guided (trained).

In operant learning the animal learns the consequences (outcome) of a behavior in the presence of a specific stimulus (which may be part of the environment or a trained "cue"). If the outcome is appetitive, it is a reinforcer. Reinforcers strengthen the behavior, increasing the probability of its reoccurrence. The animal learns by experimenting with different behaviors, or modifications thereof, to differentiate those that fail to achieve the reinforcer from the behavior that is successful.

Reinforcers can be positive (PR), where something pleasant is added to the animal's immediate experience. Often termed a "reward," these include, but are not limited to, food, play, and praise. "Fail" behaviors do not result in the reward. This outcome is known as negative punishment (NP); negative because the reinforcer is not attained. Consider a television control. The fail behavior is pressing the wrong button and the TV does not switch on; you learn by failure (negative punishment) which button-pressing behavior is correct and rewarded by a TV picture. This is known as "positive reinforcement + negative punishment" (PR+NP) learning.

Alternatively, a reinforcer can be negative (NR), where something unpleasant is removed from the animal's immediate experience, thereby decreasing anxiety/fear. This too is a reward, and a very powerful one. Imagine you are hungry and there is some food, but someone is threatening you. You will not start to eat until the threat has gone away. Feeling safe (relief) is a very powerful reinforcer for learning new cue-behavior-outcome relationships. Of course, to be reinforced in this way, there must be something aversive that the animal is learning how to escape or avoid. This aversive is known as a positive punisher (PP). This method is known as "positive punishment + negative reinforcement" (PP+NR) learning.

In PP+NR training the animal learns which behavior enables it to avoid a fearful outcome (PP). Research shows that learning is impaired, and motivation and compliance are reduced (frequently leading the human to use even more positive punishment). PP+NR causes stress. Welfare consequences can be serious (Ziv, 2017) where trainers lack skills, as in mistiming the application or removal of the positive punisher, meaning the desired behavior is punished (Maier & Seligmann, 1976; McGreevy & McLean, 2009; Solomon, 1964). These compound the animal's level of anxiety and confusion, potentially causing behavioral "shutdown" (learned helplessness/depression) or displays of aggressive behavior (Baragli, Padalino, & Telatin, 2015; Blackwell, Twells, Seawright, & Casey, 2008).

Conversely, research repeatedly shows animals can, do, and are willing to learn through the

alternative PR+NP. PR+NP learning promotes relaxed and pleasant emotions and thus cooperative behavior. It is humane, enhances learning, increases compliance, and is more forgiving. Should a trainer mistime the delivery of the PR, mild frustration rather than anxiety or fear is the likely reaction of the animal. This has been well known since the 1930s and used, notably by Keller and Marian Breland and Bob Bailey, to train several species for various applied commercial and military roles (see e.g., Bailey & Gillaspay, 2005; Breland & Breland, 1961). While many others used PR+NP, it was not until the 1980s that this method started to become widely accepted in the companion dog field (O’Heare, 2014) and even later in the horse world (Kurland, 2001; Schönig 2004, 2015; Waran, McGreevy, & Casey, 2007).

Humans are generally reluctant to change their beliefs and accept that their previous actions were wrong. And herein is the nub of the matter, or at least a major part of it. There is a long-held (and mistaken) belief that animals must be subdued and subjugated, otherwise they would dominate, and potentially attack, the human (Bradshaw, 2011). Additionally, such subjugation required using fear (PP+NR) to train animals, whatever the species. Such fear-based training is still the experience of the vast majority of animals, be they horses, elephants, dogs, cattle, or others. Techniques include physical punishment through the use of chains, sharp prods and prongs (collars or ankus), electric shock, bits, kicking, and whipping. More subtle is the use of psychological punishment, threat, as in round pen training of horses. Calling it “natural” or “Join-Up” suggests this method is pleasurable, but actually the horse learns how to avoid the anxiety/fear of being threatened (Henshall & McGreevy, 2014).

