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Paper

A preliminary investigation into the moral reasoning abilities of UK veterinarians

C. E. M. Batchelor, A. Creed, D. E. F. McKeegan

Veterinary medicine is an ethically challenging profession, but the ethical reasoning abilities of practising veterinarians in the UK have never been formally assessed. This study investigated moral reasoning ability in 65 qualified veterinarians (38 practising and 27 academic) and 33 members of the public in the UK using the Defining Issues Test. Academic veterinarians had higher scores than members of the public but practising veterinarians did not. There was large variation in moral reasoning abilities among qualified veterinarians. Moral reasoning score in veterinarians did not improve with years of experience. These results show that despite having a professional degree moral reasoning skills of practising veterinarians may be insufficient to deal with the demands of their profession. This could have implications for animal welfare, client services and veterinarian wellbeing. The results highlight the need for more training in this area.

Uniquely, veterinary care involves a three-way ethical relationship between the animal patient, the client and the veterinarian (Williams 2002). Veterinarians have an obligation to protect animal welfare but also to advocate for the interests of their clients. As well as their responsibilities towards their animal patients and their clients, veterinarians have obligations to several other parties including themselves, their peers and society as a whole (Rollin 2006). The interests of these different parties often conflict (C. A. Morgan, Stepping up to the plate: animal welfare, veterinarians, and ethical conflicts, unpublished doctoral dissertation, University of British Columbia, 2009, Tannenbaum 1993, Mullan and Main 2001, Rollin 2006, Wiseman-Orr and others 2009), resulting in ethical dilemmas; situations where it is not clear which is the right course of action to take (Morgan and McDonald 2007). Ethical dilemmas can be a daily occurrence in veterinary practice (Self and others 1994). In a short survey carried out on UK veterinarians, 94 per cent of respondents reported that they faced at least one ethical dilemma per week (Batchelor and McKeegan 2012). Common ethical dilemmas including convenience euthanasia (where a healthy animal is euthanased because it is no longer wanted), excessive treatment requested by the owner (that may cause prolonged suffering) and financial limitations to treatment (where the client cannot, or does not want to, pay for optimal treatment of the animal) were considered to be highly stressful. The effect of exposure to continually stressful experiences has not been investigated in veterinary medicine, but there is concern that it could result in 'moral distress' (where lack of ability to act to resolve an ethically problematic situation leads to feelings of

futility (Wiseman-Orr and others 2009; Epstein and Delgado 2010)) and even a predication to commit suicide (Bartram and Baldwin, 2010).

Veterinary ethics is further complicated by the lack of general agreement with respect to our duties to, and the moral worth of, animals. Some practitioners will believe that animals have intrinsic moral worth, while others might argue that animals have only instrumental moral worth (meaning that they matter only through their value to humans), or in extreme cases, that they have no moral worth (cannot suffer or it does not matter if they do). Views will also differ depending on the species of animal in question and its place on the 'socio-zoological scale'. Morgan (unpublished doctoral dissertation, 2009) found that veterinarians make judgements about their clients' behaviour and they have clear ideas about how their clients should behave. In concordance with these beliefs, the veterinarians decided whether the clients were making good decisions for their animals, and they described giving preferential care to patients and clients who they assessed positively. This highlights that questionable reasoning is often used in veterinary decision-making and that there are often inconsistencies in the care offered.

Given that veterinarians regularly face ethical dilemmas and they often find these stressful, the ability to come to reasoned, defensible decisions in these cases is of great importance, both for the welfare of animals but also for the wellbeing of the veterinarians themselves and the benefit of clients. It is therefore vital that veterinary graduates are equipped with good moral reasoning skills. Moral reasoning is the process by which people determine that one course of action is morally right and another course of action is morally wrong when faced with an ethically problematic situation (Rest and others 1997). It involves defining what the moral issues are and giving consideration to all the parties affected, as well as determining the best course of action.

