

Production of scientific knowledge about animal welfare

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Abstract – The paper seeks to think carefully about the ways in which sociological theory has been dealing with animal welfare, the relationship of consumption between human and nonhuman, as well as morality and civility in the growth of public uneasiness regarding the way of relating and conceiving taking as reference the main theoretician of Norbert Elias' work, the Civilizing Process, which deals with the long-term transformation in social structures and personality structures, culminating in the development of a society of individuals subject to constant control of conduct and of emotions. The feeling of revulsion at the excess of extravagance at meal times and a more thoughtful and educated view, which since then has improved in what we now know by animal welfare. Aiming to draw the profile of scientific production on animal welfare in the last years, to show the relationship of these publications with Norbert Elias' work, it was used the bibliometric research technique, quantitative in the analysis stage and selection of articles related to the theme of the study. And qualitative when compared to the evolution of the concern with the theme.

Keywords: Animal welfare. Civilizing process. Norbert Elias. Sociological theory.

A produção do conhecimento científico sobre bem-estar animal

Resumo – O trabalho busca refletir sobre as formas como a teoria sociológica tem lidado com o bem-estar animal, a relação de consumo entre humanos e não humanos, bem como a moral e civilidade no crescimento da inquietude pública em relação à maneira de se relacionar e conceber animais tomando por referência a teórica principal da obra de Norbert Elias, o Processo Civilizador, que trata da transformação de longo prazo nas estruturas sociais e nas estruturas de personalidade que, culminou no desenvolvimento de uma sociedade de indivíduos submetidos a um controle constante da conduta e das emoções. O sentimento de repugnância perante o excesso de extravagância no momento das refeições e uma visão mais ponderada e educada, que desde então aprimorou-se no que hoje conhecemos por bem-estar animal. Com o objetivo de traçar o perfil da produção científica sobre o bem-estar animal nos últimos anos, para então apresentar a relação destas publicações com o trabalho de Norbert Elias, utilizou-se como técnica de pesquisa a bibliométrica, quantitativa na etapa de análise e seleção dos artigos relacionados a temática do estudo. E qualitativa quando comparação da evolução da preocupação com o tema.

Palavras-chave: Bem-estar animal. Processo civilizador. Norbert Elias. Teoria sociológica.

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Introduction

According to the Federal Council of Veterinary Medicine, there is a growing concern of contemporary society regarding the welfare of animals, being them wild, pets, laboratory or production. The development of the animal welfare science aims to provide animals with a dignified life that respects the satisfaction of their behavioral, mental and physiological needs (CFMV, 2017).

Over the years, people started debating whether animals must or must not be killed and the way it happens. Scholars, including philosophers and adepts on the ethics of killing animals for human consumption, use of derivatives such as human clothing, study with scientific research or as unwanted pets (FRASER, 2008).

From an economic perspective, there may be significant impacts on agricultural production. By adopting these principles, it is possible to contribute to increase the productivity and profitability of the productive chain and to collaborate for the improvement of animal products, as well as to minimize losses due to inappropriate animal management (MAPA, 2016).

In general, animals are used for human consumption. In an industrial view, industries are obliged to adopt measures to avoid animal abuse and to apply animal protection and welfare measures, from shipment at origin until the moment of slaughter (BRASIL, 2017)

Within a social context, the importance of the contributions of Norbert Elias (1897-1990) is made present. Even though in life his recognition was late and subsequent to the elaboration of his works. Toward to The Civilizing Process we perceive a sociological work that transcends the period of its production (SILVA, 2012). Although it does not specifically address this relationship, Norbert Elias's Theory of Civilization Process presents a set of long-term transformations in social structures, permeable by new sociological discussions, does not invite us to repeat their findings, but researching from it, considering his view of society (LANDINI, 2006).

The main collaboration of the study will be the identification of the profile of the scientific production on animal welfare in the last years, showing the relation of these publications with the work of Norbert Elias in what concerns the evolution of the behavior and civilization. Due to the relevance and representativeness of the animal welfare theme, the current paper aims to answer the following question: What are the reasons that are influencing the increasing increase of publications at a global level addressing the theme of animal welfare? To answer this question we opted for the elaboration of a bibliometric study in the Web of Science, Scopus and Scielo databases, in the corresponding period between 2008 and 2016.

Theoretical Reference

Animal welfare: Brief historical evolution.

The main animal welfare reports, led by Ruth Harrison in her book "Animal Machines, The New Factory Farming Industry" published in 1964, criticize the intensive production of animals as sentient beings, that is, they are able to feel pleasure and pain, and places them as victims of human beings mainly after the Second World War. The 60s was marked by the growing public concern about how to relate and conceive "cultivated" animals that "industrial agriculture" implies, beginning the first step regarding precarious conditions in animal production, culminating in the year in the Brambell report (COLE, 2011).

Animal welfare is extremely important for the production of animals but to better understand the issue it is necessary to understand its principles which are based on the evaluation of animal husbandry practices, according to the Brambell committee, led by the veterinarian Rogers Brambell (1965), who started the world discussion on ethics in animal production, and emphasized the Five Liberties, indispensable for animals: free from hunger and

thirst; free from discomfort; free from pain, injury and disease; free from fear and distress and free to express their natural behavior (FAWC, 2009, 2011).

In 2009, came into force in the European Union the rule 1099/2009 which foresees several demands for the slaughter based on the researches results about animal welfare, aiming to avoid the pain and to minimize the distress and suffering of animals during the process of slaughter, taking the best practices in this field into account and the methods authorized under the Regulation (EC TREATY, 2009).

In Brazil, the first official measures related to the issue in question came with the publication of Decree 24.645, which establishes that the person who applies or mistreats the animals in a public or private place, shall incur a fine and/or penalty regardless whether they are owner or not, without prejudice to any civil action that may concern (BRASIL, 1934).

Subsequently, the Ordinance number 185 of 2008 establishes the Permanent Technical Commission on Animal Welfare, revoked by Administrative Rule number 524 of 2011, whose main purpose is to coordinate animal welfare actions in production and interest. (BRASIL, 2011).

Queiroz et al. (2014) report that concern with the welfare of production animals has been really debated in academy. In their study they report that consumers are willing to pay more for top quality products and interested in certified products that will guarantee their final quality.

