The scientific, Islamic and ethical issues pertinent to the question of stunning animals for slaughter

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Stunning Method

Scientifically-speaking, the best method of slaughtering animals is to stun the animals first and slaughter immediately. When done correctly, stunning renders the animals insensitive to the pain caused when the throat is cut open to drain the blood out. For this essay, I collected and studied a wide range of articles that discuss the concept of pre-stunning, from religious leaders of the Islamic faith that are experts on the QURAN Kur’an’i Kerim and hadith and also from leaders in the scientific world that are experts on humane-slaughter, animal-physiology, behavior and welfare. I hope this essay will help to decrease suffering during slaughter and will provide some answers to some of the common questions and concerns that many of us have. Religious rules have to be in harmony with the nature of science, not against it. When we compare science with the way we practice our religious beliefs, we can better identify if we have been accidentally misinterpreting the religious rules and make appropriate corrections.

![Photo: Eyes on Animals](image)

The slaughter method involving a skilled professional rendering animals quickly and painlessly unconscious prior to cutting the throat is the best option for the welfare of the animals and also for the quality of the meat. Nevertheless, the stunning process should only be conducted by experts that have been trained on the correct stunning technique and can identify when it is successful. By stunning animals prior to slaughter one can avoid the cruel parts of slaughter such as the unnecessary force used to restrain the animal to lay down or the process of hoisting by chains while still conscious. Rendering animals unconscious first can also prevent the fear the animals feel while struggling or trying to escape during the slaughter process. Additionally, with the pre-stunning method, animals will not be conscious while their throat is being cut open and thus cannot feel the pain of the knife entering and opening deep tissue. Because of these facts, the slaughter method involving pre-stunning considerably reduces the stress and pain caused during slaughter. Lowering stress also ensures better carcass quality in addition to better animal welfare.

Now let’s dive deeper into these thoughts, using specific scientific and religious sources.

What are the concerns many Muslims have about stunning animals during slaughter?

The most common question Muslims have about stunning animals is if the meat is going to be unclean or if it is still halal. The answer is: it is still halal. But why is it still halal?

The answer to this question is found by learning the scientific facts about death and diving deeper into the essence of the rule for not eating cadavers (already dead animals) in the scientific and religious scriptures.
Firstly, it is important to understand that even when brain and heart are separated from one another, both can continue to function. We know via life-saving organ transplants that a heart can be taken out of an unconscious person and given to another in approximately 12 hours and it will keep beating. This means that even though one rendered an animal unconscious, its heart does not immediately stop beating. In fact, the heart of a stunned animal will continue to beat for about 4-15 minutes. The heart keeps living due to the electrical current coming from the special muscle cells and muscle tissue of the heart. That electrical current creates impulses on certain areas of the heart (sinoatrial- and atrio-ventricular nodes) and makes the heart beat. Even if these nodes stop creating impulses, the neural cells will create them instead. Naturally, with enough oxygen and nutrition the heart will continue to live even when the brain is separated from it.

Science shows that the heart is working independently of the brain. The heart generates its impulses itself. The frequency of the beats is determined by hormones in the blood. The required energy to make those impulses comes from oxygen and nutrition in the blood. Even when there is not enough oxygen, the heart can provide enough energy to continue to live for a short time further via anaerobic energy production. Once there is not enough blood left, the heart cannot fulfill its own cycle (of pumping the blood in from the veins of the body and pumping it out again via the arteries) and thus at this point will stop beating because of inadequate oxygen and nutrition. This is the case when the blood of the animal is drained out during slaughter, regardless if the animal was stunned first or not. The brain also can produce its own impulses independently of the heart. However, when the brain does not receive fresh blood, the oxygen and nutrition supply will eventually die out after a few minutes and then the brain will also stop working. During this time period, if the animal is not rendered unconscious the animal[will feel all the pain, but if the animal is unconscious, he or she will not feel any pain at all. Therefore, the purpose of stunning animals prior to slaughtering them, is to turn off the receptors of pain in the brain so that the animals are rendered insensitive to the slaughter process, with all other functions remaining normal.

**Is the amount of blood drained out the same in conscious cattle as stunned cattle (that were rendered unconscious by the captive bolt stunning process)?**

There is no difference in percentage of blood loss between a bovine that was stunned or one that was not. Both lose equal amounts of blood.

Yes, it is the same. The scientific studies prove that there is no significant difference between the amount of blood flowing out of an animal that had its throat cut while conscious and an animal that had its throat cut after first being rendered unconscious by captive bolt stunning. This is just one study; many other researchers found the same result. An animal that is fully conscious when its throat is cut does not lose more blood than one that is first rendered insensible to pain.

**Methods of slaughter and comparisons between them**

1- In the Zebh method commonly used in Turkey the cut is made to the throat. In this method of cutting the bovine’s throat, only two arteries are punctured but the vertebral artery (artery that runs along the spinal cord in bovine) remains intact, and thus continues providing blood to the brain and thus keeping it sensitive to pain. In this method cattle remain conscious and thus sensitive to pain for approximately 1.5 minutes afterwards, and sometimes even up to
8 minutes; (for sheep approximately 45 seconds because they do not have a vertebral artery). Because it takes time for the blood to drain out after the cut is made, the bovine remains conscious after the cut as its brain is still awake and conscious from the blood still in the system.. The longer it takes for the blood to drain out, the more time it takes for the animal to lose consciousness. And all this time the animal is sentient and feels the pain. An animal weighing 1 ton needs to lose 50-60 liters before it loses consciousness. When only these two arteries are cut, time is needed before enough blood is drained for the animal to stop feeling the pain. Even “a second” is a long time to experience such pain of having ones’ throat cut deeply open. And because coagulations sometimes do occur, the draining of blood can take even longer, further prolonging suffering.