L. Kohlberg (The development of modes of thinking and choices in years 10 to 16, unpublished doctoral dissertation, University of Chicago, IL, 1958) pioneered a six-stage theory of cognitive moral development, based on principles of justice that described how individuals develop their capacity to reason morally. These six stages are sequential and are often condensed into three levels of two stages each (Table 1). Preconventional

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TABLE 1: Kohlberg's six stages of cognitive moral development

Level	Stage	Basis of reasoning
Preconventional	Stage 1—heteronomous morality	Aim is to avoid punishment, mainly by following authority. Often physical consequences described for 'wrong behaviour'. Reasoning is egocentric and often involves words such as 'must' and 'always'.
	Stage 2—instrumental relativism	Aim is to win rewards; still egocentric but considers others needs if impacts own needs (I'll scratch your back if you scratch mine).
Conventional	Stage 3—interpersonal conformity	Movement away from self-interest. Seeks social approval; revolves around relationships with others and wants to avoid disapproval, often refer to putting themselves in other's shoes. Reasoning is based on conforming to social norms.
	Stage 4—community conformity	Again, not solely about themselves, about society as a whole. Wants to maintain order through law and an understanding that people should depend on each other to maintain order in society is apparent (Gibbs and others 1992). Actions may be questioned but action taken tends to remain within traditional boundaries.
Postconventional	Stage 5—social utility and individual rights	Considers society and individuals within society. Believes in equality and that we have an obligation to others. Would challenge laws if violated their fundamental principles Demonstrates critical thinking about relevant ethical issues. Uses ethical frameworks to justify viewpoints. Able to formulate arguments for and against different viewpoints, can see the validity of arguments that they do not support and take personal responsibility for their choices.
	Stage 6—universal ethical principles	Universal ethical principles centred on the notion of justice. Similarly to stage 5, willing to challenge unethical practices and act on principles if law violated them.

Adapted from Kohlberg (1976)

Stage 6 is not distinguishable from stage 5 in any assessment measures and the two are normally grouped together as 'postconventional level reasoning'

moral reasoning is usually used by preadolescent children (Kohlberg 1968), whereas most competent adults attain the level of conventional moral reasoning (Hartwell 1995). Professional education aims to equip graduates with the tools to develop well-reasoned arguments for professional problems (Bebeau 2002), which are often complex, and moral maturity is linked to better clinical performance (Sheehan and others 1980, Krichbaum and others 1994). Hence, achieving a predominance of postconventional moral reasoning should be sought in professional programmes.

Several generic tests have been developed with which to measure moral reasoning. The most extensively used of these measures is the Defining Issues Test (DIT) (Rest and others 1974). In the DIT, respondents are presented with a series of fictional ethical dilemmas and are asked to choose which action they would take from a choice of three. The potential reasons for their decision are provided, and these are rated by the respondent as to whether they were important in their decision-making or not. Scores indicate the predominant stage of moral reasoning used by the respondent and are based on the Kohlbergian stages but are classified into three moral schema (cognitive structures of moral reasoning): personal interests (PI) (stage 2/3), maintaining norms (MN) (stage 4) and postconventional (PC) (stage 5 or above) (Rest and others 2000). The DIT is able to discriminate between different levels of moral maturity corresponding to educational level (with higher levels of education correlated with higher scores) (Rest and others 1974). In relation to this, norms were created from large data sets to indicate what respondents at different educational levels would be expected to score on average. In these norms, professional graduates would be expected to outperform adults in the general population and graduates of bachelor's degrees in the USA (Rest 1993). The DIT has shown good internal reliability and test-retest reliability (Rest and others 1974) and provides a validated, standardised measure for evaluating the moral reasoning of subjects in any discipline.

The only recorded study of the moral reasoning abilities of qualified veterinarians compared small and large animal practitioners in the USA using the DIT (Self and others 1988). The results showed that there were no differences in the moral reasoning abilities of these two groups and the mean scores for both types of practitioner were lower than would be expected for a professional group (Rest 1993). Further studies carried out by the same research group on veterinary students found that veterinary education did not improve moral reasoning abilities to the level expected of a professional degree (Self and others 1991, 1996). No similar studies have been carried out in the UK.

This study examined the moral reasoning abilities of a small sample of veterinarians practising in the UK and compared them

to scores of members of the general public using the DIT. Differences in moral reasoning with regard to demographic variables, clinical experience, area of practice and place of qualification were also investigated. It was hypothesised that qualified veterinarians would achieve higher scores than members of the public.

