Religious Slaughter: Data from Surveys and Spot-Check Visits in Italy and Animal Welfare Issues

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Abstract
The public is becoming increasingly concerned about how nonhuman animals are treated, and many studies show that European citizens are concerned about farm animal welfare. Religious slaughter has always been a controversial and emotive subject, caught between animal welfare considerations, cultural and human rights issues. There is considerable variation in current practices, and the rules regarding religious requirements are still confusing. Similarly, consumer demands and concerns also need to be addressed. Therefore, there is a need for information relating to slaughter techniques as well as product range, consumer expectations, market share, and socioeconomic issues. This research aims at identifying the procedures for current methods of religious slaughter in Italy. Conventional slaughter is performed with prior stunning; kosher slaughter is practiced without stunning. Halal slaughter is performed for most of the animals without stunning. Halal slaughter with prior stunning is accepted for 5.9% of small ruminants. Questionnaires were sent to regional health authorities, and spot-check visits were conducted on cattle, sheep, and poultry abattoirs in Italy from October 2008 to March 2009. The observed
parameters are discussed in regards to the risk to animal welfare. Observations not only on restraining methods, but also on post-cut, clinical indicators of consciousness are considered. This research is the first, systematic attempt to analyze the methods of religious slaughter and to discuss the implications for animal welfare.

**Keywords**
religions slaughter, animal welfare, stunning, restraining, ethics, moral

**Introduction**

The lack of an overarching halal authority has left the European market open to doubts in the areas where religion and consumer culture meet. The vast majority of Muslims are Sunni, but there are four separate schools of thought/jurisprudence (or Madh’hab) within the Sunni—the Hanafi, Hanbali, Maliki, and Shafie—each with different degrees of national and regional influence. Although the theology of each one is accepted by the other three, differences of opinion are evident on many things, including halal practices (Wan Hassan, 2007).

The current European Union regulation on the protection of nonhuman animals at the time of killing (Council Regulation (EC) No 1099/2009 of 24 September 2009 on the Protection of Animals at the Time of Killing, 2009) provides an exemption from the requirement to stun animals prior to slaughter. This exemption is motivated by the European Union’s intention to give priority to human rights (i.e., religious freedom) over animal welfare considerations. In the dynamic market for halal meat, this has provided an opportunity for new certifying bodies to segment the market by making the claim that only slaughter without stunning produces authentic “halal” meat. The complexities involved and the lack of clear information and guidance has contributed greatly to the growth of “hybrid” forms of governance and third-party certification within the halal supply chain. The result is a great variation across Europe in the public tasks of protecting both animal welfare and human rights, which in this case are managed through the performance of government agencies, supply chain operators, and nonprofit organizations, acting within institutionalized, mixed forms of shared responsibility (Lever & Miele, 2012).

For these reasons, and given the multiethnicity of Islamic immigration in Italy, the Islamic religion will not be addressed with reference to problematization and, therefore, no reference to specific school of thoughts will be made.

In an attempt to study the incidence and the scale of practices of religious slaughter (halal and shechita) of cattle, a comprehensive survey was carried out in Italy to collect data for small ruminants (sheep and goats) and poultry. This
is the first systematic attempt to analyze the methods of religious slaughter from the point of view of protecting the animals.

**What Is Religious Slaughter?**

Religious slaughter, otherwise known as ritual slaughter, is carried out legally in licensed slaughterhouses in Italy by authorized slaughter-men of the Jewish and Islamic faiths. Animals reared for the production of meat, skin, fur, or other products must either be stunned to cause immediate loss of consciousness until death is caused by bleeding, or killed outright using specified methods outlined in the legislation. However, there are special provisions made for religious methods of slaughter. There are exceptions to the legal requirements regarding stunning: here we mention the Jewish method for the food of Jews by a Jew licensed by the authority and duly licensed by the Rabbinical Commission and the Muslim method for the food of Muslims by a Muslim licensed by the authority. Nevertheless, the law does require that religious slaughter must be carried out without inflicting unnecessary suffering.

Currently, although the correct considerations for global security remain uncertain, several groups have raised moral questions regarding ritual slaughter and animal rights. The worldwide discussions have three aspects: the word “rights” is used in a variety of overlapping ways; it has been inextricably linked with the notion of legal rights; and rights are commonly taken to be correlative with duties, whereas many philosophers agree with Kant (1785/2003) in rejecting the notion of duties to animals.

The Council Directive 93/119/EC of 22nd December 1993 on the Protection of Animals at the Time of Slaughter or Killing (1993) applies to the movement, lairaging, restraint, stunning, slaughter, and killing of animals bred and kept for the production of meat, skin, fur, or other products; and to methods of killing animals for the purpose of disease control. The new Regulation 1099/2009 introduces new arrangements for slaughter licences from January 1, 2013 (Council Regulation (EC) No 1099/2009 of 24 September 2009 on the Protection of Animals at the Time of Killing, 2009). These legal sources give, among others, the following definitions: slaughterhouse (any premises, including facilities for moving or lairaging animals, used for the commercial slaughter of animals), restraint (the application to an animal of any procedure designed to restrict his or her movements in order to facilitate effective stunning or killing), stunning (any process which, when applied to an animal, causes immediate loss of consciousness that lasts until death), killing (any process that causes the death of an animal), slaughter (causing the death of an animal by bleeding), competent authority (the central authority of a
Member State competent to carry out veterinary checks or any authority to which it has delegated that competence).

Regarding this authority, in the Member States, the religious authority on whose behalf slaughter is carried out shall be competent for the application and monitoring of the special provisions, which apply to slaughter according to certain religious rites. Regarding said provisions, that authority shall operate under the responsibility of the official veterinarian, as defined in the Regulation 1099/2009 (Council Regulation (EC) No 1099/2009 of 24 September 2009 on the Protection of Animals at the Time of Killing, 2009). The stunning of farm animals prior to slaughtering can be performed with the following methods: captive bolt pistol, concussion, electronarcosis, and exposure to carbon dioxide. Stunning must not be carried out unless it is possible to bleed the animals immediately afterward. Stunning before slaughter is therefore a statutory requirement in Europe and is performed to induce unconsciousness in animals so that slaughter is performed without causing anxiety, pain, suffering, or distress.

In the majority of the countries of the European Union, religious slaughter is exempt from stunning regulations. For the Jewish and Muslim communities, the animals are required to be alive and healthy, and to have suffered no injury at the time of slaughter. To meet these requirements, slaughter without stunning is performed in licensed slaughterhouses, or occasionally during religious festivals on communal grounds. However, in both Jewish and Muslim slaughter methods, the holy writings do not expressly ban stunning. Therefore, some local Islamic authorities accept a stunning method, provided it does not kill the animals. Furthermore, in New Zealand and Australia, there is a voluntary agreement of the Jewish community to stun cattle by captive bolt within 10 s after sticking.

