

Religious and Non-Religious Slaughter

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Dialog on Religious Slaughter

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The Importance of Religious Slaughter

Obtaining meat by means of religious slaughter is an integral part of being an observant Jew or Muslim for many practitioners of these religions. Although some Jews and Muslims may opt for a vegetarian diet, and some are observant of food laws to varying degrees, major religious events and many other meals often center around a meal involving meat.

**The loss of the right to slaughter meat is viewed
as a direct attack on the religion – as
highlighted by Nazi Germany's first
restrictions on Jews being the prohibition of
religious slaughter.**

Responsibilities

The scientific/engineering community needs to work together with the Jewish and Muslim Communities to make sure that the animal welfare during religious slaughter is done in the best possible way consistent with religious requirements as determined by the local religious leadership. Religious diversity both within a religious community and of other religious communities deserves to be respected as their needs are protected by the European Union. The religious community needs to organize themselves and then take on responsibility for assuring the best possible religious slaughter procedures are used.

The Bottom Line

1. The animal welfare of religious slaughter needs to be improved consistent with and respectful of all religious rules. The religious community needs to take on this responsibility with help from the scientific community that has their best interests in mind. The scientists must maintain credibility.

2. Real science and not agenda science that manipulates the data is needed to actually evaluate all slaughter systems. As a scientist I am disappointed at how little science has been done well.

What is Wrong With The Science?

All stunned slaughter is the same so that all research data from all forms of mechanical, gas and electrical stunning can be combined.

All un-stunned slaughter is the same so that all research data from all forms of religious slaughter, e.g., shackle and hoist; shackle, hoist and cast; upright slaughter pen; rotating slaughter pen; high speed V restrainers; and high speed double rail system can be combined.

3. Unless the best slaughter systems available are studied when they are working properly, the science simply points out problems with the system studied and cannot be generalized. Such studies do help with identifying specific improvements but are NOT generalizable.

4. There must be standardized methods and terminology for evaluating and reporting all slaughter methods.

Cultural and religious groups expect to be able to access the meats they desire in accordance with their practices and without being forced to accept onerous or prejudicial labels.

Improving Religious Slaughter

What are some of the issues that need to be considered when looking at and evaluating religious slaughter (Shechita for kosher and Zabiha for halal) and how do we as responsible scientists help the religious leadership in the Jewish and Muslim communities to do the best possible job?

Pre-Slaughter Handling

Pre-slaughter handling needs to be optimized for all slaughter facilities – this includes management attitude, facility and equipment design, maintenance, worker training and animal selection.

Calm animals are needed for religious slaughter – how do we assure that this occurs? Some animals may not be appropriate for use in religious slaughter. How do we identify the appropriate animals ahead of time?

What equipment and procedures work best to assure that calm animals are presented to the religious slaughter person?

The Slaughter Man

How do we improve the slaughter man's "scientific" understanding of animal welfare and animal handling

How do we as scientists help the religious community to respectfully train their slaughter men to incorporate changes in his practices that are totally consistent with the religious requirements and take into account the best available scientific knowledge? We need to work closely with religious leaders so this is done right.

Improving the Cut

It appears that a more aggressive cut closer to the jaw leads to more rapid insensibility, i.e., between the thyroid cartilage and the cricoid cartilage.

How is a good cut measured physically? Possible approach: Measure the number of strokes and check the cut afterwards: where were the major pipes cut and how “deep” was the cut of each pipe. Time to collapse. Have these ever been carefully tracked and correlated with animal responses? Is there any reported literature that gives that information other than Dr. Grandin’s observations on this issue?

Special Muslim Slaughter Issue

Because all adult Muslims can slaughter, there is a need for us as scientists to work with many more people who are operating on a much smaller scale of slaughter

There is a need for a more community wide education in animal handling and proper slaughter techniques.

A Possible First Step

As one example of how to approach the issue, we have prepared posters (a very limited first step) to begin this educational process. They are currently available in English, Arabic, Urdu, Persian, Malay, Somali, and Spanish [a sample poster will be shown later].

Upright versus Upside-Down Positioning of the Animal for Religious Slaughter

**From the American Meat Institute (AMI)
Recommended Animal Handling Guidelines for
2005:**

**[Animals] that are ritually slaughtered without
prior stunning should be restrained in a
comfortable upright position. ... In a very
limited number of glatt Kosher plants in the
United States and more commonly in South**

AMI - II

America and Europe, restrainers that position animals on their backs are used. For information about these systems and evaluating animal welfare, refer to www.grandin.com (Ritual Slaughter Section).