Methods

Defining Issues Test

The DIT is a scenario-based, multiple-choice test. It was created as a pencil and paper test but is now also available electronically. The respondent is presented with a series of hypothetical ethical dilemmas (in the form of stories) that centre on social issues. After reading each story, the respondent first has to decide on which action they would take (would take said action, would not take said action or is not sure) and second, rate each of a list of 12 accompanying reasoned statements as either 'of great importance', 'of much importance', 'of some importance', 'of little importance' or 'of no importance', in making their decision. Third, the respondent is asked to rank four of the statements as most important, second most important, third most important and fourth most important in making their decision. An example of a dilemma presented is whether a doctor should euthanase a terminally ill patient or not. Some of the statements that accompany the stories are nonsense statements made up of complex vocabulary in an attempt to identify and eliminate respondents who choose statements based on how they sound rather than their meaning and actual importance in decision-making. There are three versions of the DIT, but the newest version, the five-story DIT-2 (Rest and others 1999), was used in this study to assess the participants' moral reasoning ability (and hereafter will be referred to as the DIT).

Scoring methods

The completed DITs are scored at the University of Alabama's Office for the Study of Ethical Development using Scantron Opscan software (Scantron Corporation, USA). Returned results will indicate responses that should be purged due to unreliability. Responses can be purged due to incomplete test protocols or because they meet particular criteria (Bebeau and Thoma 2003) such as high propensity for choosing meaningless items or inconsistent ranking and rating (e.g. ranking a statement as most important but rating it as of little importance).

The DIT results include the P score (percentage of the respondent's answers that use postconventional moral reasoning), the N2 score (degree to which postconventional moral reasoning is prioritised but also the degree to which lower level moral reasoning is rejected), profile indicators and types. The profile indicator shows whether the respondent is consistent in

TABLE 2: Categorisation of types on the Defining Issues Test

Type	Profile indicator	Predominant schema of moral reasoning
1	Consolidated	Personal interests
2	Transitional	Personal interests
3	Transitional	Maintaining norms (transitioning to personal interests)
4	Consolidated	Maintaining norms
5	Transitional	Maintaining norms (transitioning to postconventional)
6	Transitional	Postconventional
7	Consolidated	Postconventional

their reasoning (consolidated profile) or whether they show disparity (transitional profile). Types give the predominant level of reasoning in the respondent's answers as well as taking into account whether the profile is consolidated or transitional (Table 2). Types can also be merged to correspond to the schema measured in the DIT: PI (1 and 2), MN (3, 4 and 5) and PC (6 and 7) (Bebeau and Thoma 2003).

Recruitment

The study was approved by the University's Veterinary School Ethics and Welfare Committee. Participants for this study were recruited in two batches and consisted of three groups: practising veterinarians from around the UK (veterinarians that see first opinion practice), academic veterinarians (veterinarians who teach and/or work at a veterinary school) and members of the public. Data on veterinarians were collected using convenience sampling. A purposive sample of members of the public, which aimed to represent a wide range of ages and experiences, acted as a control group. This was recruited by direct approach from the researchers. The first group of participants were tested as part of a veterinary undergraduate project at the University of Glasgow in the summer of 2011, and all participants were approached in person and given a copy of the DIT-2, a consent form, and additional questions on demographic information. Tests were collected in person and checked in order to reduce purge rates. The second group of participants, who were all veterinarians, were recruited via email following attendance at a BVA Animal Welfare Conference or worked for a practice with links to the university at which the study took place. They were asked to complete an online version of the DIT-2. To avoid biasing responses, participants were not told that the aim of the DIT-2 was to assess moral reasoning, but that the questionnaire was looking at people's responses to various social issues. Anonymised responses were annotated with five-digit ID numbers with different prefixes to identify responses from each of the three groups. Demographic information was also collected from each participant including age, gender, practice type and educational level.