**Evolution of the Demand of Halal Meat**

At present, the halal market in Europe is synonymous with meat products: the halal market could expand to encompass not only the food market in general, but also cosmetics and pharmaceutical products. In France, a reliable assessment of the size and structure of the halal market, and particularly the halal meat market, has yet to be undertaken. In 2000, the HCI (Haut Conseil à l’intégration) concluded that, at present, no comprehensive inventory for the halal meat market is available in France, and they cited estimations dating from 1993 (200,000 tons a year; /IMG/pdf/isl_repu_Ht_conseil.pdf; Haut Conseil a l’integration. L’Islam dans la Republique, 2000). The inter-Ministerial commission COPERCI has issued more recent reports based on increasing
volumes of census data on Muslim immigrant populations and agro-economic
data looking at consumption patterns per meat type of these populations
(Comité Permanent de Coordination des Inspections (COPERCI), 2005).

Using Office National Interprofessionnel des Viandes, de l’Elevage et de
l’Aviculture (OFIVAL) agro-economic data from 2004, together with esti-
mates of the number of Muslims in France and their consumption of meat,
the commission estimated that the production of halal meat is above 7% of
national production and 126% of national sheep and goat production (Lever
& Miele, 2012). It would seem, therefore, that national production is largely
sufficient to meet the demand for halal, with the exception of sheep (OFIVAL;
Office National Interprofessionnel des Viandes, de l’Elevage et de l’Aviculture,
2004). For the United Kingdom, Mintel (http://www.mintel.com) estimated
the scale of the halal food market to be at £460 million in 2001.

The Halal Food Authority (HFA, http://www.halalfoodauthority.com) lists
over 100 food manufacturers and distributors that have HFA approval or
endorsement (Halal Food Authority, 2007). These manufacturers include
“mainstream” companies such as Sainsbury’s. The growth in the market for
halal products has encouraged the segregation of halal production processes in
mainstream companies. In 2004, the first halal chocolate bar was launched in
the United Kingdom, and halal products such as beef and poultry are increas-
ingly visible in mainstream retail outlets—such as ASDA, Safeway, Sainsbury,
and Tesco—in areas with sizeable Muslim populations.

The general impression is that there is a significant and growing market in
the United Kingdom for halal and, to a lesser extent, kosher products. In par-
ticular, a rising demand for branded, labelled easily identifiable halal “conve-
nience” goods is a reflection of the increasing purchasing power, especially
among Muslim communities (Evans et al., 2010). In the world market, halal
products account for $150 billion, with an increase of 15% since 1998. In the
European Union, the sales volume for halal products reached 15 billion Euros
in 2003. In Italy, there is a potential market for 4.5 million Euros for sauces
and 3 million for pre-cooked products with halal certifications (http://www.
halalitalia.org).

Many studies show that European citizens are concerned about farm animal
welfare. For example, the 2006 Eurobarometer survey found that 62% of the
29,152 people questioned said yes, certainly or yes, probably to the question:
“Would you be willing to change your usual place of shopping in order to be
able to buy more animal welfare friendly food products?” (Special Eurobarom-
eter 270: Attitudes of EU Citizens towards Animal Welfare, 2007). The Wel-
fare Quality telephone survey (conducted in 2005) also showed that the vast
majority of European consumers considered farm animal welfare to be either
very important or important (Italy: 87%; Norway: 84%; Hungary: 83%; Sweden: 83%; Great Britain: 73%; The Netherlands: 69%; France: 65%; Kjaernes et al., 2008).

However, the same telephone survey showed that, whereas the vast majority of consumers thought about animal welfare (in general terms), fewer actually thought about animal welfare when shopping for their food (Italy: 54%; Norway: 26%; Hungary: 36%; Sweden: 53%; Great Britain: 39%; The Netherlands: 27%; France: 37%; Kjaernes et al., 2008). Furthermore, animal-friendly products still represent a small segment of the food market in many European countries. Thus, it would seem that consumers tend to overstate their willingness to purchase products with higher standards of animal welfare and that the consumers’ supposed desire to pay more for improved animal welfare is, in reality, not put into practice in the supermarket (Cenci-Goga & Fermani, 2010).

Debate on Religious Slaughter

The question about our knowledge of animal welfare and pain has been a vast topic of study in veterinary literature for decades (Bergeaud-Blackler, 2007). Special attention has been paid to how animal pain should be conceptualized, quantified, and studied objectively. The perception of pain at sticking has been the subject of controversial debate within the scientific community. Based on scientific studies in this field, most researchers believe that when captive bolt and electrical stunning are done properly, they induce instantaneous insensitivity (Gregory, 1998) and that slaughtering after animal stunning causes less pain than slaughtering with no previous stunning (Gibson et al., 2009b); however, other authors do not agree (Levinger, 1995; Rosen, 2004).

For instance, scientific literature has shown how evoked responses in the brain have been studied to assess consciousness in animals. An evoked response is the electrical activity in the brain, which occurs as a response to an external stimulus. The disappearance of any response indicates a loss of ability to perceive the stimulus (Gregory, 1998). The duration of brain function after sticking is quite variable for evoked potentials during kosher slaughter, whereas a study on cattle (Daly et al., 1998) showed that captive bolt stunning followed by sticking results in an immediate and irreversible loss of evoked potentials. The potential risk of the animal remaining conscious after sticking is an animal welfare issue (Catanese & Cenci-Goga, 2010), necessitating the encouragement of stunning during religious slaughter where religious communities can accept it.

In Italy, halal and kosher slaughter are practiced for cattle, small ruminants, and poultry. Differences exist among religious slaughter practices regarding
restraint systems. The Italian Legislative Decree 333/98 (Decreto Legislativo 333/98, Attuazione Della Direttiva 93/119/EC Relativa Alla Protezione Degli Animali Durante la Macellazione o l’abbattimento, 1998) and the measures of the European Directive 93/119/EC (Directive 93/119/EC, 1993) forbid the shackling of small ruminants before sticking. During sticking, the average number of cutting movements may be related to the restraint system, placing importance on the manual skill of the operator. The difference in the average number of cutting movements between kosher- and halal-shackled and kosher- and halal-slaughtered sheep could be explained by the operator’s skill in sticking.

The longer duration of the average time of struggling after sticking for cattle compared to sheep can be explained by the presence of encephalic sprinkling, which is represented by the anastomosis between the vertebral arteries and branches of the carotid arteries. This kind of sprinkling is present in cattle species and absent in sheep species (Gregory, 1998). Vertebral arteries are not cut during sticking. An implementation of the Italian Legislative Decree 333/98 (Decreto Legislativo 333/98, Attuazione Della Direttiva 93/119/EC Relativa Alla Protezione Degli Animali Durante la Macellazione o l’abbattimento, 1998) is desirable from an animal welfare perspective.

