

Humane Killing Panel Discussion

Opening Remarks: Dr. Helene Marsh, President, Society for Marine Mammalogy

Panel Moderator: Sir Geoffrey Palmer

Panelist Participants: Dr. Nick Gales (Australian Antarctic Division), Dr. Diana Reiss (Hunter College, CUNY), Dr. Paul Jepson (Institute of Zoology, Zoological Society of London), Dr. James Kirkwood (Universities Federation for Animal Welfare)

Helene Marsh:

Welcome to the panel discussion on the humane killing of marine mammals. We're all here today because of our shared passion for marine mammals. As marine mammal scientists, we're incredibly privileged to be allowed to observe and handle wild marine mammals in ways that are not available to the wider society. In 2009, the society took a big step in the development of its ethical framework, and published guidelines for handling marine mammals. These guidelines, which represent the outcome of seven years of discussion, represents the ethical standards of the international marine mammal scientific community and define the values that characterize the researchers belonging to our society. And thanks to their hard work of the ethics committee lead by Charles Littnan, the society went one step further this year and produced a code of professional ethics which was accepted in the media ballot, and will be published in our journal next year. The code contains guiding principles and is assisting the society to fulfill its mission to promote the global advancement of marine mammal science, and to contribute to its relevance and impact in education, science, conservation, and management.

The next step for our society is to use our scientific expertise in physiology, behavior, cognition, and veterinary medicine to begin a dialogue on the ethical issues associated with the killing of marine mammals. An expert working group will be established to summarize the information from the International Whaling Commission, the North Atlantic Marine Mammal Commission, the American Veterinary Medical Association and other agencies, and offer a perspective from our society where appropriate so that our guidelines are relevant to all marine mammals. The society's board, which I chair, considers this to be a reasonable first step that avoids the normative question of determining when it is ethical to kill marine mammals, and when it is not.

We believe that the vast majority of our membership considers that if a marine mammal is going to be killed, regardless of the reason, it should be done in the most humane way possible. And the expert working group will develop a white paper and associated online resources over the next year, and make these available to the society and the general public. Today's panel provides the opportunity for us to learn from experts about animal welfare science relevant to the humane killing of marine mammals. This is a first and important step in discussing this sensitive issue, and a crucial step in informing the society's best practice guidelines. It's important to note that our guidelines will consider the manner in which we interact with marine mammals for research. Commercial take and indigenous hunts are currently beyond the scope of our guidelines, and are not going to be discussed today, however they may be the subject of future discussions, and we are aware that many of you think that that will be very important.

The science that might inform the killing or the consequences of removing animals, I hope will be a legitimate topic for subsequent discussion, and we will provide people with appropriate expertise to answer the online questions that are beyond the scope of this panel. Some of you have said that this panel is not broad enough, and we accept that. We did try very hard to broaden the scope of the panel with great difficulty. So, the panel is really going to address questions that are appropriate to its expertise today, accepting the need to broaden the discussion. We're not going to be producing a statement at the end of this session because the session is the beginning of a conversation, not the end. I've had guidelines for handling wild marine mammals which is the call of our mission. I expect this conversation to last several years. This topic is much tougher than the handling of wild marine mammal topic because it challenges the call of our mission as a society.

As an international society, we have to be careful to respect the diverse values of our membership. For example, the right to hunt marine mammals for customary purposes is enshrined in international instruments such as the convention of biological diversity which "protects and encourages the customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use." The right to harvest some marine mammals for customary purposes is formally recognized by some international treaties, such as the Torres Strait treaty between Australia and Papua New Guinea and in the laws of some countries. The Conservation Committee and the Board of the Society as a group develop presidential letters as a mechanism to provide timely comment on the science base for issues related to the conservation and management of marine mammals. We do this in situations where the board believes the majority of the society's membership will agree with a substantive position taken in the letter. And during my term as president, the society has written letters to the governments of Japan, Myanmar, New Zealand and Panama. You heard about some of the results of some of that today. In choosing to send these letters, the conservation committee and the board consider two factors. Firstly, the scale of the problem and the scientific evidence around the problem, and secondly, the likelihood of the latter making a positive difference. And there are some occasions when we've been advised that a letter is unlikely to make a difference, or that it might make the situation worse, and in those occasions, we don't send a letter.

I recently went to Myanmar as some of you might have read on my blog on the website as a result of that government's response to my letter offering technical assistance from the society to help conserve the Irrawaddy river dolphin population. Andy Read talked about the plight of the Irrawaddy river dolphin populations earlier this afternoon. We offered the services of working groups, similar to those that Andy talked about, that was established to provide the Cambodian government with advice about the conservation of the same species. My visit taught me that unless the situation for that species of that population improved rapidly, the population will be extinct in the next few years, mainly as a result of illegal electrofishing. When Randy Reeves read my report, which was jointly written with my Myanmar counterpart Anne May Chit, he remarked that I could have replaced the Irrawaddy river dolphin with vaquita and electrofishing with gill netting because the root causes are the same. Poverty and governments. Further scientific research will only be useful if the social and legal circumstances around the situation in Myanmar change. I think that's going to be true of so many small, coastal and riverine marine mammals. If our guidelines on the humane killing of marine mammals will influence practice, they will also need to be implemented in the context of the human dimensions relative to the issue at local scales. As with the Irrawaddy river dolphin and the vaquita, we have to recognize our capacity to make a difference will depend on how successfully these human factors, which Andy and Barb Taylor and others have talked about so eloquently today, are understood and addressed. This is the basis of the dugong project lead by Donald Kwan who's here which is working with experts in economic incentives such as micro finance loans for artisanal gill net fishers in low income countries to develop alternative livelihoods.

