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Citizens, Consumers and Animals: What Role do Experts Assign to Public Values in Establishing Animal Welfare Standards?

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Abstract

The public can influence animal welfare law and regulation. However what constitutes ‘the public’ is not a straightforward matter. A variety of different publics have an interest in animal use and this has implications for the governance of animal welfare. This article presents an ethnographic content analysis of how the concept of a public is mobilized in animal welfare journals from 2003 to 2012. The study was undertaken to explore how experts in the discipline define and regard the role of the public in determining animal welfare standards. Analysis indicates that experts in animal welfare constitute different types of citizen and consumer publics around specific types of animal use, framed by different theories of value. These results suggest a need for greater clarity about the roles and responsibilities of experts and publics in animal welfare reform processes. Clearly citizens and consumers can both contribute to promoting higher welfare standards, but an over-reliance on market mechanisms and consumer behaviour to assign value is beset by moral hazards, foremost being the risk of disarticulating the concept of animal welfare from the public good.

INTRODUCTION

Unprecedented public interest in animal welfare over the last decade has prompted governments in many Organisation for Economic Co-operation and Development [OECD] countries to review their animal welfare standards and guidelines (Webster 2008, Broom 2011). Because most members of the OECD are also liberal democratic states, the public is thought to have a legitimate role in determining the outcome of these processes.

Not only is there public interest in animal welfare, but it is also often regarded as a public good (though this description is not uncontroversial) (Bennett 1995, Harvey and Hubbard 2013). In economics, public goods are characterized by non-excludability and non-rivalry in their consumption, i.e. such goods cannot be provided in a way that excludes some individuals and not others from sharing their benefits, and one individual’s consumption does not foreclose the opportunity for others to consume. Better environmental and public

health, better landscape quality and better tasting food can be considered to be further public goods associated with higher standards of animal welfare (Buller and Morris 2003).

It is commonly held that the provision of public goods is central to securing human wellbeing, which can be construed as a function of the shared benefits and background conditions required for a good life and flourishing human communities. In matters of public and environmental health, the maintenance of which are in the public interest, it is often the case that the state needs to intervene through regulation to ensure these public goods are protected (Dawson and Verweij 2009).

In the foregoing, as elsewhere, 'the' public interest is often spoken of as if the central question of who or what constitutes the public was straightforward (Warner 2002). In the most common sense the term 'public' is used to refer to 'people in general' yet there are potentially as many publics as there are groups of people who share a common purpose or interest. Publics can be understood to be situational entities that form when people organise themselves around a matter of shared concern (Marres 2005, Dewey and Rogers 2012) so that, dependent on the context and setting, a public can be, at the same time: an audience [who make normative evaluations], a constituency [who have direct political power], a group of consumers [who make choices in a marketplace], and, more broadly, stakeholders [who have a stake in the public sphere because they have rightful access to shared resources and are likely to be effected by political choices] (Mahony, Newman et al. 2010). There are, therefore, multiple publics active at any one time in political life, and one person can belong to several publics simultaneously.

Each public is by nature self-organized, yet an external agent typically defines their membership, and, in a sense, calls each of them into existence (Michael 2009). Therefore publics do not exist apart from, but are co-constituted by the discourse that seeks to address them, and when a public is thought of or represented as a uniform and singular entity, claims can be made on its behalf (Warner 2002). What this means is that publics are named and spoken of by others – they are assembled in debates, documents and everyday conversation as a means of representing groups and interests, and this process of defining, framing and naming is inherently political (Felt and Fochler 2010, Mahony, Newman et al. 2010). The idea of *the* 'public' is integral to liberal democratic processes and provides a site of possibility for transformation and change. Rather than being passive entities, the constitution and representation of publics are central to issues of identity, access and power (Habermas 1991, Dewey and Rogers 2012). Therefore how *the* 'public' is constituted around issues such as animal welfare has implications for what is conceived within law, and by society more generally, as legitimate forms of political action.

The Publics of Animal Welfare

The discipline of animal welfare is increasingly shifting its focus from the science of animal production to the politics of animal consumption (Lusk 2011, Buller and Roe 2012). Accordingly, it is often noted in the animal welfare literature that people act as citizens and consumers – and that these practices and their supporting sets of values sometimes align and sometimes contradict each other (Vanhonacker, Verbeke et al. 2008, Christensen, Lawrence et al. 2012). In general, citizens can agitate for direct action to change how animals are used through political processes, whereas consumers influence standards through their activities in the marketplace. Citizens share an interest in the construction and maintenance of public goods, whereas consumers seek to satisfy their individual value

preferences. At the same time, those who use animals tend to dismiss lay concerns as being uninformed while seeking to position themselves as acting rationally on the basis of factual knowledge. In contrast ordinary members of the public tend to construe the interest of producers in animal welfare as being economically oriented, and their own viewpoint as motivated by ethical concerns (Kendall, Lobao et al. 2006, Vanhonacker, Verbeke et al. 2008).