The major welfare issues during slaughter without stunning include the stresses of handling and restraint prior to religious slaughter (Dunn, 1990; Grandin & Regenstein, 1994), whether the neck incision is painful during the cut and/or immediately afterward (Gibson, Johnson, Murrell, Chambers, et al., 2009; Gibson, Johnson, Murrell, Hulls, et al., 2009; Gibson et al., 2009a, 2009b), and whether sensibility and consciousness are lost quickly enough following sticking (Anil, McKinstry, Gregory, et al., 1995; Anil, McKinstry, Wotton, et al., 1995; Daly et al., 1998; Grandin & Regenstein, 1994; Rosen, 2004).

In the controversies surrounding animal suffering and ritual slaughter, some opponents blame inadequate conditions for slaughter and others blame the imperfection of stunning methods that can add to an animal’s suffering (Bonne & Verbeke, 2008). The validity of the arguments depends on the ways in which the problem is circumscribed and defined. For defenders of ritual slaughter, preliminary stunning can inflict additional suffering on the animal. They stress significant limitations to each mode of stunning recommended by the regulation. All specialists in Islam agree that to be licit, the meat must originate from an animal who has been killed by the act of slaughter itself (as distinct from death by natural causes or accident). To summarize, the link between stunning and the level of suffering is not well established on the one hand, and on the other, the religious legitimacy of stunning is disputed (Bergeaud-Blackler, 2007).
Implication of Mechanization: The Example of Poultry

Although all 35 scholars attending a recent debate on religious slaughter rejected the mechanization of the procedure under halal law, the issue remains controversial, with some halal organizations reported to take a more pragmatic view and apparently agreeing to automated slaughter under certain conditions.

Mechanical slaughter is one of the most controversial aspects of the halal slaughter process, and there has been much debate regarding “zabihah” (hand-slaughtered animals) and machine-slaughtered animals (Cenci-Goga & Cata-nese, 2009). Most poultry slaughterhouses employ a rotating blade/mechanical knife which slits the throat of the chickens as they pass by on the automated assembly line. Once switched on, the blade operates continuously and can slaughter more than two chickens per second. Human interventions in this process involve switching on the machine and manually severing the vessels of chickens missed by the machine.

The machine does the rest of the work, as there is no need to press the button, except at the beginning. These chickens are not killed simultaneously by one press of the button either. In fact, the machine slaughters the chickens individually, one after the other, over a period of many hours. Therefore, it would be accurate to say there is no human involvement in the slaughter of the majority of the chickens, and they are being slaughtered by a machine rather than a human being (Halal Advocates of America, 2013).

The Sunnah method of slaughter is to manually apply a sharp instrument to the throat of the animal. The scholars of Fiqh have stipulated that the slaughterer must meet the Islamic criteria for the slaughter to be valid. He/she must be a Muslim or a believing Jew or Christian. There is a definite doubt as to whether a machine meets this requirement. Likewise, many schools of thought require the legal intent of slaughter be established in order for the slaughter to be acceptable according to Islamic law. There are strong viewpoints and detailed arguments presented on both sides of the machine slaughter debate. Some Islamic scholars argue that mechanical slaughter is completely lawful, whereas others argue that the process is completely unacceptable and the animal slaughtered in this process is unlawful. No clear consensus exists regarding the permissibility of this slaughter method, whereas all scholars accept the fact that the Sunnah method of hand slaughter does meet halal requirements.
Muslim Immigrant Groups in Italy: Background and Experience

A large proportion of people coming from non-European countries and living in Italy belongs to the Muslim faith, currently the second most popular religion in Italy; this includes a considerable number of immigrants and their second and third generation descendants, born and raised in Italy (Caritas/Migrantes, 2009). According to the latest, official Italian statistics, Muslims make up about 34% of the 2,400,000 foreign residents living in Italy as of January 1, 2005. Another 100,000 to 150,000 should be added these 820,000 foreign residents who are of Muslim heritage legally residing in Italy, as Muslims represent, according to annual estimates by the Italian association Caritas, about 40% of Italy’s illegal immigrants.

Muslims represent 1.4% of the population in Italy today. The Muslim population living in Italy is quite substantial, amounting to 1,293,000 (data from December 31, 2009). The most represented nations are as follows: Morocco (431,529), Tunisia (103,678), Egypt (82,064), Senegal (72,618), Bangladesh (73,965), Pakistan (64,859), Nigeria (48,674), Ghana (44,353), and others (66,567) (Caritas/Migrantes, 2009). Italy does not have many prominent Muslim scholars. Many Muslims rely on foreign scholars. Many South Asian Muslims in Italy, for example, forward all their queries to a scholar from South Africa, Mufti Ismail Moosa. A minority of Italian Muslims belong to religious associations; the best known are UCOII Unione delle Comunità Islamiche d’Italia and CCII, Centro Culturale Islamico d’Italia (Islamic Cultural Center in Rome), which has its seat in what is reputed to be the largest mosque in Europe.

The most important areas of concern from the perspective of public health are health and food safety. In fact, there is a direct correlation between health conditions and access to the health services among immigrants: immigrants’ access to health is sporadic and unpredictable due to the lack of knowledge of preventive medicine in their native countries. The Ministry of Health is, therefore, actively engaged in diffusing its prevention activities in order to increase the access rate to the health services (Drewnowski & Specter, 2004). The analysis of the immigrants’ health conditions has shown some major problems. The problems include a growing incidence of scabies and tuberculosis; poor access to the health services (provided free to the community); non-compliance not only with the safety requirements in the work place, but also with the hygiene requirements during slaughter and all the stages of food production, from the early preparation stages to distribution.

The policy of the Ministry of Health regarding these major problems is based on consumer education and on the continual application of preventive
measures. One difficulty in applying the modern concepts of food safety, especially as far as prevention is concerned, is due to the strong food traditions of most immigrants in which the religious component is a major characteristic. This has led to an increase in the production and sale of traditional foods (also called ethnic foods). Islamic centers provide a wide, articulated support network to Muslim citizens (e.g., with the regular provisions of Arabic language and Islamic culture courses), but they also interact with the local communities to sustain and develop food services delivered according to the Islamic law, particularly with meats produced according to the rules of Islamic ritual slaughter (Campagnolo & Perocco, 2002).

**Materials and Methods**

**Questionnaires**

The list of abattoirs authorized to perform religious slaughter in Italy was requested from the Italian Ministry of Health. A questionnaire was sent in September 2007 to the veterinary service of all 136 Italian abattoirs authorized to perform religious slaughter. In spring 2008, a second questionnaire was sent to the National Health Authority to obtain official data on religious slaughter. This “authority” questionnaire was sent in early spring 2008 to the Health Ministry. On September 20, 2008, the Direzione Generale della Sanità Animale e del Farmaco Veterinario (Department of Animal Health and Veterinary Drugs) of the Ministry of Health sent a letter to all the regional authorities, which then returned the completed questionnaire by the end of 2009.

**Spot-Check Visits**

The visits to the Italian abattoirs were carried out between October 2008 and March 2009. During this period, five slaughterhouses (one of which was checked for both halal and kosher slaughter) were examined in three Italian regions.