My group has worked with the indigenous dugong and turtle hunters in the remote regions of northern Australia for many years. One of my former students was horrified to watch a green turtle being butchered on a remote beach by traditional owners with the native title right to hunt. My former student expressed her concern to an indigenous counterpart and close friend. He was amazed at her reaction. He believed that butchering the turtle that she found so confronting, was essential to the conservation of the animals hunted by his people. Ten years later, the indigenous Australians better understand the concerns of the wider community about their butchering practices, and several groups are currently working with veterinarians to develop a method of humane killing that is compatible with their cultural beliefs and with scientists, including my group, to ensure that their hunting is sustainable. Egil Ole Oen from Norway provides another example of this approach. His professional and dedicated efforts working alongside Alaskan hunters at their invitation has led to the adoption of modern killing techniques in the form of penthrith harpoons being incorporated into traditional ice age hunting practices. Bowhead whales are now struck and killed with greatly improved efficiency and enhanced welfare outcomes. And I believe these examples demonstrate how we are going to have to operate if we want our science to make a difference. As is appropriate for discussion organized by scientific society, today's panel will concentrate on the animal welfare science of humane killing.

Our panel members will do this by responding to and discussing questions that have been submitted by society members prior to the meeting via our website. I want to say that all these questions are now available to the membership via the conference website on the wiki. Lead by Charles, the working group organizing the session has selected questions for discussion by the panel to encompass the major aspects of the issue, and are appropriate to the expertise of the panel we have today. All the questions are posted, including those that we will not be considering today. I hope that this expert panel will help you appreciate the dimensions of this issue, so that you're going to be in a more informed position to make up your own mind about the technical aspects of the complex challenge of killing marine mammals humanely. I regard this as a very significant reflection of the maturity of our society that we can now have this discussion.

We're very fortunate to have a very distinguished New Zealander to facilitate this panel. Sir Geoffrey Palmer, a former Prime Minister of New Zealand was its delegate to the international whaling commission from 2002. This experience makes him outstandingly well qualified for this role. Sir Geoffrey has been listed on the United Nations' global 500 roll of honor for his work on environmental issues. He's a member of the Queen's privy council, a knight commander of the order of St. Michael and St. George, and honorary companion of the order of Australia. He holds 3 honorary doctorates, has an extensive list of publications in legal journals and is the author or co-author of 12 books, including one that was published just last month. I now invite Sir Geoffrey to explain the rules to this afternoon's panel discussion, and facilitate the event which will last until about 5:30 pm. Thank you.

Sir Geoffrey Palmer

Thank you Helene for those remarks. It's my duty to facilitate this session on humane killing of marine mammals. I want to enter a caveat. I am not a scientist. I am a lawyer. I have done a lot of international environmental law and domestic environmental law, and one comes into contact with scientists in that regard, but I'm not a scientist. Although I've had the opportunity in the International Whaling Commission to observe scientists, and I've learned a lot there. As a matter of fact, I wondered if this was a meeting of the IWC, there were so many scientists here from there, and it's wonderful to see them all again in a somewhat happier environment than that one is.

Can I say that the first experience I ever had at the International Whaling Commission was a workshop on this very topic held in Berlin. And in my memoirs that I just published last month (they are 800 pages, I don't expect all of you to buy them), I just want to quote about that first meeting. At my first meeting there was a fascinating session on whale killing methods. New Zealand has many whale strandings and we often have to euthanize whales that are stranded. We use for this purpose a Russian anti-tank gun from the Second World War. We produced through the workshop our expert armorer from the Department of Conservation to describe the extensive research that had been carried out in its development, and the Russians became very excited at our presentation. In consequence, our relations with that delegation were greatly improved, and the Norwegians also showed at that meeting they were excellent scientists and very serious minded people. I recall a presentation still from that meeting by a female Norwegian scientist with pictures of her walking inside whole whale carcasses. And, of course, the interest that New Zealand had in this matter was strandings, but one of the questions in front of this meeting is also the question of how one kills a cetacean at sea in a humane manner which may be a somewhat different issue.

Now, what we are going to do in this session is simply this: first I will ask the scientists in the panel to introduce themselves, then we will go through each question and there will be an interactive debate between members of the panel in which I won't take part since I'm not qualified to. At the end of it all, Nick Gales will give you some benefit of the wisdom about what we learned in the previous hour. Let me say that what we will do now is begin with a short introduction from each member of the panel about his or her experience and background. We will start at the right hand end as I see it from James Kirkwood.

James Kirkwood

Thank you Sir Geoffrey. So I'm a vet. My career has largely been in research, and largely to do with captive and free living wildlife. I spent 12 years as head of the veterinary science group at the Institute of Zoology at the Zoological Society of London, and since then for the last 17 years, I've been the director of the University's Federation for Animal Welfare which is an organization based in the UK, but with international activities. It's main role is the promotion of animal welfare science which is about methods of trying to determine animals' needs from their own point of view, and how those needs can be met. I'm editor of the journal *Animal Welfare*.

Nick Gales

Thank you Sir Geoffrey. Good afternoon everybody. As a result of my questionable judgment, and even more, as a result of your questionable judgment, I am the president elect of this society. I'm also the chief scientist of Australia's Antarctic Program which includes our Australian Marine Mammal Center. I'm one of those scientists that sit within government and sit at the policy interface between science and policy, working closely with colleagues around the universities, and working closely with our ministers and decision-makers in government, and it's an interesting place to sit, as those of you out there who sit there as well will know what I mean by interesting. I've dealt with quite a few of these types of issues in the past. Hot-iron branding issues, issues that arise out of that and it was my privilege to be part of the development of the Society's guidelines that were ultimately published in 2008. It was interesting at the Vancouver meeting in 2001 when the idea of having guidelines that the whole Society could agree on about the manner in which we simply handled our subjects as a part of our science, at that time, there were many people who were uncomfortable about that. I hope with the passage of that time, I think that's now settled down into a much more sort of comfortable space for everyone and I guess this is that next step into another area.