2- Chest cut - Nahr Method. With this method the bovine will lose consciousness faster, in approximately 15 seconds because the main artery that comes out from the heart will be cut, causing heavy and fast blood loss. Furthermore, cutting the main artery from the heart will also stop the supply of blood to the brain via the vertebral artery. This method of cutting is preferable to the Zebh method if no pre-stunning is being used but only if done by professional and experienced slaughterers. The Nahr method is therefore fundamentally different from the Zebh method.

1. 2. Nahr method: Blood drains fast and vertebral artery to the brain is also severed. If done correctly unconsciousness can be reached in approximately 15 seconds.. During this time the animal is able to feel serious pain.

2. 1. Zebh method: Blood flow is slow and blood is still travelling to the brain via the vertebral artery. The time to reach unconsciousness can take up to eight minutes. During this time the animal is able to feel serious pain.

(The Photo: Humane Slaughter Association)

The Nahr method: cut is made from chest to the throat. Blood flows out much faster and in greater quantity. Within 15 seconds bovines will lose consciousness. In this photo we can see that a lot of blood is flowing out fast.

(Photo: taken from OIE film on Humane Slaughter)
Blood pressure ratios time and the time to unconsciousness: In throat and chest cuts.

3- **Stunning method by captive bolt:**
This makes an animal lose consciousness in a split second and therefore the animal does not feel any pain. (This will be explained in detail below.). Of all the different stunning methods, the captive bullet is the best method of all because it is so quick. The speed of the bolt is faster than the nerves of the brain, and thus the animal is rendered fully insensitive to pain before the animal receives the signal of pain from the bolt enters its brain. Using the captive-bolt stunning method means the animal can be standing in a natural position and kept calm. Therefore the animal is withdrawn from having to endure the stress and fear of being constrained, turned upside down or hoisted. The Quran tells that we should slaughter the large animals while they are standing still. (Hac 36). This passage in the Quran supports the scientific fact that it is best to keep large animals in their natural standing position to avoid inducing additional fear. In Turkey most large animals are first forced to fall down via trip-floor boxes and are then chained by their ankles and hoisted to the ceilings. Others are restrained laterally and then turned upside down, onto their backs, which is an unnatural and fearful position for a prey animal. During these restraint processes the animals are crying out in fear and are also suffering from physical pain. But by using the captive-bolt stunning method we avoid this stress and pain. One can render the animal completely unconscious and insensible to pain, while they are in a natural standing position and only start the processes of slaughter (cutting and hoisting) once the animal is fully unconscious.

4- **Post-stunning method**

As on can see in this photo (taken from OIE film), bovine is put in a restraint box with head restrainer. The neck is stretched upwards and the following two procedures take place:

1- 1 - Cutting the throat
2- 2 - Post-stunning: maximum 1 – 3 seconds after the animal’s throat is cut open the captive bolt is used to stun the animals. Pain from throat cut is thus felt by the animal, but is thus shorter in duration compared to the Zebh and Nehr methods because the animal is rendered unconscious by a captive bolt pistol within a few seconds after the throat is cut.

Religious affairs administration member Dr. Muhlis AKAR said “I don’t think that the Imams would be against this Post-stunning method”
1- First the stunner is prepared (before this is done cutting cannot be done, as that would risk prolonging the time of suffering)

2- One man performs the Zebh method (throat cut)

3- As quickly as possible after the throat is cut, the captive-bolt pistol is used to stun the animal to stop the sensation of pain caused by the throat cut.

Using this method, at least the animal will only feel the pain caused by the incision of the knife and the throat being cut open, but will not be left to suffer from this pain for long as the post-stunning renders the animal then unconscious. This method is allowed by the entire Islam world. But because it is not that well-known, this method is not performed in many places. If people do not approve the pre-stunning method they must at least apply this post-stunning method to limit the duration of suffering. There are many Islamic slaughterhouses in Europe using this method.

5- Slaughtering animals with the use of medical injection.

This method is unacceptable because the medication injection renders the meat of the animal dangerous for human consumption.

How does a stunning device work?

This is known as a “stun-gun” in common parlance, although it is not a gun at all. This device works with air pressure caused by the cartridge inside. This pressure is so powerful and so fast that it can immediately knock out the part of the brain responsible for sensation. The process takes 2 milli-seconds and the animal falls unconscious to the ground immediately. The slaughterer then cuts the throat or chest of the animal open to drain the blood quickly and painlessly.

There are two kinds of stunning devices

With the captive bolt device there is a long thin bolt that is ejected at very high speed, penetrating the forehead of the animal into the brain to damage the part responsible for sensation to pain. The bolt then bounces back and is retracted. The bolt does not remain inside the brain. But with the mushroom stunner, the device does not eject a bolt but rather hits the skull very hard and causes the animal to lose consciousness (faint). But in certain large animals, the skull of the animal is so thick that this type of device may not be strong enough to make the animal faint but instead can cause extreme pain. This device should therefore be limited to stunning smaller bovines (i.e. not large bulls). For this reason, we definitely recommend a captive-bolt stunner.
What is Halal?