All the animals were slaughtered without stunning, in compliance with the derogation permitted by Italian legislation (Cenci-Goga et al., 2009; Velarde et al., 2010). A reliable, reproducible protocol was developed by means of a video-audio recording of each animal during slaughter. Data were taken from recordings lasting 329 min and 28 s. A total of 313 animals were analyzed via video image analysis, both for halal and shechita practices. The information in Table 1 concerning the slaughterhouses under examination is divided according to the species, methods of slaughter, and restraint.
Results

Questionnaires to Veterinary Services

Twenty-nine questionnaires were sent back: 25 for halal slaughter; 3 for kosher slaughter; and one questionnaire was received without data for privacy reasons. For halal practice, 9 questionnaires were analyzed for cattle, 12 for small ruminants, and 4 for poultry. For kosher practice, one questionnaire was analyzed for each category (cattle, small ruminants, and poultry). A total of 18% of the abattoirs replied to the questionnaire sent to the veterinary service of all the 136 Italian slaughterhouse authorized to practice religious slaughter. A total of 77% of the abattoirs did not reply, and 5% of the abattoirs had an incorrect address. Results from the questionnaires may not be representative of the practices in the entire nation. However, they represent the first attempt to understand the scale of ritual slaughter practices in Italy.

Conventional slaughter (stunning before sticking) at the abattoirs surveyed was practiced for 95.3% of cattle, 90.37% of small ruminants, and 98.69% of poultry. Halal slaughter was performed for 4.27% of cattle, 5.47% of small ruminants, and 1.31% of poultry. Kosher slaughter was practiced for 0.43% of cattle, 4.16% of small ruminants, and almost 0% of poultry. For halal

<table>
<thead>
<tr>
<th>Species</th>
<th>Method</th>
<th>Restraint</th>
<th>Religious festival</th>
<th>No. of animals observed</th>
<th>No. of visits to the slaughterhouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovine</td>
<td>Halal</td>
<td>Upright</td>
<td>—</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>Ovine</td>
<td>Halal</td>
<td>Manually turned on his/her side</td>
<td>—</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Bovine</td>
<td>Halal</td>
<td>Mechanically turned on his/her side</td>
<td>—</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>Ovine*</td>
<td>Halal</td>
<td>Suspended before sticking</td>
<td>Festival of the Sacrifice of Abraham</td>
<td>79</td>
<td>1</td>
</tr>
<tr>
<td>Ovine*</td>
<td>Kosher</td>
<td>Suspended before sticking</td>
<td>—</td>
<td>114</td>
<td>1</td>
</tr>
<tr>
<td>Poultry</td>
<td>Kosher</td>
<td>Suspended before sticking</td>
<td>—</td>
<td>70</td>
<td>1</td>
</tr>
</tbody>
</table>

*At the same slaughterhouse.

Table 1. Spot-check visits data.
slaughter, 100% of cattle, 100% of poultry, and 94.1% of small ruminants were slaughtered without stunning; 5.9% of small ruminants were halal-slaughtered with prior, head-only electrical stunning, with an average voltage of 265 V, an average intensity of 2 A, and an average time of 4 s. Stunning after sticking was not practiced for religious slaughter for any category of animals. No animals were stunned for kosher slaughter.

The results for the restraint methods used for non-stunned, halal-slaughtered animals were as follows: upright position was used for 100% of cattle; shackled before sticking for 100% of poultry; 29.1% and 67.5% of small ruminants were turned on their backs on the floor and turned on their sides on the floor, respectively; and 1.2% and 2.2% of small ruminants were turned on their backs on a table and turned on their sides on a table, respectively. Stunning, small halal-slaughtered ruminants were turned on their sides on the floor before sticking. Kosher-slaughtered cattle were restrained in the upright position. Kosher-slaughtered small ruminants were shackled before sticking. Kosher-slaughtered poultry were manually restrained.

Questionnaires to Health Authority

The questionnaire sent to the health authority provided the following official data. The number of halal-slaughtered animals was calculated as a sum of the number of non-stunned and stunned before/after sticking animals for halal practice in 2006 in each Italian region. The number of halal-slaughtered cattle was 35,446 and represents 6.8% of all cattle slaughtered. The total number of halal-slaughtered small ruminants was 1,985, or 6.1% of all small ruminants slaughtered. Halal-slaughtered poultry totaled 600,832, representing 3.8% of all poultry slaughtered. In 2006, halal slaughter without stunning was practiced for 15.4%, 96.8%, and 100% of cattle, small ruminants, and poultry, respectively. In 2006, halal slaughter with stunning before sticking was practiced for 74.6%, 3.2%, and 0% of cattle, small ruminants, and poultry, respectively. In 2006, halal slaughter with stunning after sticking was practiced for 10%, 0%, and 0% of cattle, small ruminants, and poultry, respectively. Halal meat produced in Italy is not exported abroad. No official data was available for kosher practice.

Spot-Check Visits

The information reported is the result of observations carried out in Italy during implementation of the European Union project, Dialrel (www.dialrel.eu). The difficulty that arose in comparing slaughter methods in different abattoirs prevents the generalization of the results on the basis of the restraint system,
slaughter method, and species of animal. However, this study is the first systematic attempt to analyze the methods of religious slaughter from the point of view of animal welfare.

During halal slaughter, the average time (s) from the beginning of restraint to sticking was $97.5 \pm 56.6$ for cattle slaughtered upright; $115.8 \pm 86.8$ for mechanically turned cattle; $21.3 \pm 12.1$ for manually turned sheep/goats; and $57.2 \pm 19.1$ for suspended sheep/goats. During kosher slaughter, the average time (s) from the beginning of restraint to sticking was $228.8 \pm 59$ for suspended sheep/goats and $26.2 \pm 11.6$ for suspended poultry. The average time (s) from sticking to the next handling for halal slaughter was $93.3 \pm 23.9$ for cattle restrained upright; $144.1 \pm 21.6$ for mechanically turned cattle; $105.8 \pm 59.6$ for manually turned sheep/goats; and over $379.3 \pm 47.2$ for suspended sheep/goats. The average data during kosher slaughter were over $677.3 \pm 176.3$ s for suspended sheep/goats and $136.7 \pm 13.1$ s for suspended poultry (Figure 1).