Paul Jepson

I'm Paul Jepson. I'm from London in the United Kingdom, and I've worked at the zoological society of London for 20 years, mainly on UK strandings. I'm a veterinarian, and a veterinary pathologist, so for most of my career, my cases have already been dead before I received them, so there's very little welfare issues. Working on stranded animals as a pathologist, many of those animals that do strand on the beach, strand dead and they're found and then we receive them. Also, a proportion strand alive, and when they do, that presents a whole range of challenges, of welfare issues in terms of whether they get rescued or whether they need to be euthanized. If they do need to be euthanized, how we can effect the euthanizing in the most humane way. Quite recently I've been involved in discussions within the International Whaling Commission on optimizing euthanasia for stranded cetaceans, not just in the UK, but everywhere in the world.

Diana Reiss

Thank you Sir Geoffrey. I'm a cognitive psychologist at Hunter College. I've been studying marine mammals for over 30 years, and I've had an interesting path here because I've not only tried to understand the nature of their cognitive abilities and their communicative abilities, but I've also been involved in rescue and rehabilitation out in California where my lab was. I served on the animal welfare committee for the Association of Zoos and Aquariums for 6 years. I have been involved in discussions trying to bring scientists and professionals from the zoo and aquarium community together and our society in some of the issues that we are going to be talking about today.

Sir Geoffrey

Question 1:

Alright, we are going to now go to the questions themselves, and we'd like to bring the first one of them up, and I will read it. The first question is: Is it appropriate to use the term "humane killing" when intentionally killing a marine mammal in good health? I will call on James to address that quote first, but I'm sure other panel members will want to follow him.

James:

Thank you. It's worth perhaps thinking a little bit about the word "humaneness" to start. It tends to be used in circumstances where there's a presupposition that the animal being killed is being killed for a justifiable reason. There are two ethical concerns relating to this. One is the rights and wrongs of the killing in the first place, and the other one is if it is decided that the right thing to do is to kill an animal, how best to do it to minimize any risk of suffering. The word encompasses those two rather different concepts. The other thing about it is when you're addressing the second of those two things to do with the welfare aspects of the method chosen, sometimes the word is used as if it's an absolute. A method is humane or it isn't, so some people can use the word in that way. The word wasn't developed as a scientific concept, it was developed in society so it's not a precise scientific term, so it's important to think about what is meant by it. Some people think that the word humane means that if something is humane it is absolutely ok, that is the animal suddenly isn't there, there is no fear or pain. More generally, the word is used to mean it's the least worst method. So it can be humane to kill an animal to prevent further suffering, for example, if the method being used is simply the best available. A lot of the methods that are described as being humane, fall a long way short of being perfect. I think it's useful to bear in mind that it's a rather blurry term, and it's necessary for us to be precise in the way we use it. Often it's better to use the word "welfare" than humane. It can be a misleading term. I'll stop there.

George:

Well James, let me just press you a little harder on that though. If you're having to draft a statute in which humane killing is going to be defined, what are you going to say?

James:

Ok, the method which is the "least worst", now that wouldn't be a good legal term, Sir Geoffrey but the ideal that we're all aiming for is one that causes an animal to become suddenly unconscious with no fear or pain or other aversive feeling. So that's probably a good way of putting it.

Diana:

So I think if we dig a little bit deeper into some of the implications of the question, we would ask ourselves: For a healthy animal in a population of other animals, is it humane to kill it? Is there value to an animal, to a dolphin, to a whale if it's healthy, should we end its life? It gets into what justifies that kind of taking of an animal. I think that's the question. I don't think we necessarily have the answers up here on the panel, but I think it's one of the questions that we want to open up for thought and discussion. I think it's what we're all grappling with now, and we have to face practices that we're confronted with in the world. Is that even the right use of the word "humane"?

Nick:

I think one of the parts that is really complex about this, and I think both of the previous speakers touched on it though is the way you interpret it in the context. If one of us was to kill a marine mammal for the purposes of science, is the best available method going to be the same one that you arrive at for an indigenous hunter killing the same species or someone going out to commercially kill a marine mammal, or somebody who finds a marine mammal on the beach? I think the obvious point in that question is that there are clearly different solutions, certainly within the International Whaling Commission in the long lasting and polarized debate about scientific whaling, the point has been made that if you're killing an animal for the purposes of science, you are expected to achieve the highest of standards in terms of welfare that can be accommodated within the requirements of the science. Again, I'm not sure that I could respond to Sir Geoffrey in a way that would go into legal language, but I think it's naive not to consider that the context of an indigenous vs. a scientist, vs. someone commercially taking an animal somehow needs to be accommodated because that's the real world context.

Paul:

I think that one of the things is a fact in general about these very difficult issues is that a lot of them seem to get better over time for all different reasons. Societal reasons, people's perceptions as what's acceptable and what isn't will change over time. If we mentioned 100 years ago or 500 years ago having this discussion here, would even people care about the word "humane" in terms of killing animals. Maybe if we fast forward 100 years or 500 years, then maybe people's perceptions of what's acceptable would have shifted, and also the technology that makes is available to improve the welfare aspects, or the humaneness of killing of animals whether it's euthanasia, or if whaling still occurs at that time. Who knows, maybe there will be no whaling in 500 years, I don't know, but it's possible. So, I think that there is at any one point in time we can always do things better, but it's a natural tendency of societies to use the shift in public perceptions of what's acceptable which tend to move in a more animal welfare direction I hope. That's my belief, and also coupled with some of the technological adaptations that we've seen including in the whaling issue in the whaling industry where things actually are much more humane than they were even just a few years ago.

Geoffrey:

Well, if you use these two words "humane killing", it would suggest that killing that is not humane is not right. If that is the case, the question is: to what extent do we know when the killing is acceptable? It seems to me that that is bound up in a large number of animal welfare issues of some complexity. I wonder if we've answered the question whether it's appropriate to use the term or not. We have had some good discussion in the panel about the term, but what the person asked in the question is: is it appropriate? I want the panel to tell us!