Statistical analysis

All results met parametric assumptions, and general linear models (GLMs), two-sample t tests and Pearson's correlations were carried out in Minitab 16 statistical software (Minitab, USA). GLMs were

TABLE 3: Demographic information of practising veterinarians, academic veterinarians and members of the public who completed the Defining Issues Test

Group	Sample size	Gender	Age range	Years of experience	Degree holder (%)
Practising veterinarians	38	15 female 23 male	18-24 to 50+	1-2 years to 25+	100
Academic veterinarians	27	10 female 17 male	30-39 to 50+	6-10 years to 25+	100
Members of the public	33	20 females 13 males	18-24 to 50+	N/A	64

used to investigate whether there were any differences in P or N2 scores between the three groups (practising veterinarians, academic veterinarians and members of the public) and between veterinarians in different areas of practice (small animal, large animal (farm/equine) or mixed). Two-sample t tests were used to investigate any effects of gender or region of study on P or N2 scores. The relationship between P and N2 scores and years in practice, age and years out of first opinion practice (for academic veterinarians) was explored using Pearson's correlations. SPSS (IBM, USA) was used to perform χ^2 analysis on the proportion of each group assigned to the three moral reasoning schemas (PI, MN and PC).

Results

In total, 98 people completed the DIT and none of these responses were purged. The DIT was completed by 65 veterinarians and 33 members of the public (Table 3). All members of the public and 42 veterinarians (16 practising and 26 academic) completed the DIT on paper, with the remaining respondents completing the electronic version. There was a wide age range in all groups, but academic veterinarians tended to be older with none under 30. Of the members of the public sampled, 64 per cent held a degree (higher than the national average estimated at around 40 per cent) (Ball, 2013). The number of practising veterinarians who mainly worked in small animal medicine was 16, in mixed practice was 15 and in large animal practice was 8 (farm and equine were combined due to small numbers of respondents). The number of veterinarians qualifying in the UK was 47, with 18 having studied elsewhere in the world.

P and N2 scores

The mean P score for practising veterinarians was 38.2 (± 2.2), for academic veterinarians was 43.3 (± 2.5) and for members of the public was 31.8 (± 2.5) (Fig 1). The mean N2 score for each of the three groups was 34.7 (± 2.3) for practising veterinarians, 40.0 (± 2.5) for academic veterinarians and 27.2 (± 2.9) for members of the public (Fig 1). The P scores of practising veterinarians ranged from 12 to 58, for academic veterinarians from 14 to 64 and for members of the public from 6 to 76. Both practising veterinarians and members of the public had negative minimum N2 scores, which were -2.7 and -2.6, respectively. In these cases, this indicates that postconventional items were not prioritised at all over PI items and PI items were not rated as of low importance. The lowest score for academic veterinarians was 15.3. The maximum N2 score for practising veterinarians was 58.1, for academic veterinarians was 61.8 and for members of the public was 71.5.

Academic veterinarians scored significantly higher than members of the public (GLM and Tukey test) on both P ($p=0.007$) and N2 scores ($p=0.004$). Practising veterinarians and members of the public did not differ in P or N2 scores, nor were there any differences between practising and academic veterinarians. No differences between P and N2 scores were found between male and female veterinarians. Area of practice of first opinion veterinarians had no effect on P or N2 scores. Likewise, no difference was seen in moral reasoning scores between veterinarians who qualified in the UK and veterinarians who qualified in the rest of the world. No correlation was seen between years in practice and P or N2 scores, nor between age and P or N2 scores. In academic veterinarians, no correlation was found between years out of first opinion practice and P and N2 scores, though the relationship was negative and approached significance for N2 scores (N2 score: Pearson's correlation = -0.39, $p=0.07$).

Type indicators

The majority of practising and academic veterinarians relied on postconventional moral reasoning (Fig 2). However, 26 per cent of practising and 11 per cent of academic veterinarians relied on moral reasoning at the PI level (stage 2/3). The largest percentage of members of the public relied on the MN schema (40 per cent).