These deeply held cultural beliefs mean both the public and those working as trainers/behaviorists may be ignorant of animal capabilities and/or of humane training methods. Their knowledge may be passed down from friends/family, or based on incorrect books, websites, and video and TV programs (Roshier & McBride, 2012), often presented by charismatic, but not well-informed, individuals (Thompson & McBride, 2016). We acquire many of our beliefs

from sources we consider to be reliable and authoritative (Bohner & Wänke, 2002). Where there is a lack of clarity about what is an expert, it is not surprising that outdated information is still common currency.

People tend to humanize animals (uncritical anthropomorphism), ascribing both desirable and less desirable qualities to them, such as despotic, domineering ambitions. Considering animals as quasi-human, as co-therapists, companions, or as family members leads to unrealistic expectations of how they should behave in human society and the attribution of incorrect intentions to their behavior (Serpell, 2002; Wilkins et al., 2015). For example, we assume they will be accepting of and content with our way of doing things, for example not going for a walk when it is raining but going for a walk when it is hot and sunny (too hot for dogs!); to enjoy being dressed up; to be tolerant of everything a child does; and to be friendly to all comers, human or animal, whatever the circumstances.

Animals, however, are not human. Not understanding and meeting their species’ needs leads to problem behaviors such as “disobedience,” aggression, and destruction of property when alone. Disobedience and aggression may be misattributed to the animal being “dominant,” “mad,” or of a “dangerous type”—a misconception that has led to ineffective, dangerous dog legislation based on how an animal looks rather than an objective analysis of how a dog might behave in any given circumstance (McBride, 2013). Interestingly, different explanations for similar behaviors are given for different species. The dog who chews furniture when alone might be considered “naughty” or “getting back at the owner for being left”; a similar problem of stable chewing in the horse is considered a “vice,” a “bad habit.” In neither case does such humanization allow the animal to be considered in its own right as an intelligent, social species that may be suffering from anxiety and/or boredom when alone.

Lack of knowledge and uncritical anthropomorphism can have grave outcomes. An animal who is anxious or fearful, or simply has not been taught how to behave calmly and appropriately can cause serious, even fatal injuries to people. These include falls

when riding anxious horses (Ball, Ball, Kirkpatrick, & Mulloy, 2007); being run into or bitten by a dog (Kasbekar et al., 2013), or simply being pulled over when it is on a lead (Wilmott, Greenheld, & Goddard, 2012). Such events affect the injured person, the animal, its owner, and society with concomitant physical, emotional, and economic costs. For the individual animal, its welfare may be compromised: its activities and interactions with people may be restricted; it may be relinquished for rehoming, abandoned, or euthanized. O'Neill and colleagues (2013) surveyed UK veterinary practices. They found that dogs under three years old were most commonly euthanized because of problem behavior or being involved in a road traffic accident, which likely involved problem behavior, such as the dog chasing something across the road or running away from a frightening stimulus.

It is a mistake to think all this only applies to irresponsible people. Many will have sought professional help; but it may not have been appropriate, sufficient, or delivered by a truly knowledgeable and skilled person. Problem prevention and resolution requires providing the animal and its humans with the relevant life skills and knowledge. An expert would be competent, having both skills and current knowledge of animal behavior, animal training, and how to educate and train people so the needs of human and animal are met. Competency should be independently assessed and the public provided with a clear way of judging the competence of those proclaiming expertise.

The Animal Training and Behaviour Council—The Way Forward?

In the early 1990s the UK debate on how competency and clarity could be judged began with the establishment of the first organization to represent practitioners that set membership requirements, shortly followed by three more. In 1994 the University of Southampton started the first university-accredited course in the field of animal training and behavior therapy. This was designed and taught by academics and practitioners, providing future practitioners

with relevant knowledge and skills base. Around 2000, the Association for the Study of Animal Behaviour (ASAB) began to devise a set of standards for behaviorists, but progress was slow. The subject of industrywide regulation was first broached around 2004 with the Royal College of Veterinary Surgeons (RCVS) calling for all paraprofessionals to self-regulate their activities, but with no additional motivation very little happened.