The Quran answers this question in Maide, section 4. "They ask you, what has been made lawful for them. Say, "Lawful for you are good foods (Tayyibat) and what you have trained of hunting animals which you train as Allah has taught you. So eat of what they catch for you, and mention the name of Allah upon it, remain conscious of God." Indeed, Allah is swift in account."

The word 'Tayyib' translated as 'good', 'clean 'lawful', etc. means pure; both in the physical and the moral sense and is strongly linked foodstuff at very high standards; nutritious, healthy, organic. First of all, the Quran says "eat only healthy food. ...."(Bakara 172). Also Halal means healthy and clean. Clean food means food which is fit for human consumption and has no disease or rotten parts. If the food is clean and safe then it is halal. (At the end of this article I will provide comments about the appropriate Quran verses written by commentators of the Islamic religion.)

The Quran (Enam section 145 and Maide section 3) forbids eating carrion meat. This means it is forbidden to eat the carcass of an animal that died by itself. Why? Because if you do not know the reason for the death of the animal or how long it has been dead, you do not know if the meat is safe to eat.

The Quran says this kind of meat is carrion. The meat that is obtained by an animal that is first stunned before being bled out is therefore not carrion because the animal is being slaughtered in a controlled setting and one knows of its health status and how it dies. Not to forget that the veterinarian checks of the animals at slaughterhouses before and after they are slaughtered. The meat from pre-stunned animals should also not be considered as carrion. Meat that is carrion is from an animal whereby one has no idea about how or why the animal died. Animals that are stunned and bled out in a proper slaughter setting is Halal not carrion. By pre-stunning an animal a few seconds before hoisting and bleeding, it cannot turn the meat into carrion in a couple of minutes. Such an animal's meat is still clean and healthy in this way, too, because this animal just lost consciousness and after that was bled out immediately. The Quran says "If an animal died because of a strike and you are able to slaughter and bleed it out in a timely manner, then it is Halal. "(Maide section 3)

We should keep in mind that when the Quran says that if an animal that dies is immediately cut, it is still halal and does not suddenly become unhealthy and a cadaver. This is in direct connection also with the science. This is what is exactly done with captive bolt. This is also the way of considering it scientifically. The animal is knocked out by a hit and then within seconds it is cut before its heart stops.

The Quran and science should never contradict each other.

So, why did the Prophet. Muhammed use only a knife to slaughter animals and why should we do it now differently from how the prophet Muhammed did it back then? At this point we should consider that the stunning method is a progression of science and technology modernism just as the internet, the media, transportation vehicles, etc. are widely used by all. If Hz. Muhammed had lived in this time surely he would have used a telephone, too. He would have surely also used a car or plane to travel. Or would he just ignore all the new technology? No, he would surely not. He would much prefer to use the modern technology now available to render slaughter more humane, because he would not want to cause any unnecessary additional pain to animals.

For example, Hz. Muhammed used a miswak (wooden stick) to brush his teeth. But now we use electronic tooth brushes instead. If we think that miswak is holy and as a result forbid the use of electric toothbrushes, then we miss the real essence of Mohammed's message, which was to clean oneself. At the time one cleaned one's
teeth the best way possible at the time. The key message to respect here is to clean one’s teeth to stay healthy. It is the same as with stunning devices. The message from the Hz. Mohammed was not to do unnecessary harm to animals, not that only a knife can be used.

Hz. Mohammad stood up to a butcher who was sharpening his knife in front of an animal and said: "Do not do this in front of an animal because it will cause extra pain and fright to the animal." If we ignore that message instead of giving a holy meaning to a knife, we would be acting opposite to him and the Quran.

It is not ethical that we benefit from modern technologies that make our lives easier and more comfortable, but refuse it for the animals before the slaughter? This is not in respect of the essence of Hz. Mohammed’s teachings, which is to be as kind and gentle as possible.

If we only use a knife as Hz. Mohammed used it, this means that we are not trying to understand what the true essence of Halal food (tayyibat) means. Even though we now have more humane technology to slaughter animals, if we are still using the old method means that we are against progress towards animal-welfare and go against the essence of Islamic rules. This goes against the open-door policy of Islam to update interpretations of the essence and possibilities offered in the Quran.

Can we use the stunning device during religious sacrifice?

There is a concern that because stunning devices, like a captive-bolt stunner, cause a wound to the head of the animals when used, the animal’s flesh can no longer be considered Halal. But this is an incorrect interpretation of the rule that one should not eat flesh of injured and sick animals. The fact that an animal becomes injured by a stunning device during the slaughter process does not imply that the animal is now no longer Halal. The injury to the head is part of the slaughter process to render slaughter less painful but it does not mean the animal is unfit for consumption. As long as the animal was healthy and not injured when selected to be slaughtered, the animal is Halal.

The purpose of this Islamic rule is to prevent people from purposely selecting injured and sick animals for slaughter in order to cut costs. The meat is supposed to be shared with poor people.