Due to the current worldwide concern about the animals treatment and therefore of animal foods, it is questioned where the first intriguing phenomena arose from the perception of the human being on this subject, according to Elias (1994), the first signs were reported in the middle age, where they felt and correlated emotions with food and aversion to gluttony. He also reports that at that time there was the feeling of repugnance generated by the flagrant encounter with a dead animal at the table, linking the idea of the sacrifice of a living being, notorious changes of the civilizing process.

The civilizing process in the view of Norbert Elias

According to Elias (1994), in order to understand the evolution of the Civilization Process it is necessary first to understand the concept of "civilization", which according to him, goes back a long time, however, it has gained specific meaning adopted by society from the work of Erasmus of Rotterdam, Of Civilitate Morum Puerilium, which came to light in 1530. In his treatise, "Erasmus gave new clarity and strength to a very old and common word, *civilitas*. Intentionally or not, he obviously expressed in the word something that met a social necessity of the time" (ELIAS, 1994, p. 72).

From then on, the concept of civilization was engraved in the people's conscience with the special meaning it received in the treatise of Erasmus. However, the author points out that Erasmus of Rotterdam was by no means the first to be interested in the analysis of the civilizing process. In addition, it emphasizes that this is a process that lacks an initial framework, and can be traced indefinitely to the past, since, wherever its study begins, movement will be observed, that is, something that constituted a precedent.

According to Brandão (2000), Norbert Elias has defined civilization as a continuous process, not yet finished and without the possibility of defining a single cause, some kind of starting point, zero point, of civilization or any kind of causal relation.

For Elias (1994), the concept of civilization, which society is used to accepting as a finished and done process, without being asked how they came to possess it. For the author civilization implies a process in which the whole society is involved, characterized by the existence of a particular structure of human relations.

According to Elias (2006), the concept of civilization is closely linked to the concept of social process. This refers to wide, continuous, long-lasting transformations of human beings, in one of two opposing directions. Generally one of them has a character of ascension and the

other one of decline, with objective criteria, that is, they are independent of the fact that the respective observer considers them good or bad. Unlike the biological process of evolution, social processes are not linear and they are reversible.

In an attempt to understand the evolution of human behavior, Elias (1994) delimits his studies on the civilizational process between the short journey from the medieval phase to the first modern phase. This does not mean that the author intended to determine the beginning of the civilizing process, because, as the author explains, "the medieval behavioral pattern was not devoid of internal movement and certainly was not the beginning and the first step of the process of civilization".

In the Middle Age the pattern of "good behavior" had a very clear concept, "courtesy," which summed up aristocratic self-consciousness and socially acceptable behavior, and which gave the secular upper class of the Middle Age expression to its self-image which made it exceptional. Thus, the courtly circles that gravitated around the great feudal lords, established the specific code of behavior that first emerged in the great feudal courts and then spread to wider strata (ELIAS, 1994).

Elias (1994) points out that in the course of the sixteenth century, the use of the "courtesy" concept of cavalry-feudalism slowly declines in the class while that of "civilization" becomes more common, and finally assumes the preponderance, at least in France of the seventeenth century. This represented a sign of a major behavioral change. The same social rules which in the Middle Age were imparted impersonally by word of mouth are now referred to the way and the emphasis of one who is not just passing on the tradition, no matter how many medieval writings and, above all, the ancient ones may have absorbed, but who has observed all this personally, records the experience.

At this point, the scenario changes, increasing the coercion exercised by one person over another and the requirement of "good behavior" is put more emphatically. Forced to live in a new way in society, people become more sensitive to the pressures of others. Slowly the code of behavior becomes more rigorous and increases the degree of consideration expected of the others. The sense of what to do and not to do to not offend or shock others becomes more subtle and, in conjunction with the new power relations, the social imperative of not offending the like becomes stricter in comparison to the phase above. In other words, it can be said that with the structural transformation of society, with the new model of human relations, the compulsion to police the behavior itself is increased and with this the behavior model is set in motion (ELIAS, 1994).

According to the author in this period the examination of human behavior and its code of conduct throws the observer from side to side, giving the people of that time a double face. At this stage it is certain that conduct and code of conduct are in motion, but the movement is very slow, and above all, when observing a single stage, it is not possible to gauge when something is progressing or falling into disuse.

In the course of the sixteenth and seventeenth centuries with the slow extinction of the knight-based warrior nobility and the feudal lord and the formation of a new aristocracy of absolute monarchs, the concept of civility slowly rose to the category of acceptable social behavior. Elias (1994) points out that small circles relatively initiated the civilizational movement and gradually transmitted to larger segments. For the author the evolution of this movement would not be possible without its transmission to the broader classes and not only to the circles that created the model.

The author compares the civilizing process to a chemical process in which a liquid is subjected to a crystallization in which a small nucleus start acquiring a crystalline form while the rest only gradually crystallizes around it. For Elias (1994) nothing would be more erroneous than to consider the nucleus of crystallization as the cause of transformation. The fact that a given class at one stage or another of social development forms the center of a process and thus

provides models for other classes and that these models are diffused and accepted by them already presupposes a social situation and structure society, as a whole, due to a one circle and the function of creating models and the other of disseminating and assimilating them.

Thus, along with a very specific social situation, feelings and emotions begin to be transformed into the upper class, and the structure of society as a whole allows the emotions then modified to slowly diffuse through society. This way, as Elias explains, in the justification for the recommendation of proper conduct "social motivations and behavior adaptation to the models prevailing in influential circles were by far the most important reasons for distinguishing good behavior from bad" (ELIAS, 1994, p. 130).

Thus it is not by chance that in the author's view the transmission of models from one social unit to another from the center of a society to its frontier posts must be considered in all civilizing processes as one of the most important of individual movements.

From the above, the civilizing process from Elias (1994) is not reasonable, nor rational, nor a product of the human race or the result of long-term planning. For Elias, this process is based on the consideration of the "social", before the motivation for scientific knowledge and reason. It can be seen with a process of increasing compulsion for "self-control," in which people seek to suppress in themselves all the characteristics they deem "animals" from the self-control and concealment of the most varied human drives, emotions, biological impulses, bodily functions, sexual impulses and aggression. So that, the disgusting one, be removed to the bottom of social life.