In 2008, the Companion Animal Welfare Council (CAWC), an independent advisory body, published a report entitled “The Regulation of Companion Animal Services in Relation to Training and Behaviour Modification of Dogs.” This summarized industry views on issues relating to UK provision and the extremely confused state of education provision available for those wishing to enter the profession. The range of “qualifications” available was large and the terminology used inconsistently. For example, an award of a “diploma” could mean attendance at a week-long course run by an individual with no external accreditation, or a course run by an accredited college/university, which could be delivered at pre- or postdegree level! The report concluded there was an urgent need for an industry-based self-regulating body to set standards for knowledge and skills and ensure compliance. The report noted evidence of widespread support for such a regulatory body to address the confusion and welfare issues facing the sector. This proved to be a pivotal document that led to the setting up of the Animal Behaviour and Training Council (ABTC) in 2010.

Steps to the ABTC

Meetings chaired by CAWC (2008–2010) were attended by sector stakeholders. The aim was to devise a means of establishing agreed standards of education and practice and an inclusive and accountable regulatory framework to uphold these standards. Such a regulatory body would provide a single point of contact and thus clarity to the public and other professions (e.g., veterinary profession, law enforcers) wishing to find professional and expert help. Of course there was discussion about what would be the

most appropriate organization or process to manage such a system; however, these meetings exposed the real challenges facing the creation of such a regulatory framework.

The bulk of these challenges were from some organizations that represented practitioners, and the main concern regarded the setting of standards. The fear was that any standards set higher than those currently required of their members would be disadvantageous, with the potential for loss of reputation and income for individual members. However, the range of qualifications required by these organizations at the time covered the complete spectrum from nothing other than a membership fee to a degree level of education, all with equally varying requirements of practical ability. The initial challenge thus was to find the common ground that all could agree with. Each organization strongly defended their criteria as representing the most suitable for an industry-wide standard. Few compromises were made.

More disconcerting was the disagreement concerning traditional (PP+NR) versus humane (PR+NP) methodologies: their welfare impacts and the level of education and training required to be considered competent. At one extreme, PP+NR coercive methods were considered perfectly acceptable techniques that could be learned through experience alone. This approach is neither scientific nor rational. Whilst PP+NR is in the trainer's "toolbox," good understanding of learning theory and high levels of skill are required for it to be used in a minimally aversive manner. Even then it can lead to unintended consequences (Cooper, Cracknell, Hardiman, Wright, & Mills, 2014; Schalke, Stichnoth, Ott, & Jones-Baade, 2007). Clearly, gaining competency through experience alone is not in the welfare interests of those animals on whom that individual practices!

In early 2010, the CAWC-facilitated meetings ended. Consensus was only reached in the wording of the CAWC code of practice for those involved in the training and behavior modification of any species of animal. While it was a good start, the code has limitations and only indirectly deals with the issue of training methods in the wording of two provisions, namely:

4.3 Safeguard and promote the welfare of others especially the client and the animal.

4.4 To work in the best interests of the animal and the person responsible for the animal's care. Avoid any individual behaviour which might unreasonably violate professional boundaries, unreasonably damage professional relationships or cause harm to the animal or client.

In the absence of consensus, a policy of majority rule had to be pursued as the next best alternative. Coincidentally, a scoping project was being run by the National Lifelong Learning Network for Veterinary and Allied Professionals (VetNet LLN) into the potential for regulation of the sector. The overwhelming majority of organizations represented at the CAWC meetings formed a working party, receiving funding under this project to the end of 2010. In December 2010, this group resolved to create a regulatory framework administered by a single umbrella organization.

Thus, the Animal Behaviour and Training Council was created. In addition to organizations directly representing trainers and behaviorist practitioners, founder and subsequent members represent all parts of the sector including the veterinary profession, animal welfare charities, organizations involved in training working dogs, the British and Irish Association of Zoos and Aquariums, and PAWSI, the Performing Animals Welfare Standards International (UK), underscoring that training and behavior issues are not restricted to dogs (<http://www.abtcouncil.org.uk/founder-members.html>).