Some commentators of the Islamic religion say that if the chosen animal is wounded but chosen with good purpose and a good heart, it is acceptable. The reason for that rule about wounded animals, Is to warn people who can buy healthy animals but buy wounded ones because they are cheaper. At this point, it is important to note that the purpose of kurban is not for giving meat and blood to God, but rather it is giving God’s good intentions. That is why we can use stunning devices in kurban (religious sacrifice), because the intention is good: to reduce suffering of the animals during the slaughter process.

Is the use of a stunner and captive bolt not painful and terrible for the animal?

Let’s make a comparison. Which is more horrifying? Cutting the conscious animal’s throat with a knife and making it suffer for up to 8 minutes or making him lose consciousness first in a split second? The first option involves forcing the animal to be restrained and then have their neck entirely cut open by a knife, cutting through all sorts of sensitive deep tissue and nerve endings, as well as the trachea and esophagus. The other option involves placing a stunner on the forehead and within a split second making it fall down unconscious. True, to watch a living animal be stunned can be startling, because a living creature all of a sudden falls down abruptly. But finding this horrifying is because we are not used to it. But even when you are not used to it, when
you later watch the slaughter of an animal kept fully conscious (thus without pre-stunning) during slaughter, you quickly realize that stunning is more ethical. When one switches to using a stunning device, one quickly knows that it is better and one will always prefer to use it. One will choose this option from the heart.

**The opinion that animals do not suffer when their throat is cut while fully conscious**

Some people think that the neck cut performed on conscious animals does not cause any pain. But this is sadly incorrect. We know the animals are in pain from the behavior and sounds they make. The animals develop large white eyes when having the head restrained and neck lifted. The animals bellow out, cry and defecate from fear. It is easy to test their ability to feel what is going on. After the cut is made the animal will continue to comprehend the dangers coming and react accordingly. They try to stand back up, run away, or get away however they can. Touch the animal’s eye after the cut you will see that it is blinking. This reaction of the eye can happen up to 8 minutes in a bovine after the cut is made and it shows that the animal is still conscious and able to carry out voluntary movements. With modern technology one can place electrodes on an animal’s head and measure the pain.

Even if one thinks that the animal may no longer feel the pain, one should err on the side of caution. We should think ethical. And one should never assume that an animal no longer feels pain if one cannot be sure.

**Can an animal recover after being stunned?**

This irrational concern can be compared to this: “I jumped down from a 100 m platform in order to commit suicide but while I was falling I changed my mind.” One needs to decide clearly if one wants and needs to slaughter an animal or not. Once the decision is made and the process starts, there is no need to turn back. If you decide to slaughter an animal, then stunning is a part of the slaughtering process, used to render the animal insensitive to the pain caused thereafter. If one is so concerned whether the animal can still return to life after being stunned, this means that you likely did not understand the essence of what halal food means when explained in the Quran. We are killing animals also by cutting their throat but we don’t say we killed we say we cut and we are not concerned if the animal can return back to life or not, as the decision was already made.

No scientist will say that animals are being killed by stunning. That is why all the scientific publications say “One must cut and drain out the blood after stunning”. One can only be sure of the animal dying when the blood is finally drained out.

**Conclusions**

We should accept and put into place the newest technologies available to render animals for slaughter in as ethical a way as possible and avoid any unnecessary animal suffering. Causing unnecessary additional suffering to animals, at a time when there are technologies and tools available to render it less painful, is contrary to the essence of our Religion: The Islamic religion does approve stunning methods.

The Islamic religion does not deny technology advances nor scientific facts and research. We are talking about a technological invention to help render animals insensitive to the pain caused when cutting the entire throat (esophagus, arteries, deep tissue, trachea) open to drain the blood. It is true that before stunning technology and
devices were developed, the best option to see if an animal was healthy and fit for consumption was when the animal was alive and conscious at the time of slaughter. This way one could tell that the animal was in good condition. But today, the health of the animals are checked in the lairages where the animals are waiting for slaughter, and then their meat is checked after slaughter to again be certain that it is fit for human consumption. Veterinary inspectors are specially trained to carry out these checks thoroughly and carefully. They do a very good job. That is why Imams should take the opportunity to listen and learn from veterinarians about animal health and slaughter. Once one knows the facts, one is able to correct any previous misunderstandings about acceptable Halal animal-slaughter. Even if the animal dies from the stunning procedure just prior to cutting its throat, the meat is still Halal because this death is under control, humane and intentional. Death did not come by itself. The intention was to kill the animal in order to consume its meat. Stunning really must be seen as a part of the modern, more humane slaughter process just like a sharp knife was a part of the slaughter process previously.

If the Imams are apprehensive still about whether the scientific facts above are the acceptable way of slaughtering Halal, than they should at least chose option 4 method of cutting: Post-stunning. Because at least the animal will suffer for less time compared to performing slaughter on an animal that remains conscious the whole time. This method should be communicated far and wide by the Imams because the government, slaughterhouses and the Muslim people are waiting for a message from them for the best new way of cutting. Nothing will change unless the Imams help.
Appendix 1:

Collection of comments made by religious commentators on the subjects discussed in this article.

I compiled comments made by religious leaders on religious scriptures pertinent to the subjects covered in this article. I also am including correct interpretations of the words that are written in the Quran related to the slaughtering of animals. I also compiled the words of Hz. Muhammed according to the commentator who interpreted and delivered them to me. The purpose of my doing this is to help reduce the suffering caused to animals during slaughter and to help Muslims understand what is approved by the rules of the Islamic religious and their essence, which is to protect both our health and the animals to be slaughtered from disrespectful treatment and unnecessary suffering.