Although in Elias' view (1994) the civilizing process is not reasonable or rational, neither irrational, Heinich (2001) emphasizes that points out that according to that author, it is possible to interfere to guide him in a way that is more adapted to the needs of humanity, so that man finds a balance or even a perfect agreement between his social tasks, the set of demands of his social existence on the one hand, and his personal tendencies and needs on the other hand.

The feeling of disgust at the excess of extravagance at meal times, being it in family or in public, brings, according to Elias (1994), a more thoughtful and educated view by the consumer, who has since then improved on what we now know as animal welfare.

Materials and Methods

This is a descriptive and quantitative research, with the purpose of quantifying and describing scientific publications about Animal Welfare, analyzing scientific production, periodicals and authors. It is classified as a bibliographic research, because it deals with a systematized study, developed based on material published in national and international journals. The primary data were collected in the database: Web of Science, Scopus and Scielo covering the scientific production published between 2008 and 2016. The research was carried out between September 18 and October 22, 2017.

To achieve the proposed goal, bibliometric research was the technique used. It was quantitative in the analysis stage and while selecting the articles related to the thematic of the study. And it was qualitative when it compares the evolution of the worry about the subject with the theory of the Civilizing Process of Norbert Elias.

Bibliometry has a relevant role in the analysis of the scientific production of a country, since its indicators show the degree of development of an area of knowledge of a scientific field or knowledge (ARAÚJO and ALVARENGA, 2011). The authors revealed in their research a resumption of interest in the bibliometric approach in several areas of knowledge in Brazil, providing analyzes on the interdisciplinarity between science of information and other fields of knowledge.

Bibliometry applies quantitative methods for statistical analysis of publications and scientific activities. Currently, researchers, information experts, librarians and laboratories,

research directors, universities and governments use bibliometric techniques and methods to evaluate scientific activities (SILVA et al., 2011).

According to Araújo (2006), bibliometry is the "quantitative and statistical technique of measuring the production indexes and dissemination of scientific knowledge". Tague-Sutckiffe (1992) say that, bibliometry represents a study of the quantitative aspects of production, dissemination and use of registered information, through mathematical models and useful metrics for decision making.

According to Senra and Lourenço (2016) bibliometriy presents instruments that are bibliometric indicators, which provide information about the results of scientific activity in all manifestations. The most relevant indicators in a bibliometric research according to Macias-Chapula (1998), both national and international are: number of papers, the dynamics of research in a given country, number of citations, co-authoring, number of patents, number of patent citations and maps of scientific fields and countries, further states that counting works is not difficult, but giving meaning to them is somewhat complex. And that the numbers found by the indicators should be interpreted, taking into account the trends of the data and the method adopted.

What the data collection is concerned about, the seek for primary data was restricted to the use of the keyword "Animal Welfare", using the international database "Web of Science" and "Scopus", as a filter for the period from 2008 to 2016, restricting research to articles only, considering the ten categories of science and the ten authors that published the most in each database. Due to the large number of international publications, it was not carried out any investigation if there was duplication of the articles among the bases analyzed.

For data analysis of the articles published in Brazil, the "SciELO" database was considered, since it is a base that represents Brazilian science in a great way, so there was no need to compare it with other bases on animal welfare. For the search filter, it was used the keyword "animal welfare" from 2008 to 2016, restricting the research to articles only, also considering the ten main authors and the ten areas with the highest number of publications.

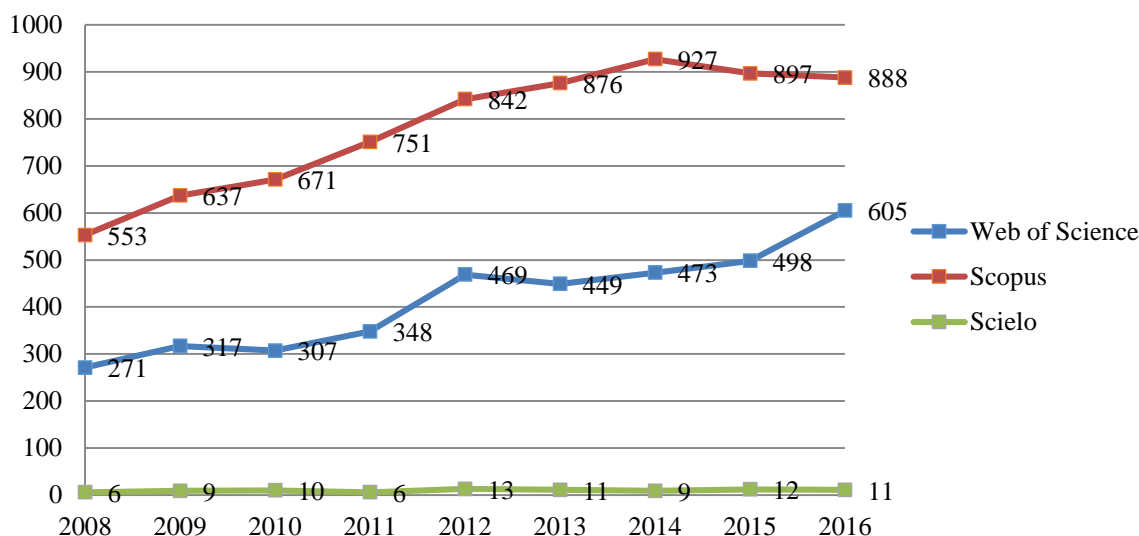
The article analyzed the following characteristics: publication period, number of publications, countries with the highest number of publications, comparison between study areas, periodicals with the highest frequency of publication, authors with the highest number of publications, keys, cloud of keywords.

Results e Discussions

Scientific production profile about the animal welfare

Considering the *Web of Science* database, the first publication was in 1970 using the keyword "Animal Welfare", however, the performance of the publications happened from 1993. And in the last years the publications have occurred in an intense and constant form, in the period from 2008 to 2017 3,737 papers were published internationally in the *Web of Science* database and 7,042 papers in the *Scopus* database. Figure 1 shows the evolution of these articles over the last 9 years. There is a constant evolution of the published articles on animal welfare, following a growth without major changes until 2015, unlike 2015/16, which shows an increase of more than 21% in publications, from 498 in 2015 to 605 in 2016 in the *Web of Science* base, and in the *Scopus* database this increase in publications were observed in 2014. Figure 1 also reveals the low index of publications on animal welfare in Brazil, although they are constant, it indicates that Brazilian science is very distant from other countries in relation to this study.