It was agreed that for the sector to be truly professional:

- a. There must be a single authoritative regulatory body with the power to decide upon appropriate levels of education and the right to admit and discipline members.
- b. Individuals must have successfully completed the required education and training to be assessed as competent practitioners of their skill by the approved regulatory authority. This competency is then recognized by the awarding of relevant postnominal letters, as in

VN (Veterinary Nurse) or CEng (Chartered Engineer).

- c. A register of individuals who meet such standards would be publicly available.

For a regulatory authority to be credible for recognition by the sector it must:

1. Be publicly accountable.
2. Be specifically created and developed to carry out the role.
3. Provide a wide scope of common standards for all species.
4. Become established as a point of contact for expert advice in the sector.
5. Provide independent, rigorous external validation of practitioner organization procedures.
6. Work to the highest standards, in terms of both the practitioners and its own management.
7. Represent all those working in the sector.
8. Be transparent, with its own procedures independently validated.
9. Develop a demonstrable commitment to best practice.
10. Gain the widest possible support of the sector.

With these principles in mind, two overarching tasks had to be completed. First was agreeing on the regulatory structure and policies of the ABTC, including how individual practitioners are assessed and monitored. Second was the setting of professional roles and standards of competence.

ABTC: Regulatory Structure

The regulatory structure could take one of two forms. Either the ABTC could deal directly with practitioners and carry out individual assessments, or it could be an umbrella organization that would facilitate the creation of common standards that other organizations could apply to their members.

There were already established organizations with the will and expertise to implement industry standards and hold their members accountable. For the ABTC to take on this role of assessing and

monitoring potentially thousands of practitioners would be both labor intensive and costly and potentially would be seen as “self-serving.”

The alternative was the umbrella structure, an organization of organizations. This gives independence from the individual practitioner and enables inclusion of both practitioner and nonpractitioner organizations. This then provides wider expertise, the ability to take a more holistic view of the sector, and thus speak on behalf of the sector at the national and international levels.

Hence, the ABTC is an umbrella organization. Membership is open to all organizations with an interest (stakeholders) in the sector of animal training and behavior. There are three membership categories (Figure 1):

- Practitioner Organization Members directly represent practitioners of animal training and/or behavior therapy. They have voting rights on decisions taken by the ABTC.
- Advisory Organization Members are stakeholders that do not directly represent practitioners. They have voting rights on decisions taken by the ABTC.
- Supporting Organization Members: as per advisory organizations but with no right to vote.
- Individuals can only be members by invitation for having a particular skill or specialist knowledge that will benefit the work of the ABTC. They do not normally have the right to vote on ABTC matters.



Figure 1. Schematic representation of ABTC structure

To be publicly accountable an organization must be transparent and its own procedures must be independently validated. Only in this way can individual practitioners and the public have confidence in the system. The ABTC takes this seriously. The constitution was developed using a Charities Commission model, and external validation was formalized in 2015 when the ABTC became a registered charity. It is the only UK charity solely concerned with the psychological and physical welfare of animals undergoing training and behavior therapy.

A second document that has undergone significant development and continues to do so is the Quality Management System (QMS). The QMS complements the constitution. It details all policies and administrative procedures, including the code of conduct applicable to the management of the council. All such procedures are based on ISO 9001:2015, which formally assesses the procedures applied by organizations that represent practitioners. Additionally, the ABTC is in the process of implementing ISO 17065 Conformity assessment—Requirements for bodies certifying products, processes, and services. Thus, transparency and independent verification concerns are being met.

Practitioner Organization Members

Of course, issues of transparency and independent verification should also apply to organizations that represent trainers and behaviorists. Across the sector, 8 such organizations were identified at the time of the 2008 CAWC report, 11 in 2010 and over 20 in 2017.