The main purpose of this study is to explore how experts in animal welfare contribute to the construction of the different publics that surround animal welfare issues, and how they construe those without expertise as having a role in determining animal welfare standards.. As experts in animal welfare shift their focus from the science to the moral and political economy of animal production, it is increasingly unclear whether they see their primary purpose as being to support consumer decision-making and leave market mechanisms to deal with normative issues, or to produce evidence that facilitates the development and implementation of citizen-sanctioned regulation of animal production (Buller and Roe 2012, Pirsher 2013). In this regard the peer-reviewed literature reflects the concerns and value-orientations of the discipline (Harnad 1982). Animal welfare researchers and experts submit their work for evaluation and dissemination through publications that have a mandate to determine what constitutes acceptable knowledge. Following Foucault (1972) and Gramsci (1971), the study of texts such as peer reviewed articles can provide insights into how styles of thought and assumed categories enable and foreclose specific identities and practices (Hindess 1996, Smith 1999). By influencing the knowledge and views of those responsible for 'animal welfare' as practitioners, and in the role of an expert media source, publications in leading journals on the subject of 'animal welfare' may also play a vitally important role in shaping legislation and, potentially, wider societal support for specific animal welfare standards and measures (Ransom 2007).

Interdependences and disparities between the roles assigned to citizens and consumers create tensions between the evidentiary and political functions of animal welfare science. These differences, in turn, can make the relationships between the disciplines and the publics that form around animal welfare issues [scientists, producers, consumers, citizens, activists, etc.] somewhat ambiguous (Vanhonacker, Verbeke et al. 2012). Recognition that a number of different publics are central to the setting of animal welfare standards, and that these roles have different and sometimes contradictory political and ethical valences, requires experts in animal welfare science to begin to think more deeply about the future of the discipline. It is possible that unless the academic discipline of animal welfare continues to work with citizen-led processes of animal welfare reform, it will lose reflexivity about its founding values and assumptions, and, increasingly lack insight into the political and ethical dimension of citizen concerns (Miele, Veissier et al. 2011).