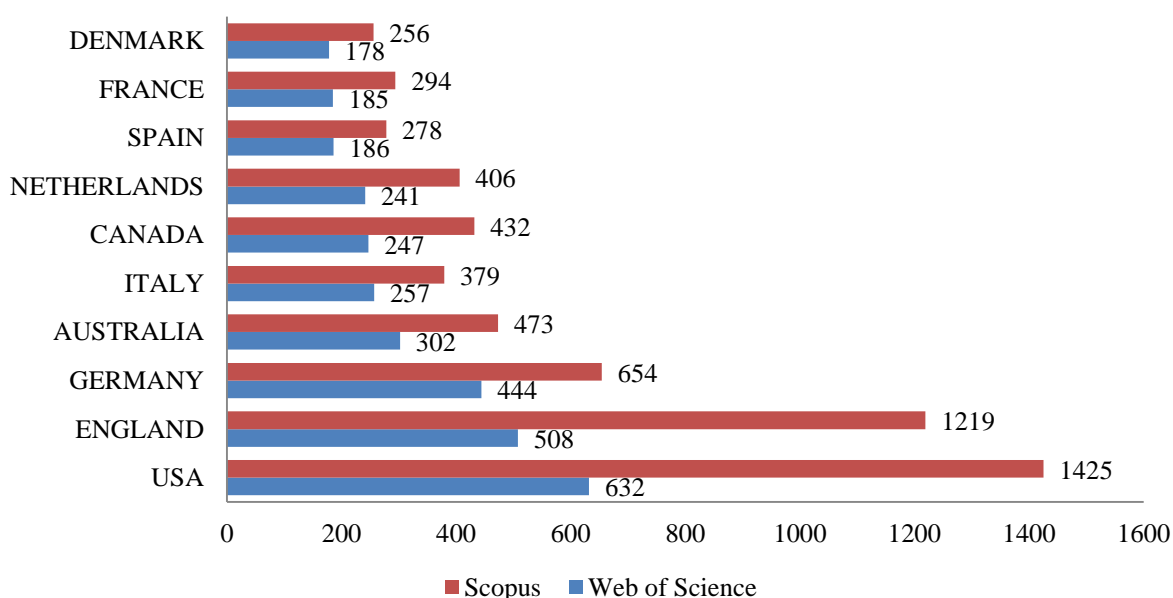
Figure 1. Articles evolution between 2008 and 2016.



Source: Elaborated by the authors through Web of Science, Scopus and Scielo database (2017).

To identify which countries are most prominent in the volume of scientific publications on animal welfare, the number of publications in the ten most published countries has been raised. Figure 2 identifies that the United States leads the surveys with 632 publications in the *Web of Science* database and 1,425 in the *Scopus* database, followed by England with 508 and 1,219 respectively, publications in a period between 2008 and 2016. Together, the United States, England, Germany and Australia represent about 50% of all publications in this period, with the total of the ten most published countries accounting for 85% of the entire world publication on animal welfare.

Figure 2. Development of publication by country.

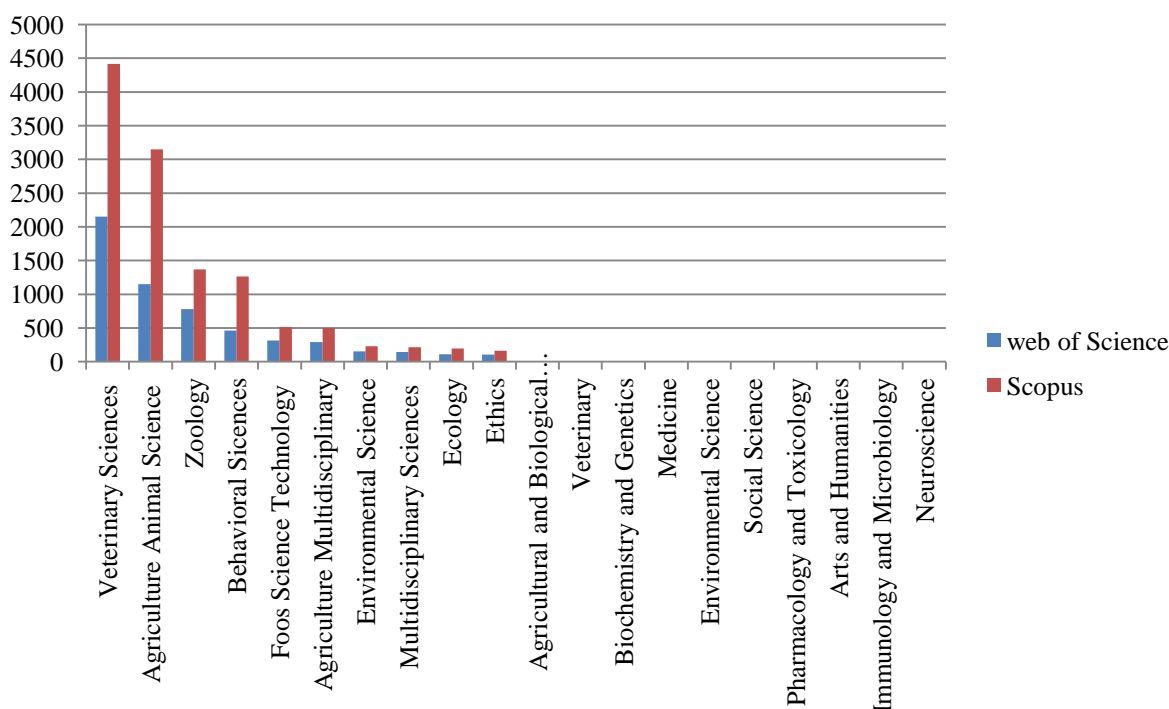


Source: Elaborated by the authors through *Web of Science* and *Scopus* database (2017).