The ABTC designed a system of verification that an organization must meet before it can become a Practitioner Organization Member of the ABTC. It must be demonstrated to the ABTC membership committee that its procedures and policies satisfy the rigorous tests of ABTC membership by showing that:

- a. The Code of Conduct is appropriate and sufficiently well policed to ensure that practitioner standards of practice fall within those required by the ABTC, the CAWC Code of Conduct being the minimum requirement.
- b. Practitioner membership criteria match the agreed ABTC standard for the given practitioner register(s) applied for. This is a rigorous process that ensures that every skill and learning outcome is achieved by each candidate before being passed as competent.
- c. Methods of practitioner assessment are transparent and equitable.
- d. Monitoring of practitioners' ongoing compliance with the ABTC standards is effective.
- e. ISO 17024:2012 (General requirements for bodies operating certification of persons schemes) is being implemented
- f. The ABTC ethical advertising standard is complied with.

At the time of writing there are seven organizations that have met these criteria. Four others are in the process of applying to become a Practitioner Organization Member of the ABTC.

ABTC Register of Practitioners

The final level of the ABTC structure is the Registers of Individual Practitioners. There is a register for each role (see the following section). Individuals who meet the standards of more than one role can choose to be listed on each relevant register. Registered individuals can use the relevant ABTC practitioner role logo.

ABTC is an umbrella organization, thus there are no individual practitioner members. To be listed on an ABTC register, individuals must be members of and assessed by an approved ABTC Practitioner Organization Member. Assessment thoroughly tests all the skills, knowledge and understanding requirements of the chosen register role in accordance with ISO 17024. Once registered, the individual's qualified status is maintained by meeting ABTC continuing professional development requirements. The ABTC council independently verifies these annually by checking a random selection of names from each register.

All member organizations and individuals on the registers must comply with the ABTC ethical

advertising guidelines (see <http://abtcouncil.org.uk/images/Ethicalmarketingguidelines.pdf>).

These guidelines are actively enforced, and some individual practitioners have had to amend their websites in order to comply. Noncompliance means removal from the register and loss of the right to use the ABTC logo.

Professional Roles

Prior to the ABTC, there was a general informal view that there were essentially two roles, trainers and behaviorists. Many claimed to offer both services and the boundaries were fluid. However, discussions showed that this was naïve and the consensus was that there really were four core roles. Though there are many specialties in terms of species or activities that branch out from these core roles, it was unanimously agreed that they form the foundation upon which all training and behavior therapy activities are based. These core roles are:

- **Animal Trainer (AT):** works solely with the animal and is that animal's handler. For example, a trainer in an assistance dog organization is one who trains the dog in the basic required skills. The person who then matches the dog with a disabled guardian and trains the handler/dog combination would come under the category of training instructor.
- **Animal Training Instructor (ATI):** trains animals and their handlers, for example someone who delivers dog training classes. They work in a prophylactic manner, aiming at the prevention of behavior problems.

There are many specialist activities associated with these two roles in terms of both species and activities, including training animals for specific functions. However, each and every trainer and training instructor should first qualify under the appropriate core role. For example, ATI would include the puppy party and puppy class instructor, the instructor who works with military dog handlers, and the instructor of gundog, ring craft, agility, pet dog,

or dog dancing classes. The ABTC has left the potential open to add specific requirements for different functions, including these. Interest has already been shown in including a specialist standard for search and rescue dogs and assistance dogs. Such specialties of species and function can be added to the individual's entry on the relevant register and specialist subregisters may be created in the future.

- **Animal Behavior Technician (ABT):** works with animals only and/or in human-animal interaction settings to provide prophylactic behavioral advice; make assessments to devise behavior modification and/or environmental modification plans to improve animal welfare, and/or refer on to clinical animal behaviorists, animal trainers, and animal training instructors as appropriate. Dealing with behaviors that are symptomatic of behavior disorders or other pathologies and those of a dangerous nature are beyond the scope of this role.
- **Clinical Animal Behaviorist (CAB):** works with animals whose behavior is problematic. Working with relevant others, such as the animal's guardian/handler and veterinary surgeon, their role is to discover the etiology of the problem behavior and devise and implement a behavior modification program that is specific to that case.