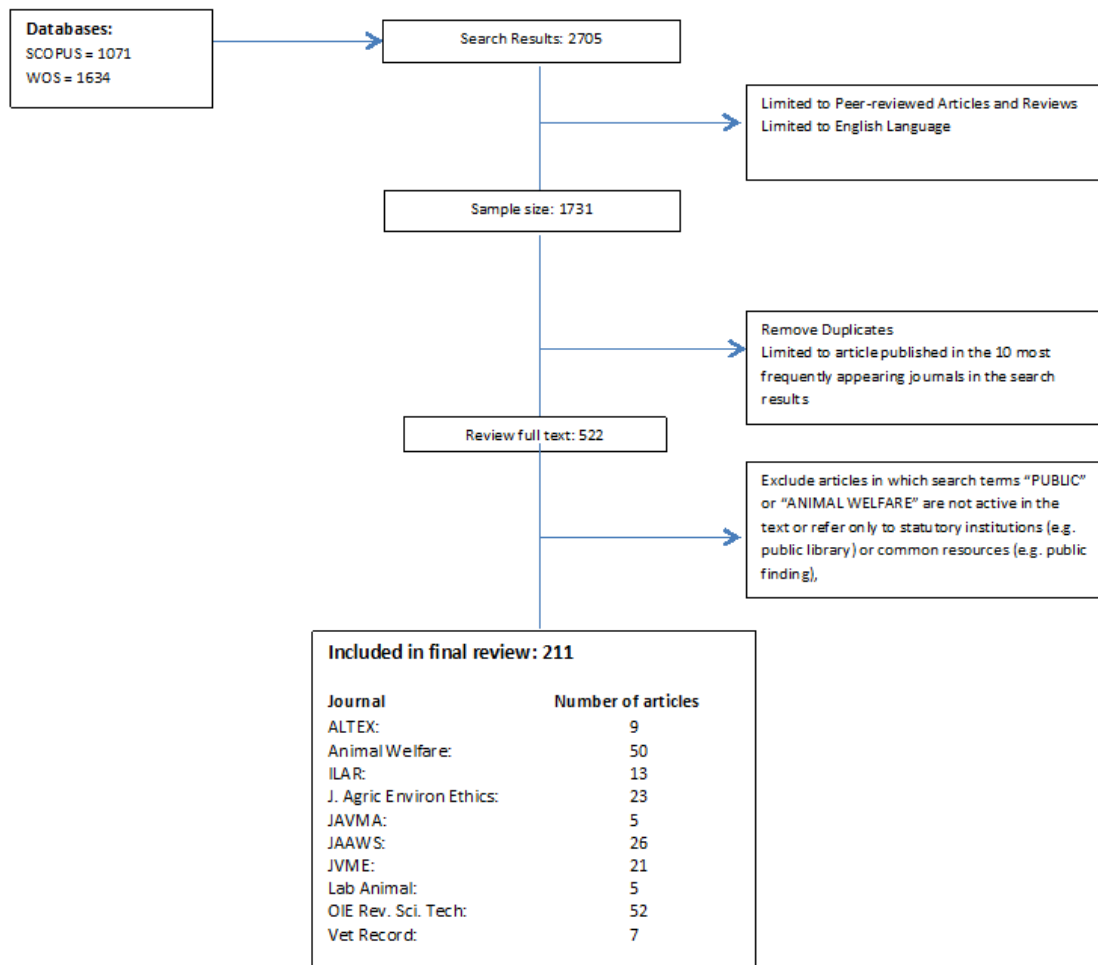
METHODS

Data Collection

To characterize and track how the concept of a public is mobilized by animal welfare experts, and how they construe the role of ordinary people in determining acceptable standards of animal use, the bibliographic databases *Scopus*[®] and *Web of Science*[®] were searched using textwords: "Public" AND "Animal welfare" for the period 2003-2012 yielding a pool of 2705 items [Figure 1]. To make the number of papers manageable the survey sample was then limited to peer-reviewed articles and reviews published in the 10 journals which appeared most frequently in the search results [*Altex*; *Animal Welfare*; *ILAR Journal*;

Journal of Agricultural and Environmental Ethics; *Journal of Applied Animal Welfare Science* [JAAWS]; *Journal of the American Veterinary Medical Association*; *Journal of Veterinary Medical Education*; *Lab Animal*; *Revue Scientifique et Technique*; and *The Veterinary Record*] such that 532 articles remained in the sample. Notably, this corpus included leading animal welfare and veterinary journals, and journals devoted to issues surrounding the use of animals in biomedical research. The sample was then read and reviewed. A further 321 items were discarded because the search terms were not active in the text (e.g. they appeared in headers or footers), or the search terms only referred to statutory institutions (e.g. public library) or common resources (e.g. public funding), leaving 211 articles for analysis.

FIGURE 1



Data Analysis

The articles in the sample were reread and manually catalogued according to their source journal and year of publication. They were then read several times, and compared by the lead author - both chronologically and across the corpus - in order to distil the meanings and messages promulgated by the articles about the constitution and role of the public in determining animal welfare standards. This was achieved through discussions between the authors and iterative processes of textual immersion and conceptual crystallisation (Borkan 1999). Next, the authors and a research assistant manually cross-coded a pilot sample (n=30) of the corpus for specific types of content to confirm and to extend the preliminary thematic analysis, and to track prominent concepts and differences (Bryman 2001).

The lead author then performed open coding of a further sample of 20 papers to ensure saturation of the coding scheme and its reliability. The remaining articles were then manually coded for their basic theoretical, empirical and prescriptive content, and how the concepts of a 'public' were constructed, construed and mobilized. The codes developed to describe the content and key concepts found in the corpus of peer-reviewed literature are as follows.

Coding Content – consisted of noting the general nature of each article's contribution to the peer-reviewed literature and the category of animal or type of animal use the article referenced. These codes were not exclusionary – more than one type of content or category of animal use could be applied to a single article. The basic types of content found in the sample were:

- *Ethical theory* – part of the article involved the explication or examination of a normative question
- *Economic theory* – part of the article involved the explication or examination of economic dimensions of animal welfare
- *Reports* – described a welfare case or approach to the welfare of specific animals such that the article's concerns were scientific and evidentiary
- *Policy* – the article offered some prescription as to what should be done on the basis of a theory or a report

Articles were also coded according to subject using a modified version of the taxonomy developed by the Australian Government as part of the Australian Animal Welfare Strategy (AAWS 2008). The different categories of animal(s)/types of animal use that were the subject of articles in the corpus were:

- *not specified – all animals*
- *animals used in research and for teaching purposes*
- *companion animals* – including horses and animal shelter populations
- *livestock / production animals*
- *animals used for work, sport, recreation or display*
- *animals in the wild*

The types of content described above were not exclusionary; many articles contained at least two of the four basic content elements – for example, using economic theory and scientific data to frame the case for and against changing standards for egg production. Notably the vast majority of articles only concerned themselves with one category of animal use – the seven articles that incorporated more than one category tended to give primacy to the animal's species, rather than the context of utilization.