How the Quran defines the concepts of ‘dead animal’ and ‘blood’?

The book of HAYAT KAYNAĞI KUR’AN TEVSİRİ - M. Sait Şimşek

1- Carrion: Dead animal with no known killer. Mostly such animals are dead because of a disease. Their carcasses contain micro-organisms that caused their deaths.

2- Blood: Is defined by flowing liquid, not the blood in the organs. After slaughter and draining out the liquid blood as much as possible, it is acceptable to eat the meat from the organs even if there are still vessels and nerves containing including some blood.

3- Overt cut: Even if there is a small sign of life, an animal can still be consumed, as long as the blood is first drained out.

The book of SAFVETU-T TEFASİR - Sabuni

1- Carrion: Dead animals which have died by natural causes. Zemahşeri says: “Animals which show a small sign of life and not yet quite dead can be cut and considered halal”

2- Taberi says; The food which is considered as “clean” by God, can be slaughtered in the right way and this is halal.

The book of Çağdaş meselelere fetvalar - Yusuf el Kardavi

1- What is the rule for eating meat and poultry that have been imported/transported and preserved?

2- With no doubt, such kinds of meat are varied. Some of them are coming from different people (mainly Jewish and Christian). Allah allows this meat to be eaten.

3- Some Muslims claim it is important who did the cutting and if at the moment of slaughter, Allah’s name is spoken out. But some simplified this concern because of this reason: People asked the prophet Muhammad whether it was alright to eat meat from animals slaughtered by other people who are not Muslims and that they are not
sure if at the moment of slaughter, Allahs’ name was spoken out. Mohammed explains that one should speak Allahs’ name out oneself before one eats the meat.

The book of Büyük Kur'an Tefsiri-Dirayet ve Rivayet Tevsiri - Ali Arslan

1- Meytet: according to the versus (dead) means spontaneous death and the spirit left the body without any reason.

2- Blood means liquid blood that has flowed out of the body.

3- It is forbidden to eat the meat from an animal that has been beaten to death with a stick or with stones.

4- Ibni kesir says: "In the body of an animal that has died on its own, there is blood that remains in the carcass. Eating that kind of meat is against Islamic religious rules because it can be dangerous to our health. For this reason Allah forbade Islams to eat dead animal. The reason we are advised not to eat the bodies of animals whose cause of death is unknown is to protect us from becoming sick.

5- Resullullah;"Sea water is so clean that the dead creatures in it are halal."

6- They asked İbni Abbas “Can the spleen be eaten?” and he answered: "Eat it". They said “it is blood”. İbni Abbas said that God forbids consuming only the flowing blood that runs as liquid through the body, not the fleshy blood found in organs.

7- In Sahih, Adiy bin Hatim narrates. "I asked the messenger of Allah about the fact that I sometimes had to hunt by bow and arrow or spear. If I kill the animal by shooting an arrow at it, can I eat the meat?" He answered: "When you shot or throw the arrow or spear and it causes a hole and kills the animal in one shot, you can eat the meat. But if not, then you cannot eat the meat because it means the animal has been tortured by your arrow or spear.

8- In Sahiheyn, narrated by Rafi Bin Hudeyc, it is written. "O messenger of Allah, we will fight with the enemy tomorrow but we do not have our knives with us. I wonder if we can cut the animal with a sharp cane? "The messenger answered: "Any instrument that is able to cause blood shed is acceptable: eat it."

The book of Furkan Tefsiri - Prof. Muhammed Mahmud Hicazi

1- Oh who believe! Do not forbid yourself to eat clean after blessings that Allah has made lawful for you.

2- Dead means an animal which died on its own for unknown reasons, and not on purpose by an offender. It is forbidden to eat the meat from an animal that died on its own by unknown causes because the carcass may not be healthy for consumption. For the most part, the carcasses of animals that died on their own have germs inside from a disease. Furthermore, healthy people will also feel repulsed to eat this kind of unhealthy meat.

3- Beating an animal to death is forbidden in Islam because it causes more pain to the animal than slaughtering. That is the reason beating is not halal. It causes additional pain.
4- At the present time, eating the meat of animals which are killed by bullets from a shotgun is permissible.

5- If you overt cut an animal it’s meat will be halal.

6- In Maide verse 3, it is explained how halal meat becomes haram. Then in verse 4 it is stated why only clean food is permitted as halal, according to Allah via the son of Hatim Tai, der Adiy, and the son of Muhalhel et Tain, der Zeyd. Allah forbid the eating of carrion- dead animals that died on their own for unknown reasons.

HAK DİNİ KURAN DİLİ - Elmalili Hamdi Yazır

1- Carrion: Animals which are dead by a means other than by knife.

2- Christians stun the animals’ heads first before draining the blood and consuming the meat. They say, the animal does not die by itself, therefore, this is not carrion. They treat this meat as it is slaughtered. But animals which are slaughtered this way are not carrion and cannot be eaten because the blood was not drained out.(Elmalili Hamdi Yazır is wrong at this point because the blood is being drained out right after stunning.)

The book of Hadislerle Kurani Kerim Tefsiri - İbni Kesir Interpretation of the Quran by Hadith

1- Dead means that the animal died without being strangled or shot. The reason why dead animals are forbidden for consumption is that no blood has been drained out from the body. A carcass full of blood is a damaged carcass. There are however several exceptions: fish and grasshoppers.

2- In a sahih verse Adiy İbn Hatim it states; "Oh messenger I hunt animals by shooting with my bow and arrow. It is said that I can eat what I have shot and punctured. If it hits the animal hard and kills the animal prior to the puncture of the arrow causing blood loss, do not eat it.

3- They asked the messenger about the use of cutting tools and he gave a general explanation. The messenger says nothing specific about a cut. He says „Eat what is Halal but do not eat necessarily what is cut“. This means that one can also use other tools during the slaughter process. The messenger says that the meat obtained from an animal which has had its blood drained out

4- Rafi İbn Hadiç says in Buhari and Muslim’s Sahihi; "I said, oh Messenger we will face the enemy tomorrow and we will not have big knives with us. Can we use a cane or reed stick to cut the animal? The prophet replies: “God said we can eat the animal’s meat which has been sacrificed in the name of God and its blood has been drained out.

5- Some so-called wise people say sacrificing in the name of God is the most important rule of all. One does not even have to call out Allah’s name during slaughter. One can even call out Allah’s name while eating it is enough to say it while you are eating the meat. The one who recites bismillah before eating the meat will be eating halal meat, regardless of what was said or not said during the actual slaughter process.
The reason for this is that the meat is eaten showing appreciation for God. The wife of Prophet Aise asked the messenger “Some people give us meat but we do not know if they sacrificed the animal in the name of God or not. Can we still eat that meat?” The Prophet replied “Mention the name of God and eat it.”

6- The point of slaughtering an animal is to kill it as fast and to limit suffering as much as possible. A man wishing to kill and eat meat was sharpening his knife while restraining an animal and the messenger asked him: “You want to kill that animal twice? Why didn’t you sharpen your knife before restraining the animal?”

7- If you are going to slaughter an animal, slaughter the animal correctly and humanely. Sharpen and prepare your knife before slaughter to limit the time of suffering and stress.

8- One day Hz. Ömer saw a man dragging an animal to a slaughter house. He said “What is wrong with you? Take the animal properly to the slaughter house.”

The book of Fahreddin Razi

1- Carrion is “meyte”. Polytheists said to Muslims that “You are eating what you have killed but you do not eat what Allah killed.” You should know that if the animal dies on its own, the blood inside it remains inside the body and starts to putrefy, and this is bad for our health.

The book of Fizilali Kur’an - Seyyid Kutup

1- The verse that says “Today all good things have been made halal for you” is based on the same goal as previous verses. It means all things good and clean are halal.

2- Allah does not forbid anything unless it is contaminated.
Appendix 2:

Scientific articles about slaughtering

In this section we present scientific articles by various scientific experts in the field of animal biology, physiology and slaughter. These articles are refereed scientific publications with high value. First I will show a screen shot of the title of the article and in which scientific journal it can be found and then I will highlight those parts that are pertinent to our discussion on animal slaughter ethics. My purpose for doing this is to pin-point the similarities between scientific facts and Islamic rules.

Origins of movements following stunning and during bleeding in cattle

Bayıltma uygulamasına rağmen hayvanların bir takım kipırdamaları, bayıltma işleminin tam gerçekleşmediğini manasına da gelebilir.


(Almanca)

Kalbin atmaya devam etmesi, bayıltmadan sonra 15 dakikaya kadar sürebilir.

Kan tahliyesi uzun süren hayvanlarda, kalbin atmaya devam etmesi de o denli daha uzundur. Bayıltma ve akabinde kesimden sonra kanın dışarı tahliyesi süresinde, kalbe girişi olan kan miktarı giderek azalır. Kalp çalışması bayıltma işleminden 8 -10 dakika sonra sona erer. Kafası göveden tamamen ayrılan hayvanlarda kalbin çalışmasya devam etme süresi 15 dakika kadar devam eder. En çok kan tahliyesi, kalbin pompalaması dışındaki etkiler dolayısıyla. (Basınç, kesilmiş damar)

Die Herzschlagaktivität nach der Betäubung dauerte länger an bei Tieren, die verzögert entblutet wurden. Die Menge des aufgefangenen Blutes nahm mit Zeitdauer ab, die zwischen Betäubung und Entblutungsschnitt lag. Die Herzaktivität endete 8-10 min nach der Betäubung. Bei Tieren die enthaustet (Abtrennung des Kopfes) wurden, endete die Herzaktivität nach 15 min. Der größte Blutverlust erfolgt ohne Herzaktivität.
Her iki kesim metodunda da kan tahliyesi aynı miktardadır.


(Almanca)


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**Figure 1**

Blood loss as a percentage of live weight following slaughterings by different methods in cattle (Mean ± SE).