James:

Well I'll point out that it's very widely used in the context of other animals. Society generally accepts, parts of society in some parts of the world, accept the killing of animals for food and other products, and they do expect that that's done humanely, meaning the best possible way. There's laws written to enshrine that. So, society accepts that animals are killed for food, it accepts that animals are killed, so called pest animals, I see in walking down the street that you can buy a possum skin hat, and the advert outside the shop says "buy a possum skin hat, save a kiwi". So, here we are killing possum which of course is a non indigenous species which is a good thing to be doing. So society accepts that, and I think that there's rules here in New Zealand, quite strict rules, about how to kill possums as humanely as possible.

Diana:

I will add one piece to this just to get us all on the same page because I don't know if everybody know there's a real difference between animal welfare science and animal rights. Most of you probably know this, but I will say this anyway. There's a lot of common ground which is important to state. So, in general, an animal rights perspective argues that animals should not be used by us. We shouldn't eat them, we shouldn't use their fur, we shouldn't kill animals. They have a right to live. They are autonomous. An animal welfare science perspective, because animal welfare science is a science; it's a growing science, argues for taking a more pragmatic approach. In this world where we eat animals, and we often wear their skins, and we use them for entertainment, whether you agree with it or not, and they're in our science. How do you provide them with the best possible welfare? That's driven by our best scientific knowledge at the

time which, of course changes, but it's what we know. I think that's important to remember. In this question about humane killing, perhaps what we know as scientists can inform us, or help us answer that question. Is it humane to do X, Y, or Z to a healthy animal?

Sir Geoffrey:

Alright. We have clarity to some degree, not to a degree that I would be happy with, but we would nevertheless need to go to question 2. Question 2 is this:

Question 2

Over 250 marine mammal scientists have signed a statement circulated informally at previous Biennial meetings condemning the dolphin drive hunts. This perhaps represents just a fraction of those members that would sign such a statement if they were provided the opportunity to express their support for this, and similar, issues involving marine mammals. Why does the Society steer away from taking a position on controversial policy issues, like the dolphin drive hunts specifically, when these issues maintain a high profile in the public domain, requiring Society engagement in responsible advocacy as the expert body for marine mammal science?

Diana:

So this is an area that I've been active with I suspect that's why I'm up on this panel today, and I thank you for letting me speak. I think the issue of the Taiji dolphin drive hunts, just to get everybody on the same page again, is that for many years now these drive hunts have been going on. Dolphins of many different species, and small whales are herded in a commercial hunt into a small cove in Taiji. This was going on in other areas of Japan as well, and there are other hunts in the world such as in the Pharaoh Islands, it's not just Japan. This is a very concentrated hunt yearly starting in September, going through April where these dolphins are herded, and then they are systematically slaughtered. The slaughtering has been documented in video, and has been documented since the 1990's. This is not our first knowledge about these dolphin drive hunts. There wasn't a scientific voice speaking out about what we know about dolphins, and having any role in the scientific arena. In the IWC, they don't cover small cetaceans, and they certainly don't cover these hunts. The Japanese animal protection laws do not cover small cetaceans. It's important to mention this because the Japanese welfare laws do cover other animals used in the food industry and they also cover domestic animals, but there is no protection for dolphins or smaller whales in these hunts. This is regulated by the Government of Japan, and certain quotas are set, and over the years, the quotas have been about 2,000 animals per year, a little bit more. So the question is, and again these are questions, not answers. The question is: Do we as a scientific organization, or society for marine mammalogy have or feel that we have the collective expertise to help influence policy; global policy. In the case of drive hunts, whether they occur in Japan or in other areas where there are these slaughters for commercial purposes. We're not talking about subsistence, we're talking about commercial purposes. My colleagues and I, many of you who are in the room right now who started circulating the petition suggested, yes, we do have collective expertise, and we asked our society several years ago to write a presidential letter addressing both the conservation and the animal welfare concerns.

After much deliberation and consideration, our society decided they would indeed send the letter, and it's been sent twice to the Prime Minister of Japan. But, the letter omitted our animal welfare concerns. It only spoke to the numbers, and animal welfare can affect numbers, and it's a whole other ballgame, and that's what we're talking about today. This has been a big issue within our society, and again, it's something we want to bring up in this audience so we can start thinking about: can we have a voice, and help change policy in foreign policy? Barb Taylor said some things today I just want to mention, that really rang true to me. Barb, you said we need to speak in one loud voice with a common message. Now, individually, we can speak out about issues that we feel strongly about (again we've been working most of our academic careers trying to understand these animals) we can and we do individually speak out. But there's a lot more power when we have a policy statement. It may not be an advocacy statement, and we're not asking the society to become an advocacy society, but it sure helps if we have our organization, and our collective expertise commenting in a position statement in saying: given what we know about veterinary medicine, physiology, cognition, communication, sociality, and we know enough that this is inhumane. I think we know that it's inhumane. If you see the slaughter practices, and we can certainly talk about it, it's been published, we presented it at the meeting, this is a very inhumane procedure. It is not accepted by the American Veterinary Medical Association for killing. It's not an acceptable method for slaughtering even if you agree we should be eating dolphins and whales. It's not an accepted method of slaughter, and the actual arguments have been that it is humane. That's what's coming out of Japan. This is a more humane way. The animals are rendered unconscious almost immediately. It is simply not true.