Coding Key Concepts – our thematic analysis identified several slightly different constructions and meanings of the term 'public' that included interrelated concepts such as 'consumers', 'public as beneficiaries', 'public as audience', and 'public as political agents'. To simplify the analysis and allow meaningful comparison between categories of animal use, articles were coded according to whether the concept of a 'public' was used to describe:

- *Citizens* – the public as a group of people who can give and can remove consent for animal use and hold animal users accountable. Implied within this description is the notion that the public have an active role in determining animal welfare standards and can make a judgement and approve or disapprove of how animals are used

reflecting a normative position (e.g. good or bad), independent of their behaviour as consumers.

- *Consumers* – the public are a market place that can exercise some choice as to what they buy but not question the need to choose. That is, they can participate, exit the market or complain, but are not able to explicitly give or remove their consent for current practices and standards of animal use – whether it is in food production, entertainment, experimentation or other forms of animal labour.

It is important to emphasize that publics can be constituted in discourse without reference to the word itself. However because we were particularly interested in how publics are named and their role defined, we focused on instances where the terms ‘public’, ‘citizens’ or ‘consumers’ were used to represent discrete groups of people with common sets of interests. Table 1 provides examples of how the idea of a public is mobilized or construed in the sample to reflect each of these meanings.

TABLE 1

| Public constructed as: | Quote |
|------------------------|--|
| Citizens | “... regulators and policy analysts, whose job in a true democracy is not so much to influence the hearts and minds of the public, as to interpret the will of the people as it stands.” (Morris 2003, 187) |
| | “... basic research very strongly depends on public consensus, since in the long term no society will finance projects, which are not fully in line with law or morale.” (Gruber and Hartung 2004, 8) |
| | “The fact that fewer people actually seek out such food in the shops does not gainsay the validity of those surveys, in which people are responding as citizens, not just as consumers” (Appleby et al. 2003, 397) |
| | “Today, the public asks scientists to justify the use of research animals and to be accountable for their welfare.” (Guillen 2010, 29) |
| | “No system or procedure is sustainable if a substantial proportion of people find aspects of it now, or of its consequences in the future, morally unacceptable. The people referred to here are the public everywhere.” (Broom 2010, 83) |
| | “Rapid changes in animal welfare over the past decade have been driven largely by the trade in meat and live animals, as well as by increasing pressure from trading partners and the Australian public to improve conditions in this sector.” (Fenwick et al. 2009, 712) |
| | “the concept of the “five freedoms,” and the influence of behavioral science have all had a significant impact, particularly in Europe and North America, on the attitudes toward animal welfare of scientists, the public at large, and, through them, politicians.” (Bayvel and Cross 2010, 3) |
| | “A number of recent studies have shown that European citizens are becoming increasingly concerned about the way in which animals are treated in the production of animal-based food products” (Blokhus et al. 2003, 447) |
| | “When people are asked to state their opinion as citizens they tend to indicate that decisions concerning animal welfare require public intervention and cannot be trusted to the market place” (Christensen et al. 2012, 2) |
| Consumers | “Consumer demand has placed pressure on the dairy, meat and wool industries to provide ‘welfare friendly’ products that also meet high standards of food quality and safety.” (Stewart et al. 2005, 319) |
| | “given the often-stated need to ensure the public is more educated about animal |

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|--|--|
| | agriculture and consumer demand for assurance of proper animal treatment, any practice that appears to be deceptive or misleading becomes problematic for the animal industries.” (Croney 2010, 104) |
| | “Of course, the real drivers of change are not the supermarkets but the public. Big business recognises that success depends on its ability to recognise and be quick to respond to changes in public demand.” (Webster 2012, 1170) |
| | “... consumers were concerned about animal welfare not only because of the impact on the animals but also because of a perceived impact on food safety, quality and healthiness.” (Hall and Sandilands 2007, 499) |
| | “The market regime is coordinated by contracts between consumers and producers, and is focused on mediating scarce goods.” (Driessen 2012, 171) |
| | “When consumers are willing to pay for improved animal welfare, welfare is directly linked to market forces.” (Nielsen et al. 2011, 315) |
| | “What could be the reactions of consumers if they believe that something is wrong with dairy production? Some could stop eating dairy products. Some could eat some of the products but not others. Some could write to retail organisations to tell them what they will not buy.” (Oltenacu and Broom 2010, 46) |
| | “Animal welfare is being increasingly considered by consumers when making a decision to purchase any specific product. This increase in awareness by consumers requires that policy makers and legislators respond accordingly.” (Bayvel and Cross 2010, 7) |
| | “However, these requirements are likely to generate strong public confidence where consumers equate animal welfare with freedom and natural environments.” (Fraser 2006, 101) |

Descriptions of citizen and consumer publics found in the sample were not exclusionary; many articles refer to both concepts, and when this occurred both uses were recorded in the coding. The results from coding processes were then tabulated in matrix form and displayed visually as descriptive statistics in charts to aid cross-comparison and analysis (Miles and Huberman 1994). Regular discussions between the authors served to generate additional inquiries and to validate insights as they emerged (Stewart 1998). This approach is a form of Ethnographic Content Analysis (ECA), a qualitative research method for interpreting documents in context (Krippendorff 2004). Drawing on both numerical and narrative data, ECA involves constant comparison and enables researchers to generate insights about how documents promote particular ways of understanding, interpreting and responding to an issue or event (Altheide 1987).

RESULTS

Conceptualizations of a ‘public’ appear frequently in articles in leading journals relevant to experts in animal welfare – 21 articles a year on average. The content of these articles is typically both descriptive and prescriptive – almost three quarters of the sample included some form of empirical report, a policy recommendation or both. While no specific significance can be attached to yearly fluctuations in most of the coded categories, the totals do potentially provide some insight. Almost half of the animal welfare literature that in some way mobilizes the idea of a public is concerned with agricultural animals (Table 2), by far the largest population under direct human care. The next most frequent category – animals used in teaching and research – are the focus of just 15% of the sample. Whereas

wild animals, companion animals and exhibition / working animals – the types of animals that ordinary people are most likely to encounter – each appear in less than 10% of the corpus.

TABLE 2

| | All Animals | Animals in Teaching Research | Companion Animals | Agricultural Animals | Exhibition & Working Animals | Wild Animals | Totals |
|---|-------------|------------------------------|-------------------|----------------------|------------------------------|--------------|--------|
| Number of Publications | 31 | 33 | 18 | 108 | 16 | 12 | |
| Theory Ethics | 6 (0.19) | 5 (0.15) | 1 (0.11) | 24 (0.23) | 0 | 2 (0.16) | 38 |
| Theory Economics | 7 (0.23) | 1 (0.03) | 1 (0.03) | 28 (0.27) | 0 | 0 | 37 |
| Report | 20 (0.65) | 25 (0.76) | 16 (0.89) | 76 (0.73) | 15 (1.00) | 9 (0.75) | 161 |
| Policy | 25 (0.81) | 23 (0.70) | 7 (0.38) | 70 (0.67) | 12 (0.80) | 9 (0.75) | 146 |
| Public only as Citizens | 6 (0.19) | 21 (0.64) | 9 (0.50) | 14 (0.13) | 5 (0.31) | 6 (0.50) | 56 |
| Public only as Consumers | 9 (0.29) | 8 (0.24) | 9 (0.50) | 32 (0.29) | 9 (0.60) | 4 (0.33) | 68 |
| Public as Citizen & Consumer | 16 (0.52) | 4 (0.12) | 0 | 62 (0.58) | 2 (0.14) | 2 (0.16) | 87 |

Representations of the public in articles in the sample are fairly evenly split between citizens, consumers and a heterogeneous mixture of both. In absolute terms, members of the public are more likely to be considered consumers than citizens in the animal welfare literature. However there is no discernable trend over the decade towards increasing representations of citizen-oriented or consumer-driven roles for ordinary people (those without expertise) in the determination and evaluation of animal welfare standards. Notably the animal welfare literature in the sample is markedly less policy-oriented when the focus is on companion animals. Whereas articles in the corpus focusing on exhibition and working animals and wild animals typically offer some prescription based on an empirical study (Table 2). Empirical data and other forms of descriptive content appear in relatively equal proportions across rest of the corpus – and almost all of the papers that utilize a theory of value are about agricultural animals. In relative terms theories of value are rarely applied to other categories of animal use - including the next most represented form of utilization, animals used for the purposes of teaching and research (Table 3).