(Almanca)

Abbildung 1 zeigt die Rate des Blutverlustes, angegeben in Prozent Lebendgewicht, bei verschiedenen Schlachtmethoden. Die Grafik zeigt leichte Abweichungen in der Ausblutezeit, jedoch konnten beim prozentualen Blutverlust nach 2 Minuten, keine signifikanten Unterschiede festgestellt werden.
Kanın gövdeye karışması durumu

Anatomical differences in cattle can lead to occlusions of the arteries and recovery episodes in blood pressure in calves (Anil et al., 1995b). The brain of ruminants is perfused with blood from a vascular network called “the rete mirabile” that receives branches from the carotid and vertebral arteries. In cattle, extra anastomosis may bring in blood to the rete mirabile and brain sometimes even after exsanguination, whereas in sheep and goats, this is not the case.

(Almanca)

Carcass and Meat Quality Effects

It is of utmost importance to expel as much blood as possible to meet religious requirements of Halal and Shechita slaughter. It was often claimed that stunning would adversely affect exsanguination and that neck cutting without stunning improves blood loss. Levinger (1995), in his book on Shechita reviewed experiments in which blood parameters, color, and pH were measured under different slaughter methods (conventional with stunning versus no stunning) and concluded that sticking and blood loss were better after Shechita alone because of the very sharp knife used and efficacy of the cut. However, Anil et al. (2006, 2004) examined exsanguination and compared stunning and slaughter versus Halal slaughter with no stunning in cattle and sheep. No differences were found in both bleed-out rates and total blood loss. Velarde et al. (2003) also previously found a slight increase in blood loss after electrical stunning in lambs, rather than an improvement in bleed out by slaughter without stunning.

Based on existing studies and available results, it is reasonable to suggest that regardless of whether preslaughter stunning is used or not, blood loss is unlikely to be different.

Bilimsel araştırmalar ve yapılan testlerin sonuçları gösteriyor ki, akan kanın miktarının, hayvanın kesilmeden önce bayıltılmasıyla veya bayıltılmamasıyla bir bağlantısı yoktur.


Auf Grundlage wissenschafstlicher Studien und der Untersuchungsergebnisse, kann man davon ausgehen, dass der Blutverlust (Menge des verlorenen Blutes), nicht davon abhängt, ob das Tier vor der Schlachtung betäubt wurde oder nicht.
Location of applying stunning device on cattle is at the intersection of the lines that come from the base of the horn to the center of the eye and in horses the location is the middle part of the beginning of the mane. And in pigs the location of applying the device is the middle part of the forehead, upper of the eyes. And in calf, sheep and goat, the stunning device must be aimed at the back of the head and the drill goes through in the medulla oblongata and causesparalysis and the animal loses consciousness.

The stunning method provides economic benefits by avoiding stress, having better draining of the blood, and better quality of meat as well as better animal-welfare (less suffering is caused).

Due to our religious practices these methods can be used not only to kill animals before slaughter. Our religion says in the first instance that we cannot allow animals to suffer and the meat must be healthy and clean. (25). As a result our religion says that we should not prefer those devices that reduce suffering, because of the possibility of the accidents happening, causing the animal to die before slaughter but other methods can be used by professionals.
We can see that Prof. Bülent Nazlı says the stunning method is good for animal welfare and carcass quality and it helps avoid accidents. But in the end he does not advise us to use devices to reduce suffering because of the risk of killing animals before slaughter. But I would like to emphasize that for all the paragraphs and rules that I gave in the above article, our religion says the most important thing that we should care about is healthy food. And also I would like to recall that accidents can also occur in carrying out the neck-cut method. We can see that butchers can cut themselves through accidents in bayram of the kurban. But in the stunning method accidents occur less often than with the other methods and slaughter happens faster and is more ethical.
Stunning and animal welfare from Islamic and scientific perspectives

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in cattle (Anil, Love, Helps, & Harbour, 2002). Non-penetrative stunners are accepted for use in halal slaughtering of cattle and buffalo but the stunner must neither penetrate nor break the head. Any injury caused must not be permanent and the animal's skull should be checked after stunning for any permanent injuries (JAKIM, 2011; MS1500, 2004, 2009). Percussive bolt stunning is acceptable by Islamic authorities because the bolt does not invade the brain, thus there is less likelihood of intracerebral hemorrhage. This stunning is also reversible. To main-


(Almanca)

Nicht-penetrierende bolzenschussgeräte sind für die Halal-Schlachtung von Büffeln und Rindern zugelassen, aber das Bolzenschussgerät darf nicht die Schädeldecke durchbrechen oder in das Gehirn eindringen.

"Schlagende" Bolzenschussgeräte werden von islamischen Behörden akzeptiert, weil sie nicht in das Gehirn eindringen. Deswegen bleibt das Gehirn unversehrt und die Betäubung ist reversible.
Delmeli bayıltan nedir?

Sığırların kanlarının boşaltılmadan önce bayıltılmaları için, ya bir barut kapsülü ile ya da hava basıncı ile çalışır bayıltan kullanılır. Basınç sırasında 7-11 cm uzunluğunda, 1 cm kalınlığında çelik bir mil aletinden çıkararak süratle hayvanın alnından içeri girer. Daha sonra mil, yaylar tarafından otomatik olarak geri çekilir. Tüm bu süreç 2 salise bile sürmez.

Delmeli bayıltan, hayvanın birden bire bayılmaması sağlar. Bu yöntem, çok sayıda testler ve bu testlerin birbiri ile örtüşmesi sonucu, hayvan refahına uygundur. (1, 2, 3, 4, 5, 6, 7, 10, 11, 13, 14). Bu yöntem ile beyinin, dış etkenlere karşı tepki vermediği isbat edilmiştir. Kesimin 60 saniye içerisinde yapılması ve kan tahliyesinin gerçekleşmesi durumunda hayvan bir daha da kendine gelemez.