Refractory Period

When an animal is turned upside down in a good piece of equipment (comfortable, not noisy, proper lighting, etc.), then it appears that there is about a 10 second refractory period, according to Dr.

Grandin, where the animal doesn't realize what has happened to it and remains calm.

Is this scientifically correct? Can we better document this affect?

If so, the throat cut should be made immediately after the head is restrained (within 10 seconds).

...Need to take advantage of the refractory period

Neck Washing

If necessary, a work person needs to wash the neck.

Would there be an advantage to washing the neck before slaughter for both kosher and halal slaughter so that especially with upside down slaughter the time to the start of slaughter is minimized? Would DialRel and the EU support such research?

Auditing

When designing any official audit standard after the appropriate research has been done, it is important to be sure that the audit is explained to the religious folks and that nothing in the standard or in the auditors actions would appear to disturb/distract or rush a slaughter man so that the quality of the workmanship goes down. It is also important that audits be done with the support and involvement of the religious leadership.

AMI - III

Cattle vocalization percentages should be 5% or less of the cattle in the crowd pen, lead up chute and restraint device. A slightly higher vocalization percentage (5% vs 3%) is acceptable for religious slaughter because the animal must be held longer in the restraint device compared to conventional slaughter. A 5% or less vocalization score can be reasonably achieved.... Animals must be completely insensible before any other slaughter procedure is performed (e.g.,

AMI - IV

shackling, hoisting, cutting, etc.) If the animal does not become insensible, it should be stunned with a captive bolt gun or other apparatus and designated as non-Kosher [non-Glatt] or non-Halal if required by the religious authorities.

Has any of the research on religious slaughter other than Dr. Grandin's reported the "vocalization rate" at the time of the study in the facility?

The Slaughter Knife

The knife needs to be designed to specifically optimize the process.

Ideally it should be at least twice the length as the diameter of the animals neck and quite “straight”. [An example will be shown later.]

It must be extremely sharp (an important part of the training of slaughter men needs to focus on knife sharpening – and this is absolutely critical for good religious slaughter).

Knife needs to be checked before and after EVERY slaughter. Temple has suggested a “paper” cutting test – holding a loose piece of paper will it cut the paper (knife needs to be dry)

Number of Strokes

As long as it is continuous it can be considered acceptable in both religions, however, Dr. Grandin has shown that a more aggressive slaughter with fewer strokes leads to more animals becoming insensible quickly. This requires working with the slaughter men and the religious leadership on this issue.

Ergometrics: Can the handles of the knife be better designed to help the slaughter men – different knives for upright and upside-down slaughter?

Endorphins

Good religious slaughter may actually be more humane than “humane slaughter”?

The concept is that no pain occurs with a very sharp cut [this requires better sharpening than that from a mechanical knife sharpener!] The release of endorphins occurs if the animal is unstressed. Animals die on a “high” [like “runner’s high].

Postulate: Process is only successful if the animal goes into slaughter unstressed.

This needs a lot of critical research although Dr. Grandin has observed this behaviorally (See quote later).

Time to Collapse

A good system needs to get the animal both unconscious and insensible properly and quickly. (A consensus is needed, i.e., this is really a policy issue and not scientific issue.) It seems to be that 30 seconds is the appropriate maximum acceptable time for visible unconsciousness, i.e., collapse of the animal. In a good system Temple has observed that the average is 17 sec and the longest time was 33 sec. Behavioral observations should also suggest that the animal during this period is not struggling!

There is a need to then agree to stun any animal that is not collapsed after that agreed upon time or if it is visibly stressed even if the animal becomes unacceptable for kosher or halal.

At least one “Temple Grandin approved plant” is using this standard and routinely getting over 90% of the cattle to collapse in that time (about 30 sec). [Can they do better?]

Has anyone done any scientific studies in this model plant to collect key baseline data as to where we are with the best religious slaughter to use as a goal for other plants?

Is There an Agenda?

Is the agenda of much of the scientific work that has been published really to do good science, i.e., trying to improve the slaughter consistent with people's religious requirements or is it targeted to eliminate religious slaughter and religious freedom in the guise of scientific animal welfare assessments? Given the quality of some of the science, I worry as a scientist that the latter may, unfortunately, be the situation.

The Distinctions We are Making

All slaughter systems (secular and religious) should be audited and quantitative measurements made on them. The standards need to be worked out in a real dialog between the scientific community including scientists from many fields outside of the narrow animal welfare community, especially including those working in the meat industry and for the religious slaughter part including those within the religious communities. If there are real problems identified in any of these systems, the effort needs to be focused on correcting the problems in an appropriate manner. Incentives to help both make improvements and to adopt newer, better systems are needed.