Our results also show some differentiation in the types of publics that are constructed around different types of animal use (Table 3). The idea that the public are both consumers and active citizens appears in the majority of articles that specifically focus on production

animals and on animal welfare as a domain of knowledge and practice. However there are marked differences across the other types and contexts of animal use where representations of the role of ordinary people in determining animal welfare standards are more polarised and less heterogeneous. For example, representations of the public as citizens with independent political agency are most clearly articulated in articles about animals used in teaching and research and wild animals. In articles that focus on companion animals the public are represented as citizens or consumers in equal proportions, but these roles are not considered to be overlapping.

Our sample includes the journal of the United Nations agency responsible for animal health worldwide [*OIE Rev. Sci. Tech.*]; a mixture of generalist animal welfare journals [*Animal Welfare*, *JAAWS* and *J. Ag. Environ Ethics*]; journals for veterinary professional audiences [*JAVMA*, *JVME*, *Vet Rec.*]; and journals for audiences that have direct responsibility for the welfare of animals used in research and educational institutions [*Altex*, *ILAR*, *Lab Animal*]. As might be expected, our coding indicates that there are some marked differences in the content and conceptual scope of each of these types of journals (Table 3).

Almost half of the material in the sample appears in journals devoted to animal welfare or the ethics of animal use [*Animal Welfare*, *JAAWS* and *J. Ag. Environ Ethics*]. These articles tend to construct the public as both citizens and consumers, and are most frequently concerned with production animals. Their content is typically empirical, and, when compared with other types of journals in the sample, this material is often framed by a normative theory of value.

TABLE 3

| Type of Journal | Biomedical | General | Veterinary | OIE |
|--|------------|-----------|------------|-----------|
| Number of publications | 27 | 99 | 33 | 52 |
| Theory Ethics | 5 (0.19) | 19 (0.19) | 7 (0.21) | 9 (0.17) |
| Theory Economics | 0 | 23 (0.23) | 4 (0.12) | 11 (0.21) |
| Report | 20 (0.74) | 85 (0.85) | 28 (0.85) | 25 (0.48) |
| Policy | 20 (0.74) | 59 (0.59) | 21 (0.64) | 47 (0.90) |
| All Animals | 0 | 6 (0.06) | 11 (0.33) | 17 (0.33) |
| Animals used in Teaching & Research | 27 (1.00) | 6 (0.06) | 0 | 1 (0.02) |
| Companion Animals | 1 (0.04) | 14 (0.14) | 2 (0.06) | 1 (0.02) |
| Agricultural Animals | 2 (0.08) | 55 (0.55) | 15 (0.45) | 34 (0.65) |
| Exhibition & Working Animals | 0 | 16 (0.16) | 0 | 0 |
| Wild Animals | 2 (0.08) | 8 (0.08) | 3 (0.09) | 0 |
| Public only as Citizens | 17 (0.63) | 25 (0.25) | 8 (0.25) | 8 (0.15) |
| Public only as Consumers | 8 (0.30) | 32 (0.33) | 10 (0.30) | 21 (0.40) |
| Public as Citizen and Consumer | 2 (0.07) | 42 (0.42) | 15 (0.45) | 23 (0.45) |

Notably, the respective roles different publics [citizens and consumers] can occupy in determining animal welfare standards are represented similarly in the OIE's journal *Rev. Sci. Tech.*, although when only one type of public is characterised, consumer-driven models for public engagement are more prominent. Like the general animal welfare journals, articles in the *Rev. Sci. Tech.* are also mainly concerned with production animals and frequently refer to theories of value, but tend to be more policy oriented than the other types of journals in the sample.

Veterinary journals in the sample had the broadest coverage of the different types and contexts of animal use. Like the *Rev Sci Tech.*, most of articles that mobilise the idea of a public in the veterinary literature focused primarily on agricultural animals and then on animal welfare as a domain of knowledge and practice. Representations of the public in veterinary journals were also heterogeneous, and still also oriented towards consumers. Possibly reflecting the interests and clinical orientation of the vast majority of the profession, articles that focused on exhibition and working animals, and animals in teaching and research, were absent from veterinary journals in the sample.

Articles in biomedical journals had the narrowest focus – with only a few papers discussing other contexts of animal use. Articles that mobilize the idea of a public in biomedical journals are less likely to include reference to or discussion of a theory of value than veterinary journals or the more general animal welfare literature. Unlike the materials from other types of journal in the sample, the papers from the biomedical literature display a strong tendency to represent the public as politically active citizens – which likely reflects the level of sustained controversy that surrounds this form of animal use and the indirect nature of the relationship between experimental animals and consumers.