Nick:

I think to some extent, this is really the issue that drove mostly the discussion around having this panel. This whole panel discussion and opening up the degree in which we enter into this type of area, and the manner in which we do so. There's certainly a wide range of views. I doubt that very many people who have seen the video of those animals being killed would feel that it's an appropriate way to kill an animal whether it's a perspective of because it's a dolphin and you think it's special. The difficulty has been that most of our letters up until now have been deliberately and specifically focused on providing commentary from a group of experts in marine mammal science particularly in the area of conservation science. So if you go to our website and read the 20 letters, all of which are available to read, they're all about conservation science issues. None of them are about welfare science, and they're all several flying monkey kind of issue, using Andy's complexity wickedness of problems. Many of the problems we've written about remain as serious, or more serious than they were when we wrote. Some we heard, In Lorenzo's excellent talk, where we think we are making a difference in those letters. So it did represent something that is very new for the society. I think there is a view among the group that we need to ensure that if we go there, we are doing so genuinely on behalf of the whole membership, and we probably have a large diversity nations represented here than many other meetings that are held at least as a proportion in the U.S. simply because the ratios change, but while we are very much a North American dominated society, we are a global society, and we need to represent that voice.

I think there's been some conservatism, and that's frustrated some members. I will come back to that at the end. I think that frustration is, although it's regrettable, it's part of this slower process of affecting change. So, this dialogue, I guess in essence, and picking up on what Diana was saying, I think is very much a dialogue for the whole membership to engage in as to the degree to whether we ought to be engaging as much in welfare science as we do in conservation science, and if we do, how we do that. Do we have the right membership to do that? Are we the right society to be doing that? Should we align with other societies to do that? I'm not going to give an answer to that. I mean I'll have my own views like everyone there, but I think we need to work out collectively how we deal with that. I will just hand over to the other panelist by finishing off by saying that Peter Hodgson's talk earlier on which I enjoyed really greatly, gave us a perspective of how scientists should be communicating through the decision makers in different countries. If we'd had more time for questions, I wanted to ask him the question about the risk individual scientists and indeed societies of scientist take, if they're not careful about the advice they give, and if they are seen to speak beyond the strict limit of their expertise to inform good policy development and the risk they have of devaluing the advice they give if they move into an advocacy role, which is a role that is usually reserved for others outside of the immediate science area. It's not black and white, there's not a line that you cross. There's a grey patch in the middle that is down to subjective judgment, but I think this also aligns with those kind of decisions.

James:

As some people have alluded to today before, our knowledge of animals has grown colossally. We know far more about many aspects of their biology, so the ways in which we used to interact with animals are increasingly coming under close scrutiny. Things are being reexamined and that process will no doubt continue for many many years. I think it is important that those with special knowledge engage with that debate, and it's good to see that this society is doing that, and beginning the process in this way. I'm not a member of this society, but I think it's an important debate to be having. These are very difficult issues. I think it's necessary for groups to gather and try and for consensus positions because very one of us has our very own little position on this issues, but we're usually conscious that there's people to the left of us that think an opposite thing in one way, and people on the right that think we're not thinking hard enough in the other direction. So there has to be consensus. People have to get together and form joint position statements. I guess this is a first step in this society doing this.

Sir Geoffrey:

It always seems to me that scientific findings are not self executing in any real sense. Science proceeds on the basis of contestability, and all science is contested, and that which remains uncontested seems accepted, but it can all be contested in the end. It seems to me that the question your debating is whether to go down the primrose path towards policy, and if cost, dangers and risks lie there because you'll be ambushed by political interest groups and indeed by politicians themselves who do not like the facts to get in the way of a particular conception that they hold. The difficulty with political decision making is that it isn't rational. It is beholden to a number of factors, and rationality is not prime among them. Voting behavior is. In that instance, of course, scientists have a lot to contribute. I do think that. The difficulty is how to modulate that contribution without sort of strangling the source of the knowledge and preventing it from being effective. That's not an easy trick I don't think. But, it does seem to me that the policy process, at least the experience I had of it, is sufficiently unhappy and irrational. That at least science that speaks the language of rationality has done since Newton, I think, should allow to have a place in the sun and to contribute more. Now, the fact that scientists disagree with each other is no more relevant than lawyers disagreeing with each other. I would be in favor of the scientists being rather more adventuresome.

And on that note, we'll go to question 3.

Question 3:

Given the vastly differing sizes among great whales' sexes and species, is it possible to consistently guarantee a humane kill using the same weaponry on animals of different sizes? Data from nations conducting aboriginal subsistence whaling of large whales show longer times to death and higher struck and lost rates than commercial whaling operations. Are there any other tools, techniques, or training that could be provided to balance operational and welfare concerns so that aboriginal whalers reduce times to death and struck and lost rates but also improve the efficiency, safety and humaneness of their hunts? Paul, you will open on this issue.

Paul:

I think there are two questions in this very long single question. The first is about animals of different body size and sex being killed with a common method within the commercial whaling issue which is mainly the penthrate grenade. The second issue, I suppose, is the welfare gap between the methods for commercial whaling, and the aboriginal methods. So, I'll take the commercial whaling question first in the order. My first exposure to the current methods of killing whales in the big commercial hunts was probably well over 10 years ago. I was asked by some animal welfare NGOs within the United Kingdom to review some of the science that was emerging from Norway on these new techniques with the penthrate grenades that are used these days in commercial whaling. The remit was basically to find the flaws in the science, and having read the science very carefully, it was a PhD thesis of Siri Knudson from Norway supervised by Egil Ole Oen of Norway, and also published in a series of quite high quality neuroscience journals. Having spent a lot of time over several weeks reading the science, then coming back to the science, reading some more of the background of neuropathology in relation to blast trauma because these are explosive devices, I came to the conclusion that actually the science was very good, the science was very water tight, and the claims about the welfare benefits of greatly reducing the time to death from the moment of the impact of the harpoon, and then the explosion, and then the huge blast over pressure, and that's what actually kills the animal. It's not the actual impact of the harpoon. That can hit anywhere between the head and thorax, and as long as it hits the whale in the right position, at the right velocity, then the detonator, the penthrate grenade will fire, and then there will be a very large and rapid explosive force which will then go through the animal's body and will produce not only superficial hemorrhages in the brain which you can see on histopathology, but also hemorrhages deep in the cortical tissue, deep in the inner parts of the brain. This is analogous to a lot of the research on human blast

trauma, and rapid death in military, and in experimental science of humans and experimental animals. I had to report back that I thought that the science was good, that this new method seems to be much better than previous. I was one of actually three people asked to review the science at that time. The second person was a professor of neuropathology at Bristol University in the human pathology, and a third person, I forget who, but all three of us reached effectively the same conclusion that the science was good, and that this was producing a much shorter time to death than had previously been associated with the commercial hunts. That was my first exposure, I suppose, to the penthrite grenade which is now widely used.