Following the research filter that determines the areas of greatest relevance on animal welfare publications, Figure 3 compares the baseline surveys, *Web of Science* and *Scopus*, where it can be observed that *Veterinary Sciences* and *Agriculture and Biological Science* are

the areas of greatest relevance, and that concentrates the largest number of publications, according to the research it is observed that research area where the smallest number of articles on animal welfare are developed are *Ethics* and *Neuroscience* with 106 and 161 articles published respectively. Another factor that needs to be approached and observed is that each base has different characteristics related to the choice and determination of its areas of research, which refers to a more careful analysis in the act of comparing them.

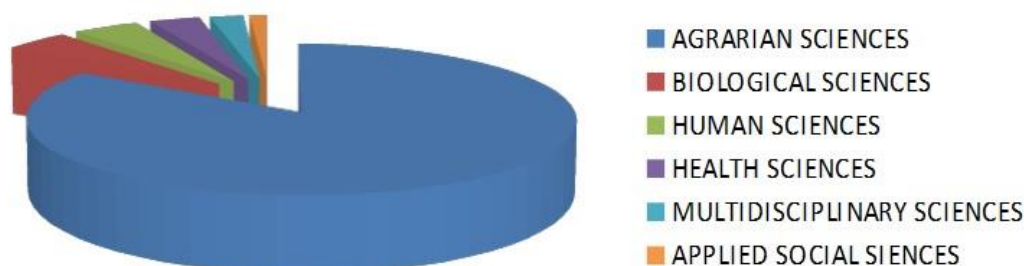
Figure 3. Development of publications by research area.



Source: Elaborated by authors through *Web of Science* and *Scopus* (2017) database.

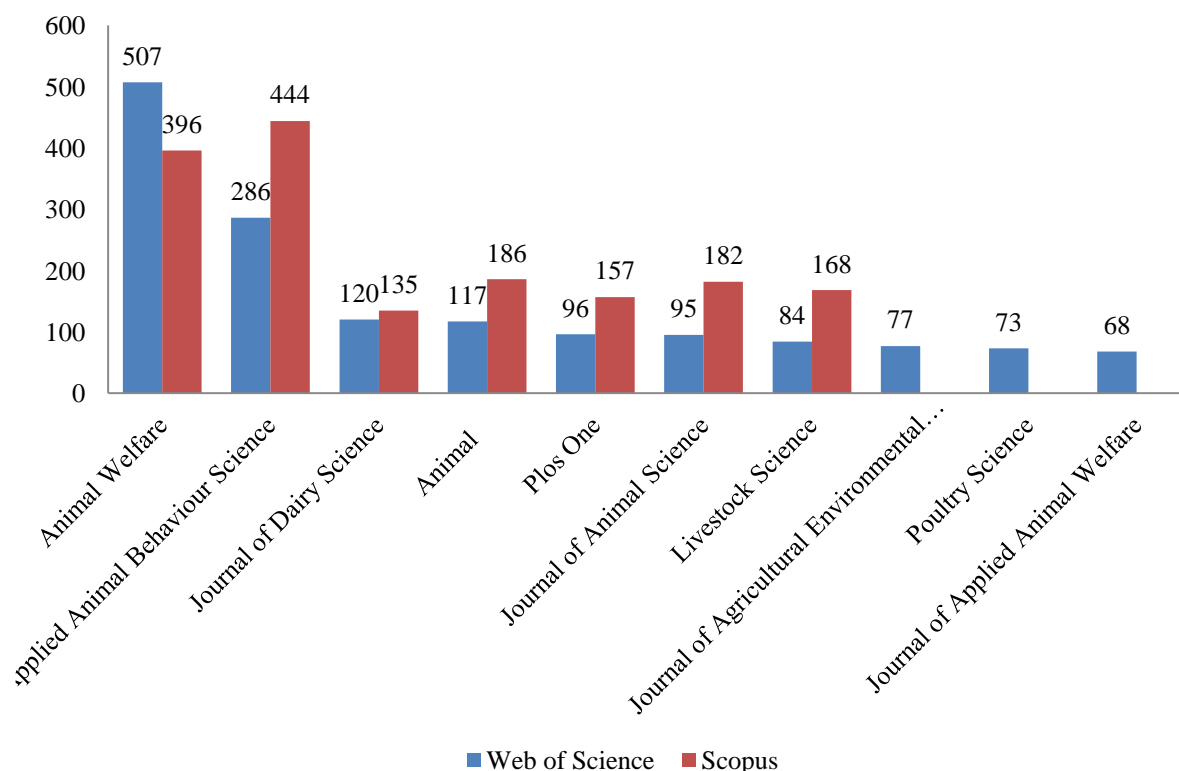
Analyzing the national scenario, Figure 4 shows that 85% are concentrated in Agrarian Sciences with an amount of 75 articles published in this area of research. Analyzing the performance of journals with the highest number of publications and comparing the databases studied, it is observed according to Figure 5 that both databases have the same characteristics related to journals, and this means that the *Animal Welfare* represents the largest publications with 507 articles published in the *Web of Science* database and 396 articles in the base of *Scopus*. And in the most relevant journals setting in the academic community, only *Animal*, *Livestock Science* and the *Journal of Agriculture Environmental Ethics* have no publications in the *Scopus* database.

Figure 4. Development of publications by research area.



Source: Elaborated by authors through *Scielo* database (2017).

Figure 5. Performance of journals with the highest publication index.



Source: Elaborated by the authors from data of Web of Science and Scopus (2017).

According to the study, at the international level, the journals with the highest index of animal welfare publications interact between the Web of Science and Scopus databases, which allows to develop a more detailed characterization and to describe data such as ISSN (International Standard Serial Number), qualifying CAPES 2017 and impact factor calculated by the SJR (Scimago Journal Ranking), according to Table 1.

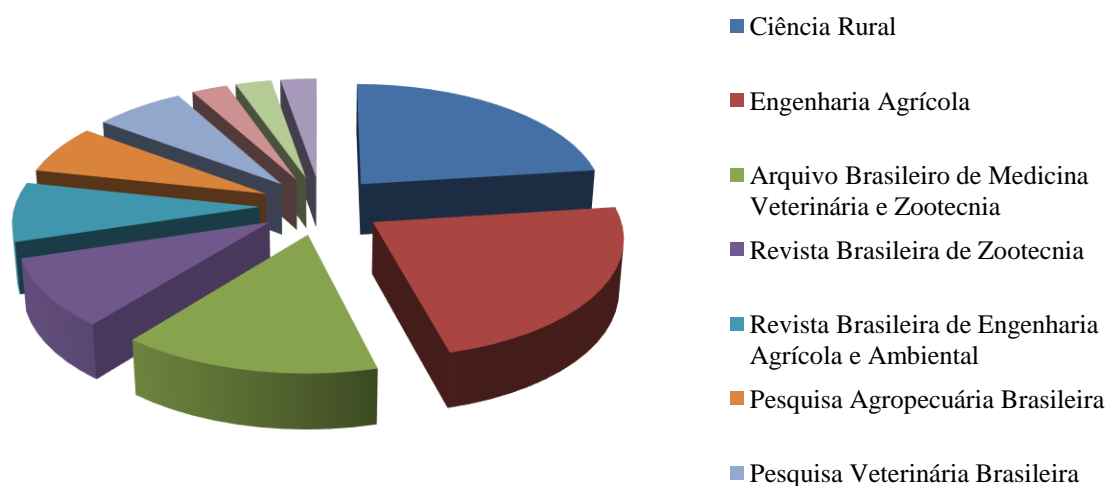
Table 1. Characterization of international journals.

ISSN	JOURNALS	CLASSIFICATION	JCR IMPACT FACTOR
0962-7286	Animal Welfare	B1	1.505
0168-1591	Applied Animal Behaviour Science (Print)	B1	1.881
0022-0302	Journal of Dairy Science	A2	2.562
1751-7311	Animal (Cambridge. Print)	A2	1.675
1932-6203	Plos One	A1	2.864
0021-8812	Journal of Animal Science	B1	1.202
1871-1413	Livestock Science (Print)	B1	1.489
1187-7863	Journal of Agricultural Environmental Ethics	B1	1.265
0032-5791	Poultry Science	B1	1.958
1088-8705	Journal of Applied Animal Welfare Science	B2	1.217

Source: Elaborated by Authors through *Web of Science* database (2017).

Regarding the publications in the national scenario, Figure 6 reveals that the most appropriate journals on the subject of animal welfare are the Rural Science and Agricultural Engineering, both with 17 published articles, which corresponds to an average of 35% of the publications.

Figure 6. Performance of journals with the highest level of publication.



Source: Elaborated by the authors based on data from Scielo (2017).

Table 2, shows a characterization of the most published national journals on animal welfare. It is presented its ISSN (International Standard Serial Number) and also that it fits Qualis CAPES 2017.

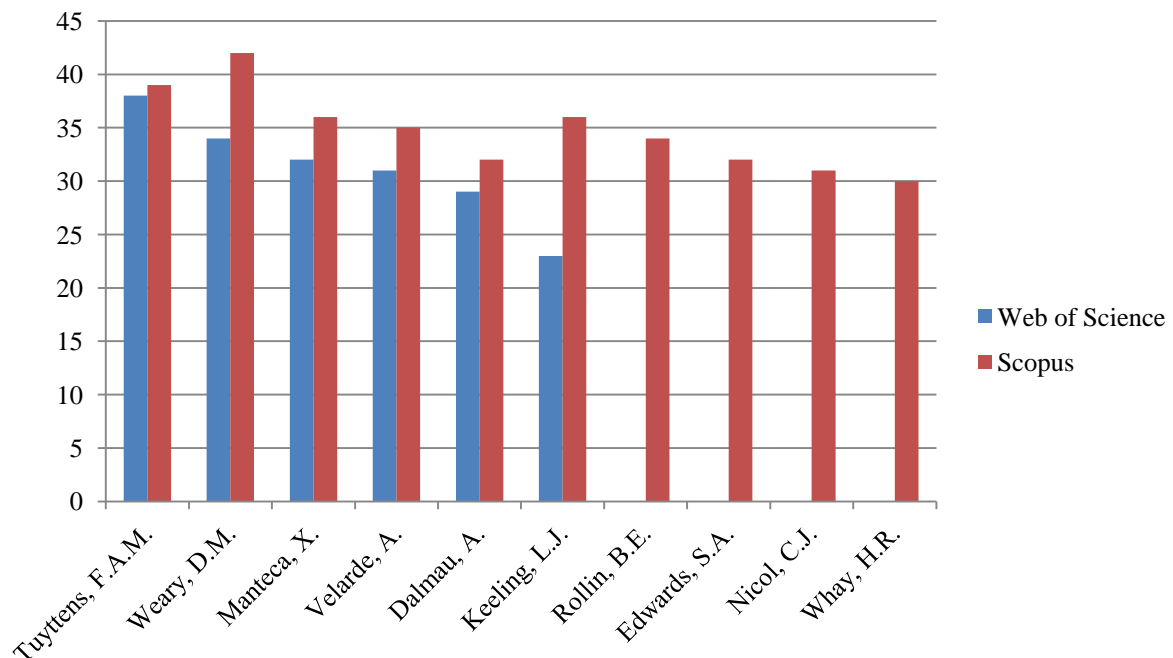
Table 2. Characterization of national journals

ISSN	MAGAZINE	QUALIS CAPES
0103-8478	Rural Science	B1
0100-6916	Agricultural Engineering	B1
0102-0935	Brazilian Archive of Veterinary Medicine and Animal Husbandry	B2
1516-3598	Brazilian Journal of Animal Science	B1
1415-4366	Brazilian Journal of Agricultural and Environmental Engineering	B1

Source: Elaborated by the Authors based on data from *Scielo* (2017).

Analyzing the authors who have more relevance in the academic community regarding the number of publications, it is observed that Tuytens, F.A.M. has the largest number of publications in Web of Science as well as in Scopus databases, as shown in Figure 7.

Figure 7. Main authors who publish about animal welfare.



Source: Elaborated by authors from Web of Science data (2017).

Another comparison that the study provided, was regard to the number of citations by relevant authors, according to Table 3, it is observed that some authors of the *Web of Science* base are also in the *Scopus database*, but not with the same number of citations. In the *Web of Science* database the most cited author is *Scholz, Stefan* with 221 citations, in the *Scopus* database the most cited author is *Lammer, E.*, with 223 citations, the same author appears with 209 citations in the Web of Science base. Another pertinent observation of the citations is that the most cited authors in both bases have no relation with those who published more on the subject of animal welfare.

Table 3. Characterization of citations by authors.

Autor/ <i>Web of Science</i>	Year	Citations	Author/ <i>Scopus</i>	Year	Citations
Scholz, Stefan	2008	221	Lammer, E.	2009	223
Lammer, E.	2009	209	Mendl, Michael	2009	210
Mendl, Michael	2009	201	Charlier, C.	2008	163
Bortolotti, G.R.	2008	127	Banks, M.R.	2008	155
Vanhonacker, Filiep	2008	115	Spears, J.W.	2008	139
Quinteiro-Filho, W.M.	2010	109	Enemark, J.M.D.	2008	136
Matheson, Stehanie M.	2008	108	Strähle, U.	2012	135
Zander, Katrin	2010	106	Lay, D.C.	2011	133
Grunert, Klaus G.	2014	100	Hooijmans, C.R.	2010	133
Oltenacu, P.A.	2010	95	Quinteiro-Filho, W.M.	2010	132

Source: Elaborated by the authors through data from the Web of Science and Scopus (2017).

The key word used in the elaboration of the "*Animal Welfare*" research is related to the most used terms in national and international publications on animal welfare. From this, the word cloud was constructed using the keywords of the main articles, as shown below in Figure 8.

Figure 8. Keyword cloud.



Source: Prepared by the authors using the Software on line wordclouds.

Linking the research results to the Norbert Elias Civilization Process

Thus, summing up, it is possible to say that for Elias the civilizational process occurs due to the elevation of the level of repugnant sensitivity to the presence of the embarrassment in relation to a certain process or form of behavior. This elevation is initially given in a small social group "cut", and that is gradually transmitted to larger segments. In this context, it is suggested that the concept of Animal Welfare did not arise as a result of the rational understanding of animal husbandry and slaughter processes, but rather from a "Social Situation"

that made possible and necessary some gradual changes of emotions and behavior. In other words, there was an expansion in the level of embarrassment or repulsion by consumers in the way they treated the animals that would later serve them as food.

According to the author, if a man of the present Western civilized society were suddenly transported to a remote epoch of his own society, such as the Medieval-feudal period, he would discover that actions said to be "uncivilized" in other modern societies were common at that time. His reaction would differ little from that which is awakened in the present by the behavior of people living in feudal societies outside the Western world.

The theory of civilization helps us to see the misleading image of man in what we call the modern era as less self-evident, and to distance ourselves from it, so that we can begin to work an image of man less oriented by the feelings of his own person and by judgments of value attributed to them than to men as a concrete object of thought and observation. On the other hand, it is necessary to criticize the modern image of man so that we can understand the civilizing process. This is because, in the course of this process, the structure of individual human beings, who become "more civilized", changes.

While we face the individual human being as a closed continent, with an outer shell and a nucleus hidden within it, we cannot understand a civilizing process that goes on for several generations, in the course of which the personality structure of the individual human being changes without that changes his nature.

In the course of the research, which was proposed at the beginning of the study, one can see that with the bibliometric study, as demonstrated in the previous chapter, there was a considerable increase in the production of scientific knowledge on animal welfare in general, a fact that confirms the concern and the gradual increase of the sensibility of the human being with the forms of treatment of the animals.

Nowadays it seems natural to have our meals sat at the table, using a fork, a knife and a napkin. However, reading these works with the data collected shows that this behavior was constructed by men over time, going through various transformations and growing in recent years.

Conclusions

The objective of this study was to analyze the reasons that are influencing the growing increase of publications at a global level, addressing the theme of animal welfare. For that, a bibliometric analysis was performed in the Web of Science, *Scopus* and *Scielo* databases, from 2008 to 2016.

The results of the research indicate an international publication on the subject of total animal welfare of 10,780 articles between the years 2008 to 2016. Out of this, 3,738 articles were published in the *Web of Science* database and 7,042 articles published in the *Scopus* database, it is important to emphasize that there is a possibility of duplication of articles among the bases, and due to the large number of publications this conference is not feasible. In addition, a national publication of 87 articles in the *Scielo* database was observed for the same period analyzed. Indicating that Brazilian science is very distant from other countries in relation to the thematic analyzed in the present research.

The countries with the largest volume of scientific publications on animal welfare at the international databases *Web of Science* and *Scopus* were the United States, England, Germany and Australia. The four of them altogether represent around 50% of all publications in the analyzed period. At the international level the research evidenced that the areas of research of greater relevance were *Veterinary Sciences* and *Agriculture* and *Biological Science*, concentrating the greater number of publications. At the national level, the results show that 85% of published research is concentrated in the area of Agrarian Sciences.

The journals that stood out the most were *Animal Welfare*, with 507 publications in the *Web of Science* database and 396 in the *Scopus* database, and *Applied Animal Behavior Science*, with 286 publications in the *Web of Science* and 444 in the *Scopus* database, representing a total of 15% of all publications. The results also reveal that the author *Tuytens, F.A.M.* is prominent in the academic community, with the largest number of publications in both the *Web of Science* database and *Scopus*.

In general, the evolution of the publications approaching the theme of animal welfare was verified, trying to identify the reasons that have influenced the increase of the publications in the international as well as the national scenario. The results indicate an increasing evolution of scientific production in this subject, as well as a multiplicity of reasons that have led the authors to publish articles about this subject, especially in the area of Veterinary Sciences.

So, despite the evolution of scientific production in this theme, it is believed that there is a gap to be filled by researchers regarding the social and behavioral reasons that contributed to the construction of the concept of animal welfare and its widespread expansion nowadays.

The search to understand Norbert Elias's contribution to the civilizing process and the gradual perception of the human being with animal welfare has allowed us to understand how social transformations happen over time and to perceive that certain social behaviors and institutions are constructions human beings. On the other hand, it made us reflect on our own habits and customs, transforming ourselves in a way that allows us to better refine our posture and to reduce or avoid certain habits that may cause displeasure to people who daily interact with us and reflect on how we have to improve our scientific knowledge.

It is worth recognizing as a limitation of the study, which was exploratory and subjectively analyzed the quantitative interpretations of the sample of articles found. Therefore, new research on the subject in question is pertinent, a closer relationship of the term "animal welfare" with the civilizing process of Norbert Elias is proposed, which can be done by amplifying the filter keywords search, this way it would be possible to analyze content and systematic review relating the two themes in order to clarify more deeply and increasingly approach animal welfare issues with the evolution of human behavior.

References

ARAÚJO, C. A. **Bibliometria: Evolução Histórica e Questões Atuais.** *Em Questão*, v. 12, n. 1, p.11-32, 2006.

ARAÚJO, R. F.; ALVARENGA, L. **A Bibliometria na pesquisa científica da Pós-graduação Brasileira de 1987 a 2007.** *Encontros Bibli: revista eletrônica de biblioteconomia e ciência da informação*, v. 16, n. 31, p. 51-70, 2011.

BRANDÃO, C. F. **A teoria dos processos de civilização de Norbert Elias: o controle das emoções no contexto da psicogênese e da sociogênese.** (Tese de Doutorado) Marília, S.P. Universidade Estadual Paulista – UNESP, 2000.

BRAMBELL R Report of the Technical Committee to Enquire into the Welfare of Animals kept under Intensive Livestock Husbandry Systems, London : Her Majesty's Stationery Office, 1965.

BRASIL. **Decreto nº 24.645, de 10 de julho de 1934.** Dispõe sobre penas para maus tratos aos animais. Disponível em: <http://legis.senado.gov.br/legislacao/ListaPublicacoes.action?id=39567>. Acesso em: 10 set. 2017.

_____. Portal de Legislação. Portaria nº 524 de 21 junho de 2011 / MAPA - Ministério da Agricultura, Pecuária e Abastecimento. Disponível em: <https://www.diariodasleis.com.br/legislacao/federal/217508-comissao-tucnica-permanente-de-bem-estar-animal-ctbea-instituir-a-comissao-tucnica-permanente-de-bem-estar-animal-ctbea-do-ministerio-da-agricultura-pecuaria-e-abastecimento.html>. Acesso em: 10 set. 2017.

_____. **Decreto nº 9.013, de 29 de março de 2017**. Dispõem sobre a inspeção Industrial e Sanitária de Produtos de Origem Animal. Disponível em: http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2017/decreto/D9013.htm. Acesso em: 10 set. 2017.

CFMV. Conselho Federal de Medicina Veterinária. **Campanha sobre Bem-Estar Animal**. Disponível em: <http://portal.cfmv.gov.br/portal/pagina/index/id/150/secao/9>. Acesso em: 02 out. 2017.

COLE, M. From “animal machines” to “happy meat”? Foucault’s ideas of disciplinary and pastoral power applied to “animal-centred” welfare discourse. *Animals*, v. 1, n. 1, p. 83–101, 2011.

ELIAS, N. **Escritos e Ensaios**: 1-Estado, Processo, Opinião Pública. Rio de Janeiro: Jorge Zahar, 2006.

ELIAS, N. **O Processo Civilizador**: Uma História dos Costumes. Rio de Janeiro: Jorge Zahar, 1994.

FAWC. **Economics and Farm Animal Welfare**. December, 2011.

FAWC. **Farm animal welfare in Great Britain**: past, present and future. n. October, p. 1–70, 2009.

FRASER, D. **Understanding Animal Welfare**: the Science in its Cultural Context. Chichester: Wiley Blackwell, 2008.

HEINICH, N. **A Sociologia de Norbert Elias**. Trad: Viviane Ribeiro. Bauru. Edusc, 2001.

LANDINI, T. **A sociologia de Norbert Elias**. BIB: Revista brasileira de informação bibliográfica em ciências sociais, n. 61, 2006.

MACIAS-CHAPULA, C. **O Papel da Informetria e da Cienciometria e sua Perspectiva Nacional e Internacional**. Ciência da Informação, v. 27, n. 2, 1998.

MAPA. Ministério da Agricultura Pecuária e Abastecimento. 2016. **Bem-estar Animal**.pdf. Disponível em: <http://www.agricultura.gov.br/assuntos/camaras-setoriais-tematicas/documentos/camaras-setoriais/carne-bovina/anos-anteriores/bem-estar-animal.pdf/view>. Acesso em: 3 set. 2017.

MAPA. Ministério da Agricultura Pecuária e Abastecimento. 2016. **Folder Bem-estar Animal no Brasil**. Disponível em: <http://www.agricultura.gov.br/assuntos/sustentabilidade/bem-estar-animal/arquivos-publicacoes-bem-estar-animal/folder-bem-estar-animal-no-brasil-versao-portugues.pdf/view>.

Acesso em: 3 set. 2017.

OLIVEIRA, O. N. **O Processo Civilizador Segundo Norbert Elias**. IX Anped Sul. 2012.

QUEIROZ, M. L. V.; FILHO, J. A. D. B.; ALBIERO, D.; BRASIL, D. F.; MELO, R. P. **Percepção dos consumidores sobre o bem-estar dos animais de produção em Fortaleza, Ceará**. Revista Ciência Agronômica, v. 45, n. 2, p. 379-386, 2014.

QUINTANEIRO, T. **Processo Civilizador, Sociedade e Indivíduo na Teoria Sociológica de Norbert Elias**. Belo Horizonte: Argvmentvm. 2010.

SENRA, L. X.; LOURENÇO, L. M. **A Importância da Revisão Sistemática na Pesquisa Científica**. In: BAPTISTA, M.N.; CAMPOS, D.C (Org.). Metodologias de Pesquisa em Ciências: Análises Quantitativas e Qualitativas. 2.ed. Rio de Janeiro: LTC, 2016. p. 396.

SILVA, J. A. Norbert Elias. **O Processo Civilizador: Uma História dos Costumes**. Humanidades em Diálogo, v. 4, n. 2, p. 195-200, 2012.

SILVA, M. R.; HAYASHI, C. R. M.; HAYASHI, M. C. P. I. **Análise Bibliométrica e Cientométrica: Desafios para Especialistas que Atuam no Campo**. InCID, v. 2, n. 1, p.110-129, 2011.

TAGUE-SUTCKIFFE, J. **An Introduction to Informetrics**. Information Processing & Management, v. 28, n. 1, p.1-3, 1992.

TRATADOS CE,. **REGULAMENTO (CE) Nº 1099/2009 DO CONSELHO**, de 24 de Setembro de 2009, relativo à proteção dos animais no momento da occisão. Jornal Oficial da União Europeia, 2009.