



Debate Transcript

MUNK DEBATE ON CLIMATE CHANGE

TORONTO, CANADA

DECEMBER 1, 2009

EXECUTIVE SUMMARY

The fourth semi-annual Munk Debate took place in Toronto on December 1, 2009. The debate's resolution was: "Be it resolved climate change is mankind's defining crisis, and demands a commensurate response". The 'pro' debaters were environmental activist George Monbiot and Elizabeth May, leader of the Green Party of Canada. The 'con' debaters were Bjørn Lomborg, professor at the Copenhagen Business School and former Chancellor of the Exchequer in the UK, Lord Nigel Lawson. The capacity audience of 1,100 people voted 61% in favour of the motion at the debate's outset, and 53% in favour at the debate's conclusion. The Munk Debates are a signature initiative of the Aurea Foundation, a charitable organization founded in 2006 by Peter and Melanie Munk to support Canadian institutions involved in the study and development of public policy. For more information, including video of the December 1 Munk Debate on climate change, please visit our website www.munkdebates.com.

Lord Nigel Lawson, Con Debater

Bjorn Lomborg, Con Debater

George Monbiot, Pro Debater

Elizabeth May, Pro Debater

Moderator: Rudyard Griffiths

OPENING ARGUMENTS

Lord Lawson: Good evening, everyone, and let me start by saying that I warmly, if that's the correct expression, congratulate Peter and Melanie Munk and their foundation on holding this debate. Not least because this important issue -- and I think we're all agreed on that -- is seldom properly debated.

Believers in what to all intents and purposes has become a new secular religion -- starting with Al Gore, who refuses to debate -- constantly insist that dissent should be neither tolerated nor heard. And I hope that most of you here find that as disquieting as I do.

Tonight's debate is not about whether we care about the environment or not. Pretty much all of us care about the environment and so we certainly should. No, this debate is about one very specific issