

The behaviour of bullfighting bulls

(speech at the Parliament of Catalonia, on March 3rd 2010)

Thank you Mrs. Chairwoman, members of parliament, organizations and present public.

My participation in these proceedings will be aimed to help give a scientific context to the Bill to ban bullfighting. Specifically, my contribution will come from the field of Ethology, the science that studies animal behaviour comparatively.

When any government assesses the possibility of banning an activity due to a possible existence of serious animal welfare problems, the opinion of ethologists is very relevant.

In these cases, the question that the politicians should ask to the ethologists is: observing the behaviour of the animals in question and comparing it with the behaviour of others, is it possible to come to the conclusion that such animals suffer from an individual point of view and/or from a collective point of view? I will answer this question with my intervention.

Nowadays we already know that there are three types of animal suffering: physiological, neurological and psychological. The first one is created when there is a physical illness, the second one when there is pain, and the third one when there is a mental state of stress, depression, or psychopathy. We ethologists can detect these types of suffering thanks to four tools at our disposal: facial expressions, vocalizations, body language, and the behaviour in relation to the environment. I have used these four tools when I have observed the bulls.

Facial expressions are much more useful for social species in which the vision is the most developed sense, as is the case of primates. Bulls, for being of a species of the order of the artiodactyls, although they are indeed social the sense of vision is not very developed, and therefore they have fewer facial expressions. Nevertheless, when I have observed in detail the recordings of the bullfights I have witnessed, I have found facial expressions of pain (open mouth, closed eyes, etc.), especially when the sharp weapons (*pica, banderillas, estoque* or *puya*) are stabbed into the bull's bodies.

But there is also a facial expression that can be observed in all the bulls in bullfights, and which indicates physiological suffering. Towards the end of the bullfight, in the third *tercio*, the bull can be seen with the open mouth and the tongue out. This is a facial expression of exhaustion, indicating that the physiology of the animal has difficulties in keeping his body temperature sufficiently low to avoid a collapse. The family of Bovidae, to which the bulls belong, do not have, relatively speaking, a very efficient mechanism to reduce the body temperature when it reaches hyperthermia, since, unlike horses, they do not sweat much, nor do they have a very long tongue to release heat, as the Canidae (dogs or wolves) have. In other words, the bovids, considering their body mass and their mechanisms for body temperature control, become exhausted very rapidly. This 'shortcoming' is used by natural predators such as wolves, which have much more physical endurance, and in our case the bullfighters, who use the first two '*tercios*' of the bullfight to exhaust and wear out the bull.

As hearing is indeed a developed sense in artiodactyls (since often they are prey of predators, and therefore it is a useful sense for defence), in those that are social, as is the case of cattle, one would expect that there should be vocalizations expressing suffering. This is precisely what I have found. The vocalizations that are heard during bullfights are a clear expression of the fact the bull is in an adverse situation that he tries to avoid, which is precisely the biological and

evolutionary significance of suffering. Clearly the vocalizations appear only when the bull has been separated from his herd companions, and it faces an adverse situation that can either be a hostile or unknown environment, or the provocation of the men or the horses. As the bull is a social animal, the message of the vocalizations is aimed to his herd companions (other bulls that travelled with him to the bullring from the farm, and that the bull can still smell because they are close by) and it can either mean a message of alarm (for example 'do not come, there is danger here'), or, more probable, a call for help (for example 'come to help me, I am being attacked').

Regardless of their precise meaning, these vocalizations inform about an adverse situation that the bull tries to avoid, and since the result of these calls is fruitless (the other bulls do not come to help him and the situation does not improve), the frustration, added to the adverse situation in itself, allows us to conclude that these calls, when realized in the bullring, are an expression of suffering.

The third ethological tool, the body language, also makes us conclude that the bull suffers. This tool analyzes the relative position of different extremities and body parts with respect to each other. In other words, the postures of the animals. There is a posture in which the bull turns his head towards his back. This happens when they have just stabbed the bull with the *banderillas* or the sword. The function of this posture is clearly to try to extract with his horns what is producing pain. This interpretation is reinforced by the associated behaviour of jumping and moving vigorously up and down, and because we know that the bull has many pain receptors in the area where these weapons are stabbed.

The fourth and last ethological tool is the behaviour of the bull in relation to his environment. If an animal is in an environment that generates suffering, his behavioural response will be to try to change environment, fleeing; or to modify it by eliminating those aspects of it that are the cause of the suffering. This is precisely what the bullfighting bull does. There are several documented cases, of which I have also been a direct witness, which show that if one gives the bull the possibility of fleeing from the arena, he chooses to flee. The bullring is designed precisely not to give the bull such possibility. That is why the door of the '*toril*', the door from where the bull has entered the arena, is intentionally camouflaged with the rest of the bullring and, once it is closed, the bull cannot longer see it. That is why the bullring is circular, so that the bull loses his orientation and does not shelter in any corner (as usually happened when the bullrings were still square). That is why the wooden fence ('*las tablas*') is very high. Nevertheless, the motivation for escaping is so big that some bulls do jump the fence, and they will only return to the arena when they are forced by more pain than the one they suffered when they were in it.

Since normally the possibility of fleeing is not given to the bull, he only has left the option of modifying the environment eliminating those aspects of it that are the cause of his suffering. In this case the bullfighters and the horses. The charge of the bulls, often erroneously interpreted as an attack, is actually a defensive behaviour aimed to removing the aggressor of the environment where the bull is.

Sometimes, the bull instinctively 'warns' with a ritualized charge that fits what ethologists call 'ambivalent behaviour'. The bull, without changing location, and breathing heavily, scratches the soil with his forelegs, with the head low, in the direction of the element of the environment that he tries to modify (the bullfighter or the horse). It is what the bullfighting aficionados call '*escarbar*'. It is a ritualized threat performed in the hope that there will not be a need to have a physical confrontation. As the horses or human beings do not leave with this behaviour, the bull has no other choice than to charge, and attempt to remove the danger directly with his horns. This behaviour is the one that the toreador wants to cause, and he will not stop provoking the bull until it occurs (and when it happens, he 'deceives' the bull by making the bull think that what is

actually threatening him is the 'cape' or the '*muleta*'). Therefore, the bull's charge in the arena is a defensive behaviour that indicates that he is suffering both psychologically and physically. Psychologically already from the beginning of the bullfight, since in addition to the fear caused by being in a place surrounded by shouting people from where he cannot flee or hide (which is particularly concerning in the case of the bullfighting bulls that have grown up in a situation of little human contact and few physical restrictions), we must add the stress caused by the transport, the separation from the rest of the herd, and the extreme situation of confinement in the spaces where the bull is placed immediately before is let out into the arena.

The case of the bull's charge being a defence mechanism is supported when we compare the behaviour of the bullfighting bulls with the behaviour of other animals in similar situations. For example, we have the case of deer, which also belong to the order Artiodactyls and which, although belonging to another family (the Cervids) also have the problem of becoming exhausted rapidly due to hyperthermia. When deer are hunted by wolves, or also when they are hunted by humans, such as in the case of the stag hunting on horseback and with dogs – a practice that was very traditional in England but was banned in 2004 together with fox hunting and hare coursing - their defensive behaviour is divided into two phases: First, running and attempting to escape from the predators. Later, when they are already getting exhausted and cannot run any more, turning around and trying to charge the dogs or wolves with their antlers, sometimes with enough success hurting them ending the hunt. The English hunters call this second phase 'stag at bay ', and it is when the hunter approaches with a gun and shoots the deer. Therefore, what we see in the bullfights is the equivalent of the ' bull at bay ', the last defensive phase that appears as the last recourse when the bull does not have any more options.

In fact, in the past we could see the entire defensive process, since the bulls did not use to be transported to the square with vehicles, but were made to 'flee' towards the bullring with the *running of the bulls* (the first defensive phase), and then were separated from each other and each one was killed in the bullfight where the bull would charge the attackers (the second defensive phase). This is precisely what can still be seen in Pamplona.

Therefore, from an ethological point of view I do not have any doubt that all the bulls suffer as individuals in the bullfights, and that there is no modification of the current practices in the arena that can entirely eliminate such suffering.

This leaves us with the second part of the initial question: do the bulls suffer as a collective? To answer this question we must find out what a group of 'bulls' means. In this case we have to see what is the taxonomic category of bullfighting bulls. This is a topic still debated in the scientific community which does not seem to agree about the precise classification of these animals, although there is definitely a consensus that the bullfighting bull belongs to the Order Artiodactyls, Family Bovids, Sub-family Bovines, and genre *Bos*. The discrepancies begin at the level of species, subspecies, race, variety, caste, etc. Nowadays the majority of scientists accept that the bullfighting bulls belongs either to the species *Bos taurus* or *Bos primigenius*, and either to the subspecies *Bos taurus taurus* or *Bos primigenius taurus*, depending on the species accepted. But it is important to emphasize that all the domestic western bulls, both for fighting and for meat, belong to these subspecies, so we must go further down in the classification to find the bullfighting bulls. It is at this level where there is not agreement about which race or breed they belong to. There is no even agreement if all the bullfighting bulls are of one breed. Therefore, the only thing that we can safely say with certainty about the 'group' of bullfighting bulls is that they are a group of bovines created by man through artificial selection (as are all the bulls that exist in the world today), which are used in taumomachy.

Therefore, there is no doubt that bullfighting bulls are neither a species, nor a subspecies, and that they are a product of human activity, not of Nature. This is important because one of the possible problems of a 'collective' of animals is the danger of extinction, but this cannot be applied to bullfighting bulls since this is a concept that can only be applied to subspecies, species, and other superior taxa. Having this in consideration, since the species to which the bullfighting bulls belong has at present more than 1300 million individuals in the world, the minority of which are used in bullfighting activities, the danger of extinction, with or without taumachy, is not one of the problems of the bullfighting bulls.

Another possible problem for a collective of animals is lifespan. If a population of animals has its average lifespan reduced considerably by any cause, this affects its chances to reproduce, and we may say that the population 'suffers' a demographic problem. This is indeed an issue applicable to bullfighting bulls, since the lifespan of the individuals selected for the bullfights is drastically reduced to at least a third of the lifespan they could have achieved. Bullfighting bulls are killed when they are three, four, five or six years of age at the most, but if bullfighting did not exist these individuals could have lived 20 years or more. In fact, the average lifespan of the males of the species to which the bulls belong is 20 years in captivity.

This artificial reduction of lifespan has another consequence for the group of bullfighting bulls. It has a negative effect at the social structure of such groups. Any animal group belonging to a social species achieves its social balance with a specific combination of members of different ages and genders. If a specific demographic group is systematically eliminated, as is the case of the males of more than six years of age, the group cannot achieve its ideal social stability and it is always in a constant state of readjustment, which explains why sometimes there are many fights between males in the farm. These fights make the breeder separate the males of the group, which does not always help to generate stability. Added to this, since after generations of artificial selection breeders of bullfighting bulls have been trying to create individuals which have and increased tendency to defend themselves by charging rather than running, this has generated an inadequate and unnatural response in the confrontations between males for females or to establish hierarchy, which either causes more fights and wounds between individuals (physical suffering), or forces the breeders to further separate the groups (social suffering).

In conclusion, from an ethological and zoological point of view I do not have any doubt that bullfighting bulls suffer individually and collectively because of bullfighting, and therefore the prohibition of these activities is the most coherent action a society which cares about animal welfare and values the natural patrimony can do.

Thank you very much Mrs. Chairwoman, and members of Parliament.

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