DISCUSSION

Our results indicate that the peer-reviewed literature on animal welfare constitutes different publics around different animal uses. Acknowledging the sample is skewed towards agricultural animals (Walker, Diez-Leon et al. 2014), our analysis indicates that scholarship on issues around animal welfare tends to represent ordinary members of the public as consumers of animal products and labour, tempered by a more general recognition that these people are also citizens who have a direct role in the political and regulatory processes through which different types and standards of animal use are sanctioned or prohibited. As well as the heterogeneous mixtures of consumer and citizens' publics described in materials about production animals, representations of the public varied from the politically active citizens' public constituted around the welfare of animals in teaching and research, to the predominately consumer-driven publics described in articles about working and exhibition animals.

The relative stability of the types of public constituted around specific categories of animals and contexts of utilisations suggests that animal welfare experts may have a tendency to presuppose a particular conception of the public as the background against which their research is undertaken. This is not unique to animal welfare science. Studies of public engagement by other scientific disciplines have shown that experts tend to form a conception of the public that they are 'comfortable with' or that suits their purposes (Braun and Schultz 2010, Felt and Fochler 2010). Certainly the publics constituted in our sample around non-agricultural animals appear to be strongly oriented towards discrete groups of consumers or citizens, and rarely linked to normative or economic analyses. In contrast, the

relative prominence of theories of value in articles about agricultural animals – and heterogeneous mixture of consumer and citizen publics represented therein – potentially points to active within discipline discussions about how their value should be determined, and, by implication, which authority gets to assign this value. Because agricultural animals are the most prominent category in the sample, and because they are central to the interest and practices of the discipline, the rest of the discussion focuses on this particular category of animal use.

The last decade has seen the development of a body of research that seeks to understand differences between citizen and consumer attitudes, and activate people's involvement and interest in welfare issues when they are acting as consumers (Verbeke 2009, Napolitano, Girolami et al. 2010, Vanhonacker and Verbeke 2014). There are different ethical valences in the types of evaluation permitted to citizens and consumers in that the roles of evidence and values in determining animal welfare standards, and the responsibilities of experts and ordinary people, varies between them (Bock and Buller 2013). At one extreme the role of experts in the discipline of AWS is to produce objective evidence that informs the determination of appropriate animal use through political mechanisms and regulatory channels (which are responsive to public opinion and public values). At the other extreme the role of the discipline increasingly involves commodifying the welfare of animals (which implicitly or explicitly encodes a set of values), and then seeking to educate consumers about a predetermined set of choices (Miele and Evans 2010, Miele and Lever 2013). The former places the responsibility for determining and promoting higher welfare standards onto statutory authorities and food-chain actors who respond to citizens' concerns and democratic processes; the latter foreclose citizen choice and place the ethical responsibility for promoting higher welfare standards onto market mechanisms, and, thereby, onto the consumers of products derived from agricultural animals (Buller and Roe 2012).

It has been argued that the imposition of higher minimum standards of animal welfare cannot generate as much social benefit as those provided by allowing consumers differentiated preferences to be met by the market place (Codron, Giraud-Héraud et al. 2005). Markets mechanism could provide some positive benefits to animal welfare in that the supply side of animal production should, in theory at least, respond quickly to changing patterns of economic activity (Lusk 2011, de Jonge and van Trijp 2013). Market mechanisms can potentially collapse the space between individuals and political effects and provide rewards for producers who seek to do more than the minimum (Napolitano, Girolami et al. 2010). However, what happens if citizens are only addressed and treated as consumers – and we rely solely upon the 'responsible' consumers buying 'compromise products' as the organizing figure of animal welfare policies? The importance of citizen scrutiny to the legitimacy of specific forms of animal use is an increasingly prominent feature of legal and ethical critiques of animal use (Hobson-West 2010, Donaldson and Kymlicka 2011) and other animal welfare discourses and practices (McMahon, Hindell et al. 2012, Ormandy 2012). Consumerism changes the relationship between experts in animal welfare science and their publics. Market mechanisms are biased towards those with discretionary resources, and these private choices are untethered from the public interest and not bound by mutual obligation. Moreover, democratic representation and political processes are a robust forum for dealing with normative questions. They offer more opportunities for deliberative consideration of what is the public interest and authorise and hold people and institutions accountable for outcomes in ways that consumer choices do not.