Clearly, any individual could be qualified and competent in more than one role, but *all* should be qualified to carry out the role of trainer.

It would be incorrect to consider these four roles as an ascending hierarchy. A set of overlapping circles of knowledge and skills is a more realistic representation (Figure 2). This negates any inaccurate perception of superiority. These four core roles complement each other and in this respect are similar to the specialties seen in other disciplines, including veterinary surgery and veterinary nursing or being a doctor or paramedic. The foundation knowledge in both cases is the same, but the depth of knowledge and skills changes with the role.



Figure 2. Schematic representation of the four core roles

Additional Roles

It was considered that there were two other categories that were worthy of further consideration.

- **Accredited Animal Behaviorists (AAB).** This temporary role represents a “grandparenting” scheme, a way of recognizing the many current practitioners of behavior therapy who had made efforts to get educated and trained to a standard that met many, but not all, of the requirements of clinical animal behaviorist. The register was open to new applicants from 2011 to 2016. It will only exist until 2021. This 10-year period allows people to gain further education in order to be placed on one of the core role registers. Those still on this register will be transferred to the animal behavior technician (ABT) register.
- **Legal Expert Witness.** The selection of expert witnesses for legal cases frequently relies on little more than someone’s self-declaration of expert status and that person’s ability to convince the court that he/she should be regarded as an expert. It is therefore conceivable that someone who promotes unethical training methods and relies on scientifically discredited theories to explain behavior could be recognized as an expert in the eyes of the law. In order to be placed on the ABTC expert witness register an individual must be on one of the

core role registers and show his/her ability as an expert.

Creating Standards of Competence for Each Role

The UK National Occupational Standards (NOS) are documents that describe the knowledge, understanding, and skills associated with a job in a wide range of work activities. This model was adopted by the ABTC. Standards for each role were created by considering current best practice and the relevant NOS developed by the UK sector skills council for land-based and environmental industries, LANTRA.

Discussions encompassed knowledge and understanding elements *and* associated practical skills required to achieve competence, considering both generic aspects and role specifics. For example, teaching and classroom management skills are needed for the role of ATI, and a deeper understanding of human psychology and counselling skills for CAB.

Creating the standards associated with the roles of AT and ATI was relatively unproblematic. There was little disagreement regarding the differing requirements for each role.

Likewise, agreeing on the CAB standard was a straightforward process because the work had already been done several years earlier by a founder member, the Association for the Study of Animal Behaviour (ASAB) Accreditation Committee. This was adopted as a complete package.

However, during this process it was realized that many individuals were carrying out aspects of the CAB role, notably provision of prophylactic advice and designing modification programs for a range of more straightforward behavior problems. Thus, while not meeting the full CAB competency requirements, their work encompassed more than that of trainers or training instructors. This led to the hitherto unrecognized role of animal behavior technician.

The academic element (knowledge and understanding) of the standard for this new ABT role

represents two-thirds of that required of a CAB. The role also bridges the gap between ATs, ATIs, and CABs, creating a more comprehensive team to address the wide-ranging demands of the sector. The ABT role is particularly suited to veterinary nurses and rescue establishment staff. It provides a career path for those not wishing to progress to CAB or who might struggle academically to do so. It also enables progression to CAB, as limited behavior therapy can be practiced facilitating valuable practical experience while completing the CAB program.

The standard for each role comprises two parts: academic knowledge and understanding, and applied practical skills. These can be found at <http://www.abtcouncil.org.uk/standards-for-practitioners.html>

Creating a Structured Approach to Education and Training

As reported by CAWC (2008), education provision to the sector was unstructured and of variable quality. Thus, there was a clear need for the ABTC to consider how an individual could gain appropriate academic education to meet the knowledge and understanding standards for each role.

This entailed clarifying what a competent practitioner needed to know and the depth of understanding required for each role. For example, while it might be agreed that all four roles require understanding of the relationship between health and behavior, the level that that is required by the animal trainer or animal training instructor is perhaps less than for the clinical animal behaviorist. To take this example further, it may be agreed that everyone needs knowledge of the relationship between nutrition, health, pain, and behavior, and how to recognize pain. However, it might be considered that further understanding of the relationship between behavior and particular health issues, such as hypothyroidism, or medication regimes is imperative to the role of the clinical animal behaviorist.