However, such systems, particularly the ones that are not working properly, cannot and should not be used to judge the inherent potential of any slaughter system to humanely slaughter animals, including religious systems. Until the best possible version is evaluated scientifically, the true potential of a slaughter system CANNOT be evaluated. (And in the future with new systems, the evaluations will be needed again).

And the definition of humane slaughter needs to be inclusive enough to respect religious slaughter if progress is to be made.

Critical Analysis of Religious Slaughter

The impact of the actual religious slaughter needs to be separated from a number of extremely important issues that are not “religious requirements” but which confound the research results, e.g., the people, the facility, the equipment, and the non-slaughter stress of the animals need to be optimized before looking at the impact of the religious slaughter procedure.

Philosophy and Morality

Philosophy, like morality itself, is first and last an exercise in reason – the ideas that should come out on top are the ones that have the best reasons on their sides.

Rachels, The Elements of Moral Philosophy, 1999.

p. Xii

Religious Community Differences

There are different views within the Muslim community as to how to slaughter. Some will permit light stunning others will not. Some will permit upright slaughter others will not. (No normative Jewish authorities will accept any stunning.) Some fervently Orthodox rabbis and I believe some Muslim clerics require upside down slaughter.

We need to accept these differences, work with those who hold those beliefs and move on to do a better job of all forms of slaughter.

Statement by Dr. Temple Grandin

“Recently, I participated in a ritual kosher slaughter -- in this ritual, the way it was meant to be done, I must say. This was at a plant where the management really understood the importance and significance of what they were doing, and communicated this to their employees -- and to the animals as well, I believe. As each steer entered the kosher restraining box, I manipulated the controls to gently position the animal.

After some practice, I learned that the animals would stand quietly and not resist being restrained if I eased the chin-lift up under the animal's chin. Jerking the controls or causing the apparatus to make sudden movements made the cattle jump... Some cattle were held so loosely by the head-holder and the rear pusher gate that they could easily have pulled away from the rabbi's knife. *I was relieved and surprised to discover that the animals don't even feel the super-sharp blade as it touches their skin. They made no attempt to pull away. I felt peaceful and calm.*"
(Regenstein and Grandin 1992)

Problem Equipment

Certain practices (not religious slaughter itself) may need to be banned, e.g., shackling and hoisting, and the Weinberg pen are two possible examples. Ideally with dialog and with respect, the religious communities will support these changes. (Many already do.)

My understanding is that Europe will shortly prohibit the use of shackle and hoisting, and of upside down slaughter and this has been accepted by the critical stakeholders in the EU and that meat from overseas violating this requirement will not be accepted.

A Reminder

With normal stunning procedures – if the animal is not stunned on the first try, it is extremely stressful. Sometimes it takes as many as 6 tries to eventually stun the animal. (Now I'm using worst case data!) The new US AMI (American Meat Institute) expectation, as also accepted by the FMI (Food Marketing Institute, supermarkets) / NCCR (National Council of Chain Restaurants) Animal Welfare Technical Committee still permits 5% of the animals to be “missed” on the first try! (And most animal activist organizations in the US accept this standard.)

Quality of the Current Research Reports

Can one really determine how the religious slaughter was done reading the literature?

When the investigator answers the question with “I don’t know”, what does that suggest?

I would suggest that the literature studies do not meet the standard of sufficient information so that the experiment can be repeated or the data cleanly interpreted, which is surprising for such important questions that have taken up so much research effort and expense – if objective scientific answers were really desired? For scientific credibility we need to do better than that!

The most recent work (5 papers) reported in the NZ Veterinary Journal is an example of such a limited piece of work. It has many serious limitations and reflects in my mind work that set out to prove something at all costs and as a scientist I'm embarrassed by that work. A list of some of those concerns is shown below:

1. The knife is rather short -- only 10 inches and the actual slaughter and the "pen" is poorly described. The special equipment is not shown. What about details about the cutting – how many strokes and where on the neck? The head holder also doesn't seem to be doing the job right – too much movement? The training of the slaughter man is not given. Like so many of these papers, it does not give enough details about the religious slaughter (or un-stunned slaughter as they call it) to determine what really is happening, which violates the basic scientific principle that the work must be repeatable by others! (And if it is about un-stunned slaughter unrelated to religious slaughter why is religious slaughter mentioned so frequently?)

2. Why not use the back of the knife for the sham cut -- could give at least some pressure and seems more comparable. The whole issue of this “sham cut” feels more like a negative control, i.e., what happens with minimal pressure. How about the impact of a lot of pressure with no cutting?