Halal cattle slaughtered upright had an average of $25.2 \pm 9.4$ cuts during sticking, whereas halal-slaughtered cattle that had been mechanically turned had an average number of $7.4 \pm 2.5$. The manually turned, halal-slaughtered sheep/goats had an average number of $3 \pm 0.9$ cuts during sticking, suspended halal-slaughtered sheep/goats had $2.9 \pm 1.1$, suspended

![Figure 1. Average time of struggling (s) before and after sticking as recorded during spot-check visits.](image-url)
kosher-slaughtered sheep/goats had 1.25 ± 0.5, and suspended kosher-slaughtered poultry had 1 ± 0. The average time of struggling was calculated by summing each single time of coordinated movements shown by each animal and by calculating the mathematical average for the number of observed animals for such parameter. During halal slaughter, the average time (s) of struggling before sticking was equal to: 14.7 ± 16.5 cattle slaughtered upright; 31.3 ± 33.5 for mechanically turned cattle; 5.3 ± 2.36 for manually turned sheep/goats; 13.1 ± 7.6 for suspended poultry. During kosher slaughter, the average time (s) of struggling before sticking was 23.6 ± 11.7 for suspended sheep/goats and 6.1 ± 4.3 for suspended poultry. The average time (s) of struggling post-incision for halal slaughter was 12.4 ± 14.2 for cattle restrained in an upright position; 8.6 ± 5.5 for mechanically turned cattle; 5.8 ± 7.1 for manually turned sheep/goats; and 4.1 ± 4.3 for suspended sheep/goats. The average data for suspended, kosher-slaughtered sheep/goats were 4.2 ± 3.2 s, and for suspended poultry they were 21 ± 9.4 s (Figure 2). The estimated speed of the halal slaughter line was approximately 13 animals/hr both for upright and mechanically turned cattle, approximately 20 animals/hr for manually turned sheep/goats, and approximately 162.3 animals/hr for suspended sheep/goats. The estimated speed of the
kosher slaughter line was approximately 234.4 animals/hr for sheep/cattle suspended before incision and approximately 792 animals/hr for suspended poultry.

During halal slaughter, the average time (s) to turn the animals 90° was 5.5 ± 2.9 for sheep/goats turned manually and 10.3 ± 1.4 for cattle turned mechanically. The percentage of animals that showed excitement during incision was 23.3% of halal-slaughtered cattle restrained upright; 42.9% of mechanically turned, halal-slaughtered cattle; 33.3% of manually turned, halal-slaughtered sheep/goats; 34.2% of suspended, halal-slaughtered sheep/goats; 31.6% of suspended, kosher-slaughtered sheep/goats; and 7.1% of suspended, kosher-slaughtered poultry. An assessment of the length of time from incision to the loss of a reflex and rhythmic breathing was conducted. The observation of such parameters is often very difficult in practical situations, and therefore, the data are relevant only for a reduced percentage of animals in some abattoirs (Table 2).

<table>
<thead>
<tr>
<th>Loss of reflex</th>
<th>Species</th>
<th>Method</th>
<th>Restraint</th>
<th>Percentage of animals</th>
<th>Average</th>
<th>Median</th>
<th>Extremes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corneal</td>
<td>Bovine</td>
<td>Halal</td>
<td>Upright</td>
<td>0</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Ovine</td>
<td>Halal</td>
<td>Manually turned to recumbent position</td>
<td>33.3%</td>
<td>50</td>
<td>50</td>
<td>38-62</td>
</tr>
<tr>
<td></td>
<td>Bovine</td>
<td>Halal</td>
<td>Mechanically turned to recumbent position</td>
<td>7.1%</td>
<td>79</td>
<td>79</td>
<td>79</td>
</tr>
<tr>
<td>Rhythmic breathing</td>
<td>Bovine</td>
<td>Halal</td>
<td>Upright</td>
<td>90.0%</td>
<td>85.1</td>
<td>85</td>
<td>37-167</td>
</tr>
<tr>
<td></td>
<td>Ovine</td>
<td>Halal</td>
<td>Manually turned to recumbent position</td>
<td>83.3%</td>
<td>29</td>
<td>27</td>
<td>26-33</td>
</tr>
<tr>
<td></td>
<td>Bovine</td>
<td>Halal</td>
<td>Mechanically turned to recumbent position</td>
<td>92.9%</td>
<td>99.8</td>
<td>96</td>
<td>45-166</td>
</tr>
</tbody>
</table>

Table 2. Observations for corneal reflex and rhythmic breathing.
Discussion

Scientific Data

The average length of time from restraint up to sticking is the time used to place the animal in a suitable position for incision. The objective is, therefore, to provide an optimum cut and, from an animal welfare point of view, this should be the shortest possible time. The average time from the beginning of restraint to sticking for kosher-slaughtered sheep/goats that were suspended before incision depends at least partly on the position of the operator performing the incision. The operator was positioned further down the slaughter line from the hoist point of the sheep/goats, while the operator in the halal-slaughter method was closer to the hoist point. The intervals created by sharpening the blade used for incision determine a further increase in the average time for the kosher method, resulting in a deterioration of animal welfare and a reduction in the speed of the slaughter line, which comes to a complete halt (Cenci-Goga, 2009; Cenci-Goga et al., 2009; Cenci-Goga et al., 2010).

The analysis of the estimated speed of the religious slaughter line is important for an overall assessment. In this respect, the practice of suspending the animals before sticking proved more productive from the point of view of slaughter line speed (number animals/hr). For small ruminants, however, this proves to be a violation (Catanese et al., 2009) of the European Directive 93/119/EC (1993) recognized in Italy by the Legislative Decree 333/98 (Decreto Legislativo 333/98Attuazione Della Direttiva 93/119/CE Relativa Alla Protezione Degli Animali Durante la Macellazione o l’abbattimento, 1998). Some rabbinic committees have declared this practice to be unsuitable for the production of kosher meat from an animal welfare perspective (Dorff & Roth, 2002). The average number of cuts performed with the knife during incision could be correlated with the restraint system, which enabled the sticking operator easier handling. The difference in the average number of suspended, halal- and kosher-slaughtered sheep/goats could be explained by the skill of the operator performing the incision.

The number of cuts, together with the direction of incision, could be important in the animal’s perception of pain (Catanese & Cenci-Goga, 2010; Catanese et al., 2009). There is a possible intense surge of impulses when the nervous fibers are severed around the neck, however, this activity ceases rapidly (within 4 s) and the severed nerve endings lose sensitivity. The undamaged nerve endings and receptors exposed on the wound would be able to respond to stimulation, especially from traction and mechanical effects. If some nociceptors are activated around the edges of the wound, it depends on the way in which the wound itself is manipulated (Gregory, 2004).
Perception of pain at sticking has been the subject of controversial debate within the scientific community (Levinger, 1995; Rosen, 2004). However, a scientific method to assess the perception of pain (Gibson et al., 2007) has been proposed, and it has been tested in the case of slaughter with or without prior stunning and shows that in the latter case the animal feels pain (Gibson, Johnson, Murrell, Chambers, et al., 2009; Gibson, Johnson, Murrell, Hulls, et al., 2009; Gibson et al., 2009a, 2009b). The average time of struggling before sticking could be linked to the average time from the beginning of restraint to sticking and to the system of restraint.