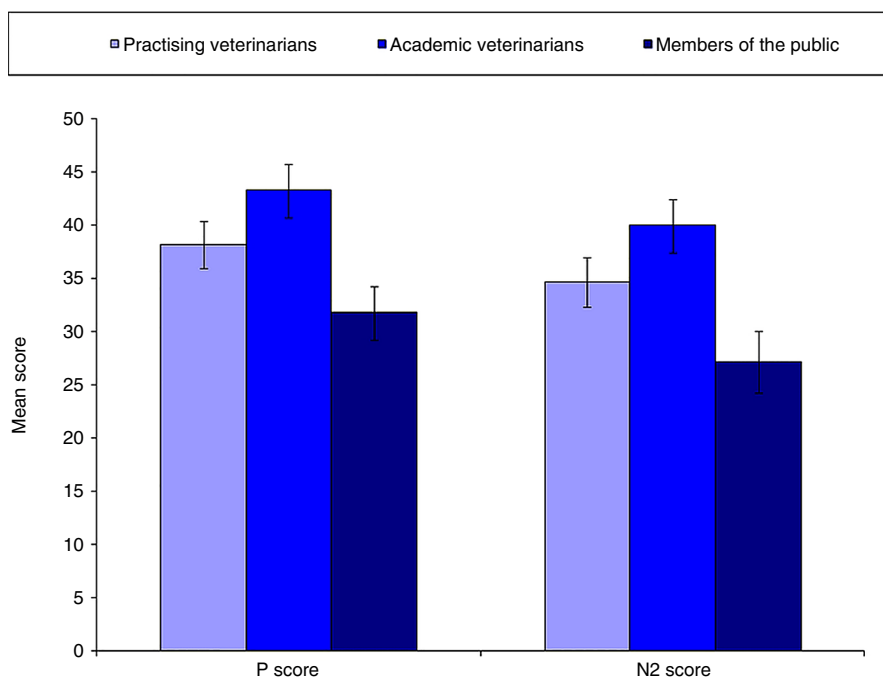


FIG 1: Mean P and N2 scores for practising veterinarians, academic veterinarians and members of the public

A χ^2 test revealed that the PI schema was relied on by fewer academic veterinarians than members of the public and that the PC schema was relied on by a higher proportion of both practising and academic veterinarians than members of the public ($\chi^2=12.24$, $p=0.016$). There was no difference between the proportions of practising and academic veterinarians that predominantly used PC moral reasoning. The proportions of respondents reliant on the MN schema (higher stage conventional level) were similar in all three groups. Results for individual type indicators are given in Table 4.

Discussion

The results provide an initial insight into this professional group's moral reasoning abilities. The finding that practising veterinarians did not have higher P or N2 scores than members of the public indicates that despite having achieved a professional qualification the moral reasoning skills of practising veterinarians may be insufficient to meet the demands of their ethically challenging job. Practising veterinarians could reasonably be expected to have higher moral reasoning skills than their clients so that they are in a position to undertake sound ethical

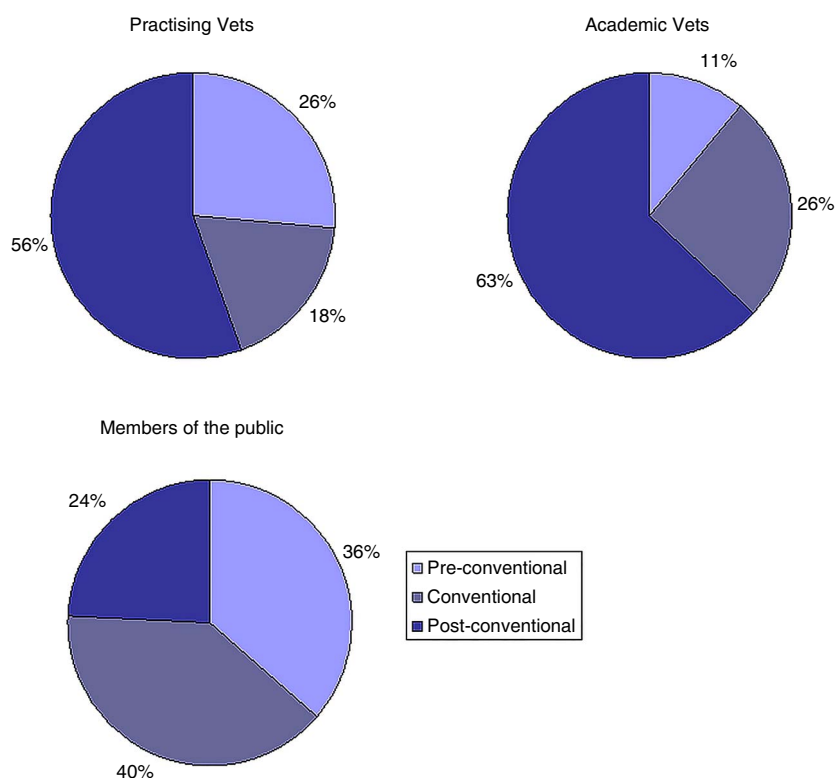


FIG 2: Levels of moral reasoning relied on by practising veterinarians, academic veterinarians and members of the public