The difference between the broomstick and the back of the knife would be one really interesting piece of data.

And who sharpens a knife with a knife sharpener?

3. Why is the heart rate so high for the first paper and much lower in the other two papers? It suggests that these animals were more stressed -- why should that be the case if the animals were not conscious? This is often observed for the convulsions after slaughter regardless of method. It also seems that the normal "sticking" of the animal after non-penetrating slaughter was never done and would be an important control.

4. They actually admit in one of the papers that the halothane might have an effect on something they see -- my physiology is not good enough to follow all those arguments but that does raise the question of whether that interferes with appropriate data collection.

5. The papers are VERY sloppy about how the words unconsciousness, insensibility, and undoubted insensibility are used. That is probably a key to the distortion of the discussion. The papers never actually establish an unconsciousness point, where it is accepted that the animal would not feel pain. According to the EU and common vocabulary, when the animal drops, it is unconscious and doesn't feel pain. And the papers also seem to reference a lot of the bad religious slaughter for the times that they deal with time to insensibility. Words like suffering are also thrown in to add a little drama. And what exactly is psychological shock? And a lot of "wishy-washy" words, like "probably, likely, possibly" that leave one uncomfortable with the strong conclusions being stated by the authors publicly.

6. The whole business of occlusions seems to be muddled. Even when they occur according to these authors, they seem to have no effect.

Temple suggests that what is needed is the correlation of aspiration into the trachea and the time to drop. This is a priority area of research needed, particularly for cattle.

7. The papers talk about possible errors in using the non-penetrating stunner -- what kind of experimentalists are they if they invoke "incompetence" and have a 28% failure rate of the stunner?

From a colleague:

I have yet to complete a detailed analysis of their EEG analysis but even at this stage, I would add ...that if you try to pursue the data points for single animals, especially in the attached paper, some of them have results that run in completely opposite directions and there is great overlap between the groups. I have major doubts about the statistical validity of their separability. Second, I believe that there is a considerable difference likely between the groups for movement artifacts which could per se also generate many of the differences in what is anyway a non-specific marker.

Post-Slaughter Stunning

As a matter of record: The post slaughter stunning of cattle is routine in the US for all non-Glatt slaughter. Rabbi Stern, who was in charge at Hebrew National (a major US kosher meat brand), has written a responsa to defend this practice. His credentials as an Orthodox rabbi are in order, but it was never accepted as normative for those who use Glatt kosher meat. This appears to remain the case in both Europe and North America.

Small Scale Religious Slaughter

Halal Knife for Sheep and Goats



12 inches for animals under 250 pounds

Religious slaughter can be done humanely with zero failures and without the additional pain of stunning.



www.spiritofhumane.com



Humane (Halal) On-Farm Slaughter of Sheep and Goats



حداقل استرس در هنگام گرفتن حیوان. اجتناب از حرکات ناگهانی و سر و صدا. هدایت حیوان به محوطه ای کوچک و گرفتن حیوان به آرامی (مرحله 1). انتقال سریع حیوان به محل کشتار. چنانچه جثه حیوان به اندازه کافی کوچک باشد، با قرار دادن سر در زیر یک بازو و قرار دادن بازوی دیگر در ناحیه زیر شکم از بین دو پا حیوان حمل شود (مرحله 2الف).

Currently available in English, Arabic, Persian, Urdu, Somali, Malay, Turkish and Spanish. English available at end of this PowerPoint set.



برای حیوانات بزرگتر، یک نفر چانه حیوان را رو به بالا نگه داشته و شخص دیگری از پشت او را به حرکت و می دارد (مرحله 2ب). چنانچه شخص تنها باشد، می تواند سر و دست حیوان را از زمین بلند کرده دام را به حرکت به جلو و دارد (مرحله 2ج). ممکن است حیوان از میان مجاری خاص به محل کشتار هدایت شود (مرحله 2د). بر روی یک ریل دو طرفه قرار داده شود (مرحله 3الف) و یا دست و پای آن به نحوی گرفته شود که حیوان و یا افراد راحت باشد (مرحله 3ب).