Delmeli bayıltan nasıl bir etki yapar?

Bayıltılmış olan hayvanlar, boğazlarının kesimi sırasında veya daha sonra yaralı yerlerin birbirine sürtmesi halinde de hiç bir acı hissetmezler. Ayrıca kanlarının birden bire boşaltılması sırasında da bir şok yaşamazlar.

(Almanca)
Bewusstlose Tiere empfinden keine Schmerzen während des Halsschnittes und auch nicht nach dem Schnitt, wenn sich die Hautlappen der Wunde berühren. Ebenfalls empfinden sie keinen Schock durch den schnellen Blutverlust.

first time (Gibson et al, 2009), and showed that the vast majority of animals were rendered insensible before data were able to be collected from about 3 seconds after stunning. The fourth paper assesses the extent to which applying a non-penetrative captive-bolt stun 5 seconds after the ventral-neck incision ameliorated the noxious sensory input caused by the incision (Gibson et al, 2009d), and showed that the stun prevented the subsequent development of responses in the EEG to noxious sensory input in most of the animals.

. . . ve görüldü ki, daha veriler kaydedilmeye başlamadan önce, hayvanların büyük bir bölümü bayıltma işleminden sonraki ilk 3 saniyeden itibaren biliinclırzılyorlar. 4. belgede, darbeli bayıltanın boğaz kesiminden 5 saniye sonra kullanılması halinde, boğaz kesiminin verdiği acıyı ve zararlı etkileri engellemesi araştırılmaktadır. Genel olarak bayıltma işlemi hayvanların büyük bir çoğunluğunda EEG de tesbit edilen tepkileri engellemektedir. (Ağrı göstergeleri) (EEG = Elekroenzephalografie - Beyin korteksi aktivitelerinin elektrodlar üzerinden ölçümü)
Conclusions

This new information demonstrates clearly for the first time that the act of slaughter by ventral-neck incision is associated with noxious stimulation that would be likely to be perceived as painful in the period between the incision and loss of consciousness. In cattle, this can be as long as 60 seconds or more (Newhook and Blackmore 1982). The effects of captive-bolt stunning in producing rapid unconsciousness and ameliorating changes in the EEG

(Almanca)

Diese neuen Informationen zeigen zum ersten Mal deutlich, dass der Akt des Schlachtens mittels Halsschnitt verbunden ist mit schädlicher Stimulation, die als schmerzhaft empfunden wird in der Zeit vom Entbluteschnitt bis zum Verlust des Bewusstseins. Bei Rindern kann diese Zeitspanne 60 Sekunden und mehr betragen. Die Bolzenschussbetäubung führt zu sofortigen Bewusstlosigkeit, erkennbar im EEG.

associated with neck incision have also been clearly demonstrated. Taken together, these papers (Gibson et al. 2009abcd) provide the most comprehensive electrophysiological picture to date of the events surrounding slaughter by neck incision, and provide further support for the value of stunning in preventing pain and distress in animals subjected to this procedure.

Bayıltılmaksızın yapılan kesimlerin sonucu olan bu kapsamlı araştırmaların toplamı bir araya koyulduğunda ortaya çıkan elektropisikolojik resme göre, acının ve stresin azalmasına bayıltan kullanımının desteklenmesinin mana ve önemi belirginleşmektedir.

(Almanca)

Zusammengefasst liefern diese Studien ein umfangreiches elektrophysioligisches Bild der Ereignisse die mit dem Halschnitt einhergehen und unterstützen die Bedeutung der Betäubung zur Vermeidung von Schmerzen und Stress bei der Schlachtung.
Assessment of stun quality at commercial slaughter in cattle shot with captive bolt

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enters the forehead and brain. Death may result as a consequence of the physical damage to the brain but it is not a guaranteed outcome (Appelt & Sperry 2007). The monitoring of

Ölüm, beyin hasarı sonunda da ortaya çıkabilir, ancak bu ölümün mutlak sebebi değildir.

(Almanca)

Der Tod kann als Resultat der Gehirnzerstörung vorkommen, tritt aber nicht zwangsläufig ein.
2.4 Ausblutungsgrad

Nach der gesetzlich vorgeschriebenen Betäubung durch Bolzenschuss erfolgt die eigentliche Tötung der Rinder durch Blutentzug. Der Ausblutungsgrad wird von zahlreichen Faktoren (vgl. 2.4.1), wie beispielsweise der ordnungsgemäßen Betäubung der Tiere, beeinflusst und bestimmt letztendlich auch die Fleisch qualità wesentlich (BOJOVIC et al. 1992). Definiert ist der

Hayvanın ölümü, kanuni bayıltma sistemi olan delmeli bayıltan ekipmanının kullanımından sonra, kesimin yapılması ve kanın tahliye edilmesi sonucu oluşur. Kan tahliyesi oranları, düzgün bir bayıltma gibi bir çok faktörlere bağlıdır. Bayıltma, ayrıca et kalitesini de büyük ölçüde etkiler. (BOJOVIC et al. 1992)

[DOES THE ABOVE NOT HAVE TO BE TRANSLATED INTO ENGLISH?]