Inconsistencies in peoples' practices, preferences and attitudes when occupying consumer and citizen roles could reflect the pressures of living and making decisions in the real world, but they tend to be seen as an effect of a lack of relevant knowledge (Harvey and Hubbard 2013). The result is persistent pleas from experts in AWS for better and clearer public communication about the science of animal use (Miele, Veissier et al. 2011, Ventura, von Keyserlingk et al. 2013). In practice the roles of citizens and consumers intersect – citizens implicitly sanction or object to animal welfare standards through political processes and consumers drive their improvement, or otherwise, above the legal minimum standard (de Jonge and van Trijp 2013, Harvey and Hubbard 2013). Our results suggest that experts in animal welfare are cognizant of both these roles, yet their orientation is towards consumer- rather than citizen-oriented mechanisms of governance. Both should be embraced, but not in such a way as one collapses into the other. The segmentation of the market for animal products through the commodification of high welfare products only seeks to engage with one type of public – and this will eventually lead to more controversy. Scholarship in political philosophy (Dewey and Rogers 2012) and political science (Kingdon 2011) suggests that both matters of fact and matters of concern tend to become 'public issues' when existing institutions and communities prove to be incapable of accommodating and adapting to changes in public values. The academic discipline of animal welfare must continue to seek to engage with citizen-led processes of animal welfare reform, so as to maintain contact with and seek to address the concerns of a broader range of stakeholder groups and interested publics.

Even as the public needs to be informed to enhance their capacity to act as a polity, scientific facts are only one type of evidence available to them in forming a position (Ohl and van der Staay 2012). Regulators and policymakers have traditionally made these decisions, based on both scientific and economic evidence, and a shared conception of the public good – which in both economic and ethical terms can be broadly construed as those features of human community that provide inalienable benefits for all people. The idea of a public good intends the imposition of limits and restriction on individual liberties – placing what is good for the community above what is desirable for individuals. In these terms, market mechanisms do not just simply make animal welfare a consumer rather than a citizen issue (Pirsher 2013). People value commodities by using them, but value something with intrinsic worth by respecting it (Anderson 1995). Markets only allow people to evaluate the relative and not the intrinsic worth of higher animal welfare standards. As animal welfare shifts from a production related concern to a social and consumer-related concern, there is a need for clearer thinking about the extent to which the intrinsic value of high animal welfare standards can and should be disarticulated from the public good to become a product attribute that can be commoditized and traded. Under consumer-driven welfare reform, the goods of animal welfare become private and maintaining current standards relies upon the aggregation of individual consumer choices. In contrast, ensuring animal welfare reform remains a public good – with all the corporate costs and benefits this entails – not only promotes the interests of all the animals under our care, but, potentially, also those of the broader community (Appleby, Cutler et al. 2003).

Conclusion

The concept of animal welfare, political debates about animal welfare, and the scientific discipline of animal welfare have all emerged together (Hagen, Van den Bos et al. 2011, Bock and Buller 2013). Animal welfare is a public issue in ways that extend beyond market mechanisms. Our examination of constructions of the public in animal welfare discourse

shows there is heterogeneity in the roles experts assign to lay people in determining animal welfare standards and the mechanism through which they conceive of them participating in this process. For agricultural animal in particular, the concept of publics comprised of citizens and consumers incorporate a number of binary distinctions. Citizen behaviour broadly reflects their shared values and beliefs about society's interest and what is good for the community; consumer behaviour reflects possessive individualism, people's regard for their own individual interests and personal preferences. Citizens can exercise their political power to make food-chain actors act ethically on their behalf to promote corporate benefit of all; consumers can chose whether to purchase higher or lower welfare products such that the responsibility for determining and distributing higher standards of welfare for animals rests on the aggregation of individual choices.

Our study shows that the needs of consumer publics are being prioritized in the peer-reviewed animal welfare literature. Relying on market mechanisms to enhance welfare outcomes comes with moral hazards. It is our view that the political agency of citizens in the formulation of animal welfare standards should be protected. Ceding too much responsibility to the market for normative issues in governing animal welfare risks disarticulating its provision from widely held conceptions of the public good. Moreover, taking the interest citizens have in maintaining animal welfare standards for granted or restricting their political influence risks the atomisation of public concern for animal welfare and the loss of public confidence in the discipline. If the promotion of animal welfare is to remain a public good, rather than a tradable attribute, then the intrinsic values that underpin the discipline need to be explicitly articulated and not implicit or buried within scientific and expert discourses or economic mechanisms.

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