یک چاقوی کاملاً تیز با لبه کشیده که طول آن دو برابر قطر گردن حیوان می باشد برای انجام کشتار الزامی است. چنانچه چاقو مجهز به پوششی برای دست امنیت بیشتری خواهد داشت (مراجعه www.dexter-russell.com) باشد شود به (شکل 4 الف)

چنانچه قصاب تنها و حیوان آرام باشد، عمل کشتار می تواند با قرار دادن حیوان در بین دو پا و در کنار دیوار انجام بگیرد (مرحله 4ب). عمل کشتار باید با ملایمت، محکم، نگهداری سر به سمت عقب، سریع و ضمن یک برش با حرکت چاقو بر روی گردن حیوان انجام بگیرد. ناحیه برش باید زیر آرواره باشد و مجرای نای، سیاهرگها و سرخرگهای مقابل استخوان گردن قطع شوند (مرحله 5) (مسلمانان چاقو را در جهت مخالف بدن خود حرکت می دهند و نه به سمت آن). باید صبر کرد تا حیوان بی حس شود بنا به قوانین مربوط به کشتار (Animal welfare) (حداقل 30 ثانیه) و سپس حلال و مراحل بعدی انجام گیرند (مرحله 6). ضایعات کشتار ممکن است تبدیل به مرغینه شود. www.cwm.cornell.edu استفاده کنید (مرحل 7الف و 7ب). گردند

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این پروژ توسط پروژه بازاریابی گوشت گوسفند و بز شمال شرق آمریکا و توسط USDA تهیه تامین اعتبار شده است. برای کسب اطلاعات بیشتر لطفاً با آدرسهای ذیل تماس گرفته شود. پروژه بازاریابی گوشت گوسفند و بز شمال شرق آمریکا:

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انجمن غذا و تغذیه اسلامی آمریکا (IFANCA): www.ifanca.org
معبد گراندین: www.grandin.com

Conclusion

It is my personal belief that in the future good science will show that the most humane slaughter *may* well be religious slaughter. All research on the issue of religious slaughter (as opposed to evaluating a particular situation) needs to be done on a system that is operating properly and provides the best possible condition for slaughter – only then can the potential of religious slaughter be properly evaluated by both the religious community and the scientific community. Hopefully then we can have an open-minded scientifically-based discussion.

The process also needs to obtain the full buy-in from all the stakeholders. A process that imposes rules on the religious communities from the outside violates their Freedom of Religion and only serves the interests of those who wish to destroy democratic processes. The religious communities in some countries have done an excellent job of supervising (and sometimes licensing) of their slaughter men – the religious community in other countries need to be encouraged to develop such systems.

A Bumper Sticker

**It is not our differences that
divide us. It is our inability
to recognize, accept, and
celebrate those differences.**

Audre Lorde

Questions and Comments

For copies of this presentation or further discussion, contact me at jmr9@cornell.edu

There is a comprehensive paper at www.ift.org on kosher and halal rules; please go to publications: Comprehensive Reviews, volume 2 issue 3.

For talks on kosher/halal and on animal welfare (JMR) and animal welfare (TG), go to www.cybertower.cornell.edu and log in.

For a 2 credit distance learning course on kosher/halal go to the Kansas State University distance learning program in food science

Humane (Halal) on-farm slaughter of sheep and goats

Step 1

Minimize stress when catching animals. Avoid sudden moves or noises. Herd animals into small area. Catch gently.

Step 2

Move animal to slaughter quickly, without stress. If small enough, carry with one arm over the horns and other arm tucked between hind legs (Step 2a). For larger animals, have one person lead animal with chin held high, while another person pushes from behind (Step 2b). If handler is alone, hold animal's chin with one hand while grasping the dock or tailhead area with the other hand, or carry forelegs to lead the animal (Step 2c). A chute or lane can be used to move animals calmly (Step 2d).

Step 3

For humane reasons, do not shackle the animal for slaughter. Place the animal on a double rail (Step 3a) or firmly restrain the animal (Step 3b), which is safe and comfortable for both animals and people.

Step 4

A well sharpened slaughter knife with a straight blade twice the neck width is absolutely necessary for making the slaughter humane (Step 4a). A knife with a hand guard is safest.* If the handler is alone and the animal is docile, it can be slaughtered by straddling the animal next to a wall (Step 4b).

*One source for slaughter knives is www.dexter-russell.com

Step 5

Slaughter gently but firmly by holding animal's head back, and in a quick, single cut move across animal's throat just below the jawbone, cutting the windpipe, esophagus, arteries and veins forward of the neckbone.

Step 6.

It is both a halal law and a requirement for animal welfare to wait until the animal is insensible (at least 1 minute) (operationally equivalent to dead) before starting further processing (Steps 6a and 6b).

Step 7

Dispose of the inedible offal (animal remains) that will not be used for other purposes by composting or other sanitary and legal means. To use the static-pile composting method (inset), alternate layers of offal with high-carbon materials, such as wood chips, straw, leaves, peat or finished composted. This method also protects against odor and vermin. For more information, see

www.cfe.cornell.edu/wmi/composting.html.