TABLE 4: Percentage of practising veterinarians, academic veterinarians and members of the public allocated to each type on the Defining Issues Test

Type	Definition of type	Practising veterinarians	Academic veterinarians	Members of the public
1	Predominantly PI (consolidated)	3	0	9
2	Predominantly PI (transitional to MN)	24	11	27
3	Predominantly MN (transitional to PI)	8	15	24
4	Predominantly MN (consolidated)	5	7	9
5	Predominantly MN (transitional to PC)	5	4	6
6	Predominantly PC (transitional to MN)	26	41	6
7	Predominantly PC (consolidated)	29	22	18

MN, maintaining norms; PC, postconventional; PI, personal interests

reasoning and offer justifications for recommending particular courses of action, are not unduly influenced by their client's interests to the detriment of the animal patient and are able to discuss their reasoning confidently with their clients in order to achieve satisfactory outcomes. The wellbeing of veterinarians themselves could also be compromised if they are not able to cope with ethical decision-making. A UK poll reported that >80 per cent of veterinarians thought that veterinary medicine was a stressful occupation (Robinson and Hooker 2006). An inability to deal with difficult ethical decisions (as suggested by the lower ethical reasoning scores) could lead to stress or burnout (Platt and others 2012), and could contribute to the recognised heightened risk of suicide in the profession (Mellanby 2005, Bartram and Baldwin 2010). Weak moral reasoning skills could also have implications for animal welfare, if the veterinarian is not able to recognise, or advocate for, a course of action that is in the animal's interests.

By contrast, academic veterinarians had greater moral reasoning abilities than members of the public. The higher scores of veterinarians in an academic position are most likely due to their higher level of education, most having attained a doctorate, as there is a strong positive correlation between further education and moral reasoning ability (King and Mayhew 2002). It may also be as a result of a working environment where the free flow of ideas and critical thinking are encouraged through discussion groups such as journal clubs and the diagnosis and treatment of complex cases. Female academic veterinarians were found to score higher than their equivalent male counterparts. Sex differences were not found in the other groups. This result supports previous findings that educational level is much more powerful than gender in explaining differences in DIT scores (Thoma 1986) and the difference in scores between the sexes increases the higher the level of education (Bebeau and Thoma 2003). Previous studies have also shown that veterinary medical education can be detrimental to ethical development with students not making the expected gains by the end of their course (Self and others 1991, 1996). As academic veterinarians' scores were higher than those of the public, this suggests that further education within an academic arena cancels out that detrimental effect.

A possible reason that practising veterinarians had lower scores than expected, and that ethical dilemmas may contribute to stress experienced by veterinarians, is that many veterinarians have not been given any training on how to make difficult ethical decisions (Batchelor and McKeegan 2012). Teaching of ethics and ethical reasoning has only recently been introduced to veterinary curricula (and in some countries it has yet to be included). Many practising veterinarians graduated before this addition and even for those who were given some

instruction, research in this area is in its infancy so teaching methods are not well established. It might be expected that increased experience would reduce the stress associated with ethical dilemmas but that is not the case (Batchelor and McKeegan 2012). Likewise, increased years of experience did not improve moral reasoning scores. This indicates that moral reasoning is not something that is automatically learned through repeatedly dealing with difficult ethical situations. Positive steps have been taken with the recent addition of ethical theory to the Royal College of Veterinary Surgeons Day 1 competencies. However, research and teaching methods are more widely developed in other professions such as nursing and medicine, and veterinary medicine could benefit from utilising the valuable work already done in these subjects and adapting it for veterinary courses. The most successful approaches have been student-centred and focus on developing reasoning rather than transferring facts and values and most commonly use group discussions of ethical dilemmas (Self and others 1998, Latif 2000, Nasrabadi and others 2009).