About 10 years ago there was within the International Whaling Commission, which of course is the competent body, the regulatory body for whaling including the methods and the humaneness of the methods of killing in the whales as well as the conservation aspects of whaling. About 10 years ago, Nick Gales who is on the panel. along with Joe Geraci actually reviewed, along with a long with lots of other members, scientists from around the world, looked at data from the Norwegian whaling, and actually again, we agreed that the penthrite grenade was the best practice, and the Norwegians had made a lot of advances, not just in terms of the penthrite grenade itself, but also the delivery systems and some of the secondary rifles that are used for much more of the number of cases that don't die instantly with the penthrite grenade. So that was 10 years ago, and I think that's probably the same position we're in now, that the penthrite grenade is effective in terms of producing a fairly rapid kill, and was more effective than anything that was done previously.

Given that scenario, it leads to the second part of the question which is: if the use of the penthrite grenade, even in whales big or small produces a very effectively a humane kill, then that opens a welfare gap between methods that are still used within aboriginal whaling, so are there ways, tools techniques or training that could be provided to improve the welfare aspects of aboriginal whaling? Absolutely, they can. In fact, already we've heard in the opening address that some of the aboriginal subsistence in Alaska and similar areas have actually adopted the penthrite grenade and have learned the techniques at considerable cost as well, it must be said but, it has produced the same benefits in welfare. Is there still an issue? Can we do more? Of course we can do more. There's always more that can be done to improve animal welfare. In terms of the aboriginal whalers then, that again would be a spectrum of discussion, at maybe one end of the spectrum how the aboriginal culture will be paramount so they will be protecting a very traditional method of killing whales for subsistence that actually isn't optional compared to the penthrite grenade from a welfare perspective.

The other end of the spectrum we could argue that some of these traditional hunts can exist and continue, but they can actually adopt some of this newer technology to actually improve the welfare. That would be, in my own personal opinion, I would like to see that happen. How we get there, is again a matter of discussion, but I think that there's lots of issues, economic issues, cultural issues and so on, economics not being a small part of this. I think that within discussions in these various fora with the international whaling commission, I think that that is the place to have these discussions. One thing that Andy Read said in his talk earlier today, he said in terms of conservation practice, one of the things is that it's better to develop allies rather than enemies, and I think this really applies in this issue. I would rather go to try and improve a subsistence whaling or an aboriginal whaling hunt, rather than trying to get some down regulation imposed on those subsistence whalers and for those cultural and aboriginal reasons, I prefer to actually go and just talk to them and say: Ok, imagine where we're going to be in 5 years, or 10 years, 20 years. Are there things that you would be open to factoring into your practices of subsistence whaling that actually could improve the welfare of the animal given the new technologies that we've got. I think that, I think, would be the best way of taking these issues forward.

Diana

Yes, I agree. I think that this is again another place for our science to help inform future actions. I think the more we can share with other people and other cultures our scientific findings, it can also influence how they view the animals. Our viewpoints change. The way we value animals now is different than we valued them before, and cultures can change their perspectives, and be more open to applying new procedures that are more animal welfare oriented. They may not stop hunting, they may continue, but they can improve the methods. Again, that's perhaps where we can play an important role as scientists.

James

So the question here is, is it possible where animals are killed, is it possible to do it more humanely? That is essentially what the question is. I think the science of humane killing of domesticated livestock is one where there has been colossal improvements, and science has really helped the technology. The methods that are used nowadays can be very nearly meet the human ideal of making animals immediately unconscious with very little fear or pain. None of us are born with the knowledge about how to do these things any more than we're born with the knowledge of how to be brain surgeons, so there has to be science applied. Technological developments, training and development of best practice. For me, if this job has to be done, then those things are necessary.

Nick

One of the interesting discussions in the IWC around this has been reluctance by some of the countries to bring the data on whale killing statistics in because they feel they are vulnerable to criticism. I think there is a bit of a tension potentially here for this society to deal with in a way, in that if the motivation to engage in a debate is on the basis of animal welfare and improving welfare outcomes for animals that are killed for whatever reason, if you genuinely engage and dramatically improve the welfare outcomes of a dolphin drive hunt or any other form, you may make that hunt more globally acceptable, and for some people that will challenge their own values that they are opposed to the killing of the animals outright. I'm not giving a view on that, I'm just pointing out that there's a very obvious tension that all of us as subjective individuals will have a range of views. Egil's many years work with hunters from many indigenous communities was motivated purely around, and very focused on the science of the welfare outcomes, and he was extremely effective in driving that. I think

there is some tension in there, if we were to write a presidential letter to say: look we're really concerned, but we have a great group of experts that can come and make it a more efficient kill. I wonder how comfortable a large portion of the society would feel around that.

Diana

I think there's something else that I'd like to bring up here. It's when we start talking about our science about these animals; I'm going to go back to Japan for just a moment because we are talking about the drives. Japanese government and Japanese scientists have actually led the way in terms of primate research. They are clearly out in front in terms of what they've learned about the great apes, and now the scientists in Japan have worked very politically and very carefully to get protection for the great apes, and now invasive research on chimpanzees is not happening. It's because it's been driven from within their own society. I think this is a way that we can start working collectively with our colleagues. We've got many colleagues in Japan who have come and said: let's work together in trying to raise the awareness within Japan about the Japanese hunts. It's not that we're pushing from the outside, it's been a collaborative effort. So I think that there's lots of room to change how people feel about these animals based on the science when we know X,Y, and Z. Perhaps the hunts would stop altogether with a change.

Question 4:

Given that vastly more marine mammals are killed in a protracted and debilitating manner as a result of entanglement in fishing equipment than are directly hunted, does the Society think that its current focus on killing is appropriate? Nicholas.

Nick:

Thank you Sir Geoffrey. This is actually, when you have a look on the website, this is paraphrased form a slightly longer question, and from the author of that question, I hope we have captured the intent of it. So the interesting thing about this question is that it's exactly that collusion of both conservation and a welfare issue. We all know, we've heard for many many years about the scale of the conservation impact of such things as entanglement and the many other threatening processes that all of us in various ways work around. I found this morning's talks absolutely fantastic and we heard about some of the great challenges, some of the setbacks and advancements that are being made in conservation science, but in none of those talks was the focus on welfare. If you think back through those talks if you think about what are the welfare implications for a Hector's dolphin becoming entangled in a gill net, or for a Baiji living in the Yangtze river for those of you that haven't been through there, to me it's extraordinary that a fish can live in that river when you see nothing but nets lined up, and the state of the river. There are major welfare implications in the manner in which all of these animals are killed. My personal view is that of course the welfare aspects of those forms of death that are vastly more protracted than the 10 or 30 minutes sometimes that it takes to kill a whale in some circumstances is an example of the years of pain, pathology, debilitation, that are caused by an entanglement is the example that's given and they're a very very serious issue, and I think they are central to this society's mandate. As Helene said at the start of this is the start of that conversation about embracing the welfare science aspects and perhaps following Sir Geoffrey's clarion call to be bold, this might well be an area in which the society engages more.

James:

Yes, the issue here perhaps is intentional injury vs. unintended injury. We have a much greater responsibility when we don't mean to than when we do. Although there's less pressing interest in the harms that we do unintentionally, they're often the ones that are much more important. If you asked the animals themselves which were the issues they'd be concerned about, it would probably be the ones that hurt most for longest, and affected most animals. Those are often the things that we do unintentionally. Being entangled is a very serious welfare problem, I think. Some of the stories that have been published about right whales dragging fishing gear around the oceans for months on end with the ropes cutting into their tissues, they're absolutely terrible situations. I think it's a very serious welfare problem, and one that needs to be addressed from the welfare point of view.

Nick:

I just want to respond on behalf of the author of that question, because I know that one of the comments that the author will make is that there are unintentional consequences, but I believe that author would say that we know when we put lobster pot lines in certain areas that interact in space and time with the migration of a large whale population, or an endangered species of dolphins. We know the consequences and the margins between intention and unintention are blurred. So, I'm just wanting to put the case for the author of that question.

Paul:

I don't have too much to say on this except to use something again from Andy Reid's talk earlier today. He talked about these sort of five star categories of conservation problems, and I think this is a five star category as an animal welfare issue, and I think this is a five star problem as a conservation issue, and this issue is huge. I fully agree with the rest of the panel on this one. I think this is a huge issue and this is the start of the discussion, let's start it now. We need to continue it because it's an enormous issue.

Diana:

I agree.

Sir Geoffrey:

Alright, we haven't had too much division on this panel. It's a great disappointment to me. Perhaps we could go to question 5.

Question 5

Society members have increasingly raised concerns about animal welfare issues associated with lethal takes of marine mammals, resulting for example, in this panel discussion. Considering wider societal trends against invasive and lethal research, such as replacing the use of primates in research, is it time to revisit the Society's lethal research policies and guidelines and review them in light of emergent knowledge?

Nick:

When the guidelines were published, there were discussions. We've had a range of workshops and good discussions at the biennials. The intention was that they were living documents. Those of you that have read for example the section on lethal take, I hope many of you have, if you haven't please look them up in the publication. Marine Mammal Science, you should know the journal. They were a consensus view, but they didn't represent the view of every individual. They were as far as we could take the language at the time, in our view, and were put through the vote and came through as an acceptable set of guidelines. But it's absolutely the right time; it's always the right time to review those so long as the review is done in such a way that they are updated in a manner that reflects the new level, wherever that is, on where the Society as an inclusive whole feel we can take them. So what's interesting about the language that's in there now, it talks about the aspect that the killing of a marine mammal needs to be legal in a legislative sense, Sir Geoffrey will be pleased to hear, within the country it's carried out in. It talks about using non-lethal techniques if it's possible, and minimizing the welfare outcomes for the animal. It's mute on a view on whether or not the science is important enough to kill the animal. Those areas again, there's values associated with things like that, but at the core of questions about science is the value of the work you're doing; asking important questions.

I've been part of a court case on scientific whaling between Australia and Japan and the case was heard in the International Court of Justice this year. There's no finding from the court yet, it's still deliberating, but at the heart of that court case, we made the case that in our view, untested by the court, there was an element to which what was happening with the killing of those whales was not science. Now that went down to a whole lot of questions about asking important questions that you could answer. We've heard about this from earlier speakers today, and using the best possible methods that had the highest likelihood of answering those questions, and subjecting the work to thorough peer review, and responding to that peer review; those kind of elements. Now, those are absent in our guidelines and those and any other areas in which members wish to engage in reconsidering, updating the guidelines should always be open. Charles Littnan is the chair of the committee that manages and looks after that, and he was threatening to step down for the next election, but I think we've agreed a number of bottles of wine that will keep him in a little bit longer. The answer is if you have views on this, you should engage. You should engage with that group. You should talk to Charles and the other committee members. You should give your view and we should be considering at all times updating those guidelines and keeping them at a point in which the society as a whole is comfortable.

Sir Geoffrey:

I'm reminded of the quotation "what is truth suggesting, Pilate?" One might add, what is science, I'm not altogether sure I'd rely on a court however eminent to answer that question. Any other comments from the panel? Not at all? So the panel is silent. This is unprecedented and undesirable. I think we probably got to the point though, where we're going to have the president elect sum up this debate, and to show the path ahead. I'm pleased that it's his task rather than mine. It has been, for me, an interesting experience to chair this panel. I must say that I always thought that when I was the attorney general that dealing with judges was like herding cats. It was very difficult to get them all in one place going in one direction. I suspect with scientists, it's even more difficult.

Nick:

Thanks Sir Geoffrey. I wrote a whole lot of notes. I never write notes when I speak which should be a lesson to me because I can never really read and follow notes very well and my computer threatened to crash, but the good part is that most of the underlying points I wanted to make have been actually raised in

various parts. The most important element, and Helene highlighted this at the start, is that this is the start of this proper discussion. I know I said earlier on, there are members who are frustrated and I'll come in a moment to some aspects of that. In my role, I take on the responsibility of ensuring the discussion carries on in such a way that the Society can make progress in this area as far as we can. There are different ways we can act in this space, I think, and these are the areas that I think we need to consider how best we work. We heard the best examples of the best thing we can do as a Society is learning together, but it's our individual actions with others on particular issues. We heard about the incredible advances in conservation space of individual scientists dedicating, Liz Slooten and Steve Dawson, are the best local examples of dedicated effort against a particular issue, and the advances that can be made in that case in the conservation science space. The same is true in the welfare science space, I've got no doubt. So there's what we can do as individuals in engaging in these issues and advancing it, but there are mechanisms by which the society itself can act, and the first of those was the guidelines. We kind of talked about that, and certainly given my view that I think it is timely to review and revise the guidelines. But the guidelines are around aspects of how we interact with our less than voluntary candidates that we press gang into our experiments. So, it's about the science context but I think in respect to the welfare science of how we conduct our science, the guidelines are the way to go about those interactions.

The other part that has stirred up a lot of interest and dialogue have been the use of presidential letters. The presidential letters as I mentioned earlier on, have all been about conservation issues. One of the filters that Helene mentioned briefly in her introduction, and none of us spoke to I think is that question of our motivation for sending the letter. One is that we are the right group to send it. We have the right expertise, we're in the right place, we can give the right advice. That's one, but if we judge that it won't have an influence, that it's unlikely to change behavior, or indeed that it may even galvanize an opinion from whomever we're writing to, then we should be taking those into account. We have scientists all around the world who are mostly engaged in these very large and wicked problems from whom we should and we do seek careful advice on would a letter to your government on this issue be something that you think in your country would advance this issue or not. I think that's part of the consideration we need to make around presidential letters.

It was timely that I remembered that I had this photograph. I actually rushed back to my hotel to grab it because very many of you here will know Phil Clapham and some of you might even like him. Phil has been particularly frustrated by this issue. He's written a letter which is there. Well, he's cross, and he's particularly cross that the Society has been so slow in what Diana referred to earlier on around the letters to Japan on the Taiji hunt, that we've been too timid by half. If you could read the letter, you would see that Phil feels so strongly about this that he has said that he is withdrawing from the Society. So those are strong words indeed from somebody who's been pretty central to this Society as someone with a particular view and perspective. Phil is not someone who is unafraid of giving his voice. You're a mug if you don't listen carefully to Phil. I think it's important, I know Helene recognizes as the president, those frustrations out there. I certainly do in coming into that role for the next couple of years. I guess I'll be getting back to Phil, I already did, in a brief email to say that it's not a good idea to withdraw from the discussion at a time when the Society is genuinely engaging in it. So, it is time for everyone to engage in these discussions. I do think that while Sir Geoffrey's view that we shouldn't be too timid on these things, but we also need to make sure we know exactly what we're writing and why we're writing. We need to make sure that we engage with the right groups, with the right societies, the right other groups of experts who can add to this; the IAAAM, the welfare societies such as James represents, to ensure that we are speaking with competence on an issue and hopefully with influence. There have been criticisms as well about the western middle aged sort of middle income group sitting up here. There's no stakeholders involved in the killing of whales represented here. Most of those stakeholders have little interest in what we're talking about right now. They know what they're doing, they have their own values and drives for doing what they're doing, so our challenge is not to come from on high and give an imperial view on that, it's to learn how to as a society engage constructively in areas where we think we can make improvements in the area of animal welfare science and the conservation science. I think we are extremely skilled in the conservation science space, and the lessons we've learned in that area, we should apply to this. I don't feel timid about engaging in the welfare science. I would feel concerned about becoming a society that is writing letters that move into opinion and advocacy, and I'd feel concerned about letters and representations from the society that were not carefully thought through about the degree to which our intervention will help move that issue forward in a constructive way. So, I know Charles had asked me to really stress the point that he hopes that people will engage in this debate. I know Helene and the rest that group, and I and everyone here hope that this dialogue at least has raised some issues. It hasn't been an open dialogue where you've been able to ask questions and have that feedback. There was a decision earlier on not to do that, but to open up the questions; we have tried to represent the questions that were put forward as broadly as possible. Hopefully we've done an ok job with that. I think that we're almost a middle aged society now. We're in our early 30's, sorry for you in your early 30's who don't think you're middle aged yet. But, we're also dealing with another difficult, wicked problem later in the week, on issues of killer whales in captivity. I think that it's great that the Society has these discussions. We shouldn't be shy of them. We should be eyes wide open. I'm not sure I have any other words to say other than I think we can work between now and the next biennial on continuing this discussion.

Helene:

I'd like everyone to join with me to thank Sir Geoffrey and the panel for a fascinating hour and a half. Thank you. I hope you'll all continue the conversation, but I better let Sir Geoffrey have the last word.

Sir Geoffrey:

I was simply going to thank you for your kind response, and I hope you have an interesting time. When you get into trouble, don't be too sad.