It was decided to base the ABTC standards on the framework of formal education levels used in England (Anon., 2014). In brief, compulsory school

education continues to level 2 (around the age of 16), after which students can leave or continue to gain pre-university/higher education studies at level 3 (around age 18). Education from level 4 upward is called higher education. An undergraduate degree qualification (BA, BSc) is at level 6. Master's degrees are at level 7 and a doctorate at level 8. The same system is used in the parallel system of further education (FE), which occurs outside of schools and universities and encompasses apprenticeships and vocational qualifications. Table 1 outlines the corresponding EU and USA levels and illustrates how each increase in level demands a greater depth of knowledge and understanding of a subject and more complex academic and application skills.

It was agreed that the ABTC roles were best served by education at different levels, reflecting the competence requirements of each: animal trainers at level 3, animal training instructors at level 4, animal behavior technicians at level 5, and clinical animal behaviorists at level 6.

It is essential that it can be confirmed that the desired learning has taken place. This is done through "Learning Outcomes," which are statements of areas that must be formally assessed. Thus, for each role the standards for knowledge and understanding requirements are written as learning outcomes. Of course, learning outcomes must be assessed in ways appropriate for the level being addressed. For example, even complex multiple-choice questions are limited in testing higher-order cognitive skills (Nicol, 2007), really only assessing surface understanding. They may be an absolutely appropriate method for addressing knowledge in some areas, for example basic anatomy or some aspects of basic learning theory. However, this method would be an inadequate means of assessing deeper knowledge and understanding, synthesis of information, or critical application skills, as in those needed for history taking or designing training/behavior modification programs at AT, ATI, ABT, or CAB level.

To assist individuals in identifying courses that meet the academic standards of each role, the ABTC has set up a Course Recognition process. In addition to considering the syllabus content, level, and

Table 1 Qualification Levels and Examples of Associated Expectations of Knowledge, Skill, and Competence Showing Increasing Depth

England & Wales (CQF)	ABTC	Europe (EQF)	USA	Knowledge & Understanding	Application & Action	Autonomy & Accountability
Level 3 A level AS Level	ABTC: Animal Trainer	Level 4 Baccalaureat Matura	11th & 12th Grade High School Diploma	Factual & theoretical knowledge in broad contexts	A range of cognitive & practical skills required to solve specific problems	Exercise autonomy & judgement within limited parameters
Level 4 Higher National Certificate (HNC) 1st year of a BSc degree	ABTC: Animal Training Instructor			Factual & theoretical knowledge enabling analysis & evaluation based on informed awareness of different perspectives	A developed range of cognitive & practical skills required to adapt & use appropriate methods of investigation	Exercise autonomy & judgement within broad but generally well-defined parameters, take responsibility for the work of others
Level 5 Foundation degree Higher National Diploma (HND)	ABTC: Animal Behaviour Technician	Level 5 Advanced Vocational Education	Associate degree	Comprehensive, specialised, factual & theoretical knowledge, awareness of limitations	A comprehensive range of cognitive & practical skills required to develop creative solutions to abstract problems	Exercise management & supervision in contexts of activities where there is unpredictable change; review & develop performance of self & others
Level 6 Bachelor's degree	Clinical Animal Behaviourist	Level 6 Bachelor degree	Bachelor degree	Advanced knowledge, involving a critical understanding of theories & principles	Advanced skills, demonstrating mastery & innovation, required to solve complex & unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for: decision-making in unpredictable contexts; managing professional development of individuals & groups

CQF : Credit and Qualifications Framework

EQF: European Qualifications Framework

A full description of each CQF level can be found at www.naric.org, the UK national agency for the recognition and comparison of international qualifications and skills.

methods of assessment, education providers must evidence the expertise of tutors, the quality of resources, tuition, and academic rigor with which any course is delivered, be that face to face or online/distance learning or a mixture of both types of delivery.

To date all academic provision in the sector has tried to be retrofitted to the ABTC standards. This has been an untidy exercise. The need for new provisions designed specifically to address the standards must be developed to allow students a clear path to satisfying qualification needs. The ABTC will continue to work closely with education providers to help realize this need.

Next Steps and Future Challenges

Three main areas of future challenges have been identified: costs, public awareness, and realizing the goal of a single government-recognized UK regulatory authority for the training and behavior sector.

Costs

It is inevitable that costs will be incurred by any project the size of ABTC. To date the organization has relied on a huge amount of voluntary input by the membership, with all essential costs covered by membership fees through prudent management. This is not sustainable in the longer term and the future pace of growth will depend largely on generating a more substantial income. As part of the need to be publicly accountable, ABTC has registered as a charity and the question of fundraising is coming to the fore.

Public Awareness

Although many animal guardians will ask for help, others may not know that highly qualified help is available or may engage in inappropriate help. That the ABTC provides an independent and reliable source of qualified practitioners is well known within the associated professional circles. It also needs to become more widely known among the animal

guardian population. To some extent this will happen over time by word of mouth, but a more substantial publicity campaign will be required, particularly as the general ethos runs contrary to that of many current television programs on animal training and behavior therapy.

Some guardians may not be able to afford to pay for trainer or behaviorist services. Consequently, in 2017 the ABTC is piloting a welfare fund system that will contribute to such costs in well-deserving cases.

Single Regulatory Authority

The One Welfare concept highlights the intrinsic link between animal and human welfare and ethics. It impacts on all aspects of human-animal interactions, including companionship, assisted therapy, and service animals. As a regulatory body the ABTC serves One Welfare by improving standards in training and behavior. This reduces the number of animal-related injuries and the number of animals relinquished to welfare charities or euthanized, and facilitates animals being free from fear and distress and having opportunities to display normal behavior.

There is an obvious need for such regulation. We estimate that in the UK 10,000 people are directly engaged in training and behavior activities with dogs, let alone other species. There is the potential to engage other related activities including animal day care, animal sitters, and dog walkers. Some are already taking the initiative to work with the ABTC.

However, a system of voluntary self-regulation lacks formal authority, and a minority will choose to operate outside of the structure. Despite the considerable majority of the sector backing the ABTC initiative, there are still those that resist coming under the ABTC umbrella. Reasons given for this position include not recognizing ABTC's status in the sector, a desire to carry out the regulatory role themselves, and no legal requirement for individual practitioners to engage.

This can be solved by there being a *single* regulatory body recognized by government. While politicians have demonstrated enthusiasm and support for the ABTC, a statement of formal recognition is still lacking.

Progress has been hindered by several changes in relevant government ministers. Though the civil servants provide a governmental continuity of awareness of the ABTC's developments, the subject is never a high priority, creating further delays. Recently, the Royal College of Veterinary Surgeons published its strategic plan. This revisits its 2004 concerns by considering how allied professionals might be regulated as part of the vet-led team (RCVS, 2017). The veterinary profession has long been part of the ABTC, and this may add impetus to realizing the ABTC's objective.

Conclusion

This paper briefly described current scientific understanding of animal learning. It argued the One Welfare need for competency of those working in the training and behaviour sector. The paper outlined relevant history leading to the creation of the Animal Behaviour and Training Council in December 2010 and described the process of developing an independent, transparent, inclusive, and accountable regulatory body and associated standards of competence. While not yet formally recognized as the single sector authority, in just seven years the ABTC has made significant progress. Acknowledged by relevant government departments, it is mentioned in documentation for law enforcers and is invited to join working parties. Internationally contributions include to the development of European standards and in being consulted by the British Columbia Society for the Prevention of Cruelty to Animals (BC SPCA) in preparation for setting standards in Canada.

The authors trust the information herein will assist others who are considering ways to improve training and behavior in their own profession and/or country.

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