Results for the moral schemas found that the majority of veterinarians predominantly used the PC schema, while members of the public mainly relied on the MN schema. Both these results are congruent with expected results, with competent adults in general society expected to score at the conventional level (Hartwell 1995) and adults who have undergone a professional degree progressing to the postconventional level (Rest 1993). Although the majority of veterinarians relied on postconventional moral reasoning, what is concerning is that veterinarians either rely on postconventional moral reasoning or revert to simplistic levels of reasoning (types 1, 2 and 3), with very small proportions reliant on types 4 and 5. Preconventional moral reasoning is normally rejected at around age 10 (Kohlberg 1968), and to function in a diverse society, type 3 reasoning is also considered too simplistic (Gibbs and others 1992, p.5). So, though the majority of veterinary graduates appear to benefit from their veterinary education, something within that education or in the nature of veterinary practice causes some practitioners to revert to this simplistic form of moral reasoning. There has been a suggestion that the repetition of stressful events such as euthanasing animals could lead to 'learned helplessness' on the part of the veterinarians (Fogle and Abrahamson 1990). If this is the case, then it could explain why some veterinarians revert to using moral reasoning based on the PI schema as they may feel that challenging the actions of others is futile. Similarly, bowing to authority or following rules could lessen the responsibility for decision-making felt by veterinarians, making it easier to cope (Atwood-Harvey 2005). Moreover, there may be aspects of the culture of veterinary medical education that encourage acquiescence, as has been recognised in medical training (Hafferty and Franks 1994, Hren and others 2011) and has been highlighted by Arluke (2004) in relation to the use of dogs in teaching. Importantly, these results highlight a lack of consistency in the moral reasoning abilities of practising veterinarians, with some veterinarians showing high skill levels and others not. Research on veterinary practitioners has found that there is inconsistency in how veterinarians make decisions for their patients including giving preferential care to clients they assess positively (Morgan, unpublished doctoral dissertation, 2009). The link between clinical performance and ethical reasoning found in other professions (Sheehan and others 1980) (S. W. Sisola, Principled moral reasoning as a predictor of clinical performance in physical therapy, unpublished doctoral dissertation, University of Minnesota, Minneapolis, 1995) indicates that this lack of consistency will have a direct impact on the animals in their care, with some likely to receive better care than others. To overcome this challenge, the veterinary profession would benefit from introducing a minimum acceptable standard of ethical reasoning that represents a fitness to practice. This could be recorded as a 'Day 1 skill' (RCVS 2011). However, finding veterinary-specific modes of assessment of these skills is likely to be challenging.

The findings of the present study are limited by the fact that all but one of the academic veterinarians sampled worked at one institution. Although these academics qualified at different institutions, their reasoning in ethical dilemmas may be influenced by the culture of the institution in which they work. Further study of veterinarians working at other academic institutions would be required in order to strengthen these results. It would also be interesting to gather data using the DIT-2 for other practising professionals, especially in the UK, to provide a comprehensive account of their moral reasoning abilities in relation to veterinarians, and to in turn address the question of whether veterinary education is alone in failing to improve ethical development sufficiently.

One limitation of the methodology used is that the DIT uses human social issues to measure moral reasoning ability that may not provide a true reflection of a veterinarian's ability to reason morally in veterinary dilemmas. Cognitive moral development theory is based on shared values centring on social justice; the ideals of which are not similarly applied to animals. These fundamental values, such as prolongation of life, are not always the motivating force behind veterinary care, so different ethical obligations may take priority and higher moral reasoning may be based on different considerations to those regarded as most important in human social situations (e.g. quality over quantity of life). Developing a moral reasoning tool that includes scenarios that raise issues around the treatment of animals would help further research in this area.

These data provide an insight into the moral reasoning levels of a small sample of UK veterinarians and members of the British public. The finding that practising veterinarians did not achieve higher moral reasoning scores than members of the public and over a quarter of them relied on simplistic moral reasoning is concerning. There is noticeable inconsistency in the ability of veterinarians to solve ethical problems, and therefore, the indication is that veterinary education does not enhance moral development in the way expected of a professional degree. As such, there are implications for animal welfare, client services and veterinary wellbeing. These results highlight the need for practising veterinarians to be offered Continued Professional Development training in ethical decision-making skills.

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