The average time of struggling after sticking proved to be between 8.6 s and 12.4 s for cattle and between 4.1 s and 5.75 s for sheep/goats. The longer length of time for cattle compared to sheep/goats could be attributed to the presence of a pathway for cerebral blood circulation and anastomosis, which can be found in bovine species but not in ovine species (between branches of the vertebral arteries and carotid arteries; Gregory, 1998). The vertebral arteries are not severed during sticking.

Recently, the scientific community has used some clinical parameters as indicators of consciousness of the animal after slaughter without stunning (Gregory et al., 2010; von Holleben et al., 2010). Struggling after sticking, understood as the overall, coordinated movements, could be used as a clinical indicator of the animal’s consciousness (Catanese & Cenci-Goga, 2010). If the animal is conscious after sticking, he or she could feel a sense of suffocation due to the possible presence of blood in the respiratory tract (Gregory et al., 2009). The risk of prolonging the state of consciousness in cattle after sticking is linked to the production of false aneurysms occluding the carotid arteries at the point of incision (Gregory et al., 2007). The loss of corneal reflex and rhythmic breathing are indicative of the absence of any function by the structures of the medulla oblungata, and in the case of religious slaughter, the symptoms are indicative of anoxia/hypoxia and of partial or total ischemia due to insufficient or absent blood flow caused by bleeding.

Since these caudal structures are used for blood supply, as opposed to those responsible for the conscious perception of stimuli, it can be deduced that the more cranial structures are no longer functional, at least at the time in which the assessed reflexes are negative (Catanese & Cenci-Goga, 2010). Assessment of the negativity of these reflexes is, therefore, used as an indication of unconsciousness of the animals. A positive reflex does not, nevertheless, indicate consciousness, as it only indicates the functioning of the structures of the medulla oblungata and not of the structures responsible for consciousness. The length of time from sticking up to the following handling plays an important part in contributing to the possible risk of the animal being conscious.
for a specified time after incision. It is advisable, therefore, to adhere to the
times established by the scientific community (EFSA, European Food Safety
Authority, 2004).

Contextualization with Data from the Dialrel Project

The aforementioned Dialrel project investigated current practices in other
European Union countries. The results of these surveys are merely examples of
current practices and may not constitute a complete representation of the
halal and shechita slaughter practices performed in the countries studied.
The simple monitoring of practices did not include the onsite evaluation of
the quality of performance, and a limited number of animals were assessed
at the various slaughter plants. The results have to be considered in light of
these conditions. Taking this into account, some important components were
revealed and possible interpretations are presented.

For cattle slaughtered without stunning, the restraint to cut interval varied
a great deal among the restraint systems used. These differences between
restraint systems could be due to differences in animal handling, the head
holder, the design of the restraining system, the weight of the animal, and the
degree of restraint (Grandin, 1998). In all the restraint systems assessed, the
animals struggled and vocalized. However, turning the animals on their sides
registered the highest level of struggling and vocalization compared to animals
restrained in an upright position or turned on their backs. The interval between
restraint and cut was also the highest in the former case, and therefore, a cor-
relation between both factors could be expected.

When we compared animals in the upright position with those turned on
their backs, we found that the animals in the upright position struggled more,
whereas those turned on their backs were more vocal (Velarde et al., 2013).
For cattle slaughtered with stunning, the intervals between restraint and stun
and stun and cut varied among the restraint systems. These variations depended
on the restraint and stunning systems used, the size of the animals, and the
person involved in the process. However, according to the spot visits carried
out in Europe (Velarde et al., 2013), the lowest interval from restraint to stun
occurred when the animals were restrained in an upright position, and the
highest occurred when they were turned on their backs. Struggling was the
only behavior present in the animals during restraint. The percentage of ani-
mals that struggled was higher when they were turned on their backs com-
pared with those in the upright position or turned on their sides. This finding
agrees with Dunn (1990).
For sheep slaughtered without stunning, the interval from restraint to cut was very different among the restraint systems, the highest being the interval recorded in those animals hoisted before neck cutting and the lowest in those animals manually turned on their sides. These intervals are related not only to the restraint method used, but also to the person who performed the cut. Badly trained or incompetent persons involved in the sticking process can increase the interval from restraint to cut, thus influencing animal welfare. Higher incidences of struggling were present in the animals hoisted before sticking and turned manually on their sides (Velarde et al., 2013). For sheep slaughtered with stunning, the interval from restraint to stun was not influenced by the restraint methods or the stunning system used in the abattoirs, as in European Union abattoirs.

The animals slaughtered in the upright position struggled, but those manually turned on their sides did not (Velarde et al., 2013). Similar observations were also noticed for poultry in European Union abattoirs. In fact, the interval from stun to cut was influenced by the stunning system. This interval was longer in poultry stunned with gas than in poultry stunned in an electrical water bath. In both stunning systems, animals bled well. However, the loss of consciousness was affected by the stunning system. None of the animals stunned with gas showed rhythmic breathing after stunning. However, in animals stunned electrically, 15% of the animals showed this reflex at the time of sticking and 5% of them showed it 30 s later. The high percentage of rhythmic breathing after electrical stunning indicates that the settings of the stunning system or the interval between the end of the current flow and the cut might have been suboptimal in the assessed plants (Velarde et al., 2013).

Animal Welfare for Farm Animals

Before attempting to see whether any guidelines can be suggested as to when it is ethically acceptable to slaughter a still conscious animal, we need to discuss the question of how breeding and transportation may alter the essence of an animal. The absence of any specific, legal provisions for animal welfare in the context of European Union policies has been criticized in the past, especially in the context of the high-profile campaigns and the role of the European Community (EC) legislation concerning the transport of animals. Although the EC Treaty (the Treaty of Rome, 1957) was not actually amended to include such provision, a somewhat ambivalent Protocol was annexed to it. This Protocol states that the EC and the Member States “shall pay full regard to the welfare requirements of animals” while also respecting the law and customs of Member States “relating to particular religious rites, cultural traditions and

The Treaty of Rome—which established the European Economic Community (EEC) and the European Atomic Energy Community (EAEC)—was signed by France, Germany, Italy, Belgium, The Netherlands, and Luxembourg on March 25th, 1957. Although the EEC and EAEC remained separate entities, during the 1960s they merged into one organizational structure called the EC, which was the precursor of today’s European Union. Animal welfare is concerned with the humane treatment of animals under our care. It is the conviction that all animals should be treated in such a way that they do not suffer unnecessarily. Animal rights views, on the other hand, attribute rights to animals and believe that they are worthy of ethical consideration as to how humans interact with them.

Examples of animal welfare positions are the European Union Directives on transport (Council Directive 91/628/EEC, 1991; Council Directive 95/29/EC of 29 June 1995 Amending Directive 90/628/EEC Concerning the Protection of Animals During Transport, 1995; Regolamento (CE) N. 1/2005 del Consiglio del 22 Dicembre 2004 Sulla Protezione Degli Animali Durante il Trasporto e le Operazioni Correlate che Modifica le Direttive 64/432/CEE e 93/119/CE e il Regolamento (CE) n. 1255/97, 2005). The concept of animal rights is that sentient animals, because they are capable of valuing their own lives, should be entitled to possess their own flesh, and therefore, deserve rights to protect their autonomy. The animal rights view rejects the concept that animals are commodities or property that exist to serve humans. Many animal rights and animal welfare advocates make a clear distinction between the two philosophies.

Animal rights advocates argue that the animal welfare position (advocating for the improvement in the condition of animals, but without abolishing animal use) is logically inconsistent and ethically unacceptable. Most supporters of animal welfare argue that the animal rights view is extreme. They do not advocate the elimination of all animal use; rather, they advocate a more humane and compassionate use of animals for food or companionship. However, there are also some animal rights groups that support animal welfare measures in the short-term to alleviate animal suffering until all animal use is ended. Other advocates of animal rights see animal welfare policies as hindering animals rights, because they offer a justification for the continuous exploitation of animals by humans (Francione & Garner, 2010).

Ethicist David Sztybel distinguishes six different types of animal welfare views (Sztybel, 2004):
1. animal exploiters animal welfare: the reassurance by those who use animals that they already treat animals well;
2. common-sense animal welfare: the average person’s concern to avoid cruelty and be kind to animals;
3. humane animal welfare: a more principled opposition to cruelty to animals, which does not reject most practices of animal use (except perhaps the use of animals for fur and sport);
4. animal liberationist animal welfare: a philosophy championed by Peter Singer (Singer & Mason, 2006; Singer, 2001), which strives to minimize suffering, but accepts some animal use for the greater good, such as the use of animals in certain medical research;
5. new welfarism: a term coined by Gary Francione, a philosopher who does not believe that new welfarism (wordiQ, 2004) refers to the belief that measures to improve the lot of animals used by humans will lead to the abolition of animal use; and
6. animal welfare/animal rights views that do not distinguish between the two.

Animal welfare principles are codified by positive law in many nations, but animal rights are not recognized in any of them. The concept of animal rights is often confused with animal welfare, which is the philosophy that takes animal suffering into account. Supporters of animal welfare range from organizations profiting from the exploitation of animals while claiming to be concerned for their welfare, to radical supporters of animal welfare, such as Peter Singer. While Singer is often associated with the animal rights movement, and many animal rights supporters agree with much of Singer’s work, his philosophy does not rely on a concept of rights. Rather, Singer’s radical animal welfare philosophy is based on ethical utilitarianism, which takes into account the capacity of sentient animals to suffer, and thus promotes the concept of animal liberation and veganism as logical outcomes of this consideration (wordiQ, 2004).

The animal rights philosophy does not necessarily maintain that human and nonhuman animals have equal moral standing. However, animal rights supporters do believe that because animals are capable of valuing their own lives, regardless of whether humans have a use for them or not, then they should be afforded the right to live and to decide upon their own lives. This means that, according to a rights view, any human or human institution that commoditizes animals for food, entertainment, clothing, scientific testing, or any other purpose infringes upon the rights of the animal to possess his or her
own being. Thus, the property status of animals, which is used to maintain the use of animals for human purposes, is unethical because it ignores the rights of animals.

Is the Right of Not Inflicting “Unnecessary Suffering” Foreseen for Religious Slaughter?

It is often held by philosophers that the notion of “rights,” whether applied to animals or not, is problematic. In fact, the word is used in different contexts, and it has been generally linked with the notion of legal rights. Moreover, rights are commonly taken to be correlated with duties, whereas many philosophers follow Kant in rejecting the notion of duties toward animals. We can bypass the question and focus on the extent to which our use of animals is often “speciesist” (Reiss & Straughan, 1996). It was the Australian philosopher, Peter Singer, who in 1975 produced the first sustained argument that most humans are guilty of speciesism. These sentences taken from Reiss and Straughan (1996) can be enlightening:

...humans belong to a different biological species from, say, chimpanzees, dogs, farm animals and laboratory mice; we do not have the right to treat such species merely as we choose and for our own ends. Think of the conditions we normally require before humans are permitted to be used as research subjects. We require that two conditions be met: first, that the participating individual gives their informed consent; secondly, that there is no intent to do harm to that individual. The second of these conditions is inviolate. The first can only be overturned when patients are unable to give their consent, for instance because they are babies or in a coma, when it can be given on their behalf.... We can also note that if one adopts solely the criterion of suffering to decide whether or not an organism should be used for human ends, not only would the use of most animals for medical research cease, but a case could be made, abhorrent as it sounds, for mentally handicapped new-born human infants to be used for such research, on the grounds that such infants are arguably closer to self-conscious sentient people than are the laboratory animals presently used. (pp. 180-181)

Several authors have raised the following issue: “...being of the human species may be a sufficient condition of being awarded enhanced moral status. Possessing the nature of a rational self-conscious creature may be sufficient for being awarded this status even though this nature may be impaired or underdeveloped in the individual case” (Grayson, 2000). There is still considerable controversy both over whether animals have rights and whether animals are qualitatively different from humans in some way that allows us to treat them differently.

The complications regarding ritual slaughtering have grown with the addition of intercultural aspects that need to be dealt with in order to encourage
the desirable conditions for different communities to be able to integrate and live together. In the areas where it is practiced more frequently, ritual slaughtering presents a moral problem within the framework of a wider, ever-increasing problem of the “exploitation of animals.”

Ritual slaughtering brings a fundamental problem to our attention; that is, whether the killing of an animal for human nutrition should be considered legitimate. Our present social and economic organization tends to deny this problem, even though it is at the core of a specific area of bioethics, the “ethics of bio-culture,” dealing with the moral issues regarding the way humans handle their relations with other nonhuman beings.

After losing the direct relationship between man and farm animals that characterized our past and that in some way “humanized” the killing of an animal, slaughtering for nutritional purposes has been depersonalized and organized around procedures that are largely driven by economic and industrial considerations. This diminishes the practical effect of those provisions, aimed at protecting animal welfare during such procedures and so deserving of our appreciation, but will hopefully be enforced increasingly more often and more widely.

In ritual slaughtering, the killing of the animal is seen as a sacred, very serious and solemn act. It is not an ordinary, trivial act that can be performed without thinking about the fact that it amounts to killing another living being. Within a religious context, slaughtering is a reminder for human beings that they cannot arbitrarily decide upon the fate of other living creatures. They are simply allowed to use them within a specific perspective which, for both religions, is the reference to God. This is precisely the profound meaning of the ritualized slaughtering or the blessings and rituals that have to accompany it.

It is appropriate to wonder to what extent modern industrial slaughtering methods have changed, reduced, and even misconstrued the original meaning of ritual slaughtering. However, its ethical value cannot be lost. The sometimes extremely detailed care paid to the different aspects of ritual slaughtering also has another meaning, which is to reduce animal suffering. Emphasis is put on the sharpness of the blade that severs the blood vessels, the way this excision has to be performed, and the technical expertise of the person in charge, so that the animal dies as quickly and as rapidly as possible. Clearly, these rules should be considered in the light of the knowledge and techniques available when they were first created.

As a result, we may question whether progress in such knowledge and techniques calls for a revision of some of these rules without affecting the profound, essential meaning of ritual slaughtering. In any case, it is worth stressing that in ritual slaughtering, there is no intention of cruelty towards animals: on the contrary, its target has always been to avoid any useless suffering. All these
elements demonstrate that for the Islamic and Jewish culture and religion, ritual slaughtering is much more than a mere dietary practice and constitutes a true element of worship.

In any event, it is appropriate to stress that any kind of intentional cruelty towards animals is absent in ritual slaughtering. On the contrary, it has aimed to eliminate any unnecessary suffering since it first began.

There are three fundamental steps to be considered:

1. First, ritual slaughtering does not exceed the aforementioned limits, unless it can be proven that suffering brought to ritually slaughtered animals is greater than that suffered by animals killed according to other methods permitted by our legal system.

   There is no sure method to measure the pain of animals, and this is why no firm conclusion can be drawn. Based on scientific studies in this field, most authors believe (even though a minority of researchers is of a different opinion) that slaughtering after animal stunning causes less pain than slaughtering without prior stunning. Italian legislation is based on the assumption that, according to the pattern outlined by the European Union directives, stunning is generally imposed despite a number of exceptions (including ritual slaughtering, involving a rather small percentage of animals slaughtered without prior stunning).

2. Second, if we put forward the hypothesis that ritual slaughtering implies more suffering, we need to quantify this excess suffering experienced by the animal, which is part of a sometimes very long chain of pain.

   While suffering is always significant from an ethical viewpoint, we cannot disregard the findings of scientific research however inconsistent they may be. The time difference in terms of the suffering of an animal slaughtered with or without stunning is a matter of seconds. Nonetheless, however short this suffering time may be, it may have a highly significant, bioethical value since it preludes death. The restraint of animals sent to slaughter with no previous stunning requires special mechanical operations, which are a cause of further stress. Precisely because suffering is inherent in slaughtering, each increment of this pain represents an additional burden that should be avoided in the name of the bioethical principle known as non-maleficence; that is, the duty not to cause any intentional harm to any “moral patient.”

   To quote from the bioethics and veterinary science document (Giovagnoli, 2003): “You cannot claim you are truly taking care of someone unless you are prepared to worry and personally commit to reducing their suffering as much as possible, and promoting their welfare, especially when the individuals involved do not know how or cannot do it themselves.”
3. Finally, if you believe that excess suffering of an animal due to the absence of stunning is significant, you also need to evaluate whether it is acceptable to safeguard religious freedom in the name of slaughter. In other words, this will involve a comparative process to decide whether it is acceptable to inflict pain on animals for either sport or entertainment or in the pursuit of high profile, scientific objectives.

Since the particular constitutional safeguard of religious freedom recognized by our system implies that ritual slaughtering is legally acceptable, it can be concluded that it is bioethically acceptable, provided that any related practices that may minimize animal suffering do not conflict with the very ritual of slaughtering.

**Conclusion: Ritual Slaughter and Animal Welfare—A Possible Conciliation?**

The conclusion reached in the previous paragraph can be taken further. In fact, everyone should manifest their own religion in ways that have the minimum negative impact possible on every other living being and, more generally, on the human habitat. This duty persists even when, by comparing the different principles involved, a specific manifestation of religious faith is legally permitted.

In ritual slaughtering, the key issue seems to be the lack of animal stunning and the restraint techniques employed. As previously mentioned, the legislation in all European Union member states assumes that an animal will suffer less if he or she is made unconscious prior to slaughtering. The bioethical principles of precaution and responsibility impose consideration of this possibility.

Therefore, we can conclude, in agreement with the Italian Comitato Nazionale per la Bioetica (National Committee for Bioethics) (Comitato Nazionale per la Bioetica. Macellazioni Rituali e Sofferenza Animale, 2005), that:

1. Observations and research will strike a balance between religious practices and the scientific minimization of animal suffering. In particular, it is appropriate to specify the notion of animal integrity in every religion and to distinguish it from mere animal vigilance. In fact, based on previous experiences in other European regions, it may be possible to identify techniques that limit the state of animal vigilance without causing any injury that may impair its integrity;
2. More research is developed on possible, religiously acceptable stunning, as appears to be happening already;
3. The legitimate, economic needs of abattoirs do not prejudice their observance of the time and techniques required for a correct execution of slaughtering and of ritual slaughtering in particular. The need to avoid the unnecessary suffering of animals, the need to observe basic health and hygiene rules, and the need to not offend people’s feelings have led to a general rejection of spontaneous and uncontrolled ritual slaughtering, performed in unauthorized abattoirs, without adequate veterinary inspection.

The problems arising in countries where Muslim immigration is more substantial call for an urgent creation of specific, ritual-slaughtering facilities to accommodate the large amount of slaughtering that is done during certain religious festivities; for example, slaughter houses could, as an exception, remain open on those occasions. However, we must not forget that the spontaneous, uncontrolled slaughtering of animals is not practiced exclusively by the Muslim community. It is performed on multiple occasions on both religious and secular grounds. This is why any observation on ritual slaughtering should be the starting point for a broader debate on a more responsible relationship between humans and animals.

The issue of the higher economic costs for consumers implied by a correct, bioethical approach of this relationship needs to be addressed (Miele & Evans, 2010). It is the entire legislation, and especially its enforcement of animal farming for slaughter purposes, which raises doubts, requiring structural interventions to respect the aforementioned ethics of care. In fact, the conditions that are an increasing part of the industrial production process and under which these animals are forced to live as they mature, the way they are taken to the slaughter house, and the way slaughtering is performed, are often less than ideal in terms of respect shown to animals. Veterinary research can focus its attention on the separate notion of animal integrity, which is specific for each religion, and distinguish it from the notion of vigilance.

Eating meat inevitably means the killing of an animal, but this does not necessarily have to involve a complete awareness of the events from loading the animal in the breeding farm to slaughtering. A condition of integrity at the time of bleeding is required by the communities that practice ritual slaughtering, and this means that if death does not occur as a result of bleeding, once the conditions that induce loss of consciousness are met, the animal should recover its normal life. We can, therefore, work on conditions of integrity, which satisfy the possibility of recovery to a normal life after stunning.

Research should give priority to the study, implementation, and introduction of new methods that can make an animal unaware of the moment of death and of the preceding phases, yet not damage his or her integrity.
Creating innovative and less stressful structures, with shorter transport times or even the absence of transport thanks to the use of mobile slaughter containers, and using calming pheromones or even drugs that do not have negative effects on meat consumption, could become future practice. All these elements, once studied and produced in synergy with science and ethics, could reduce the moral problems of the killing of animals for food purposes and alleviate the social tensions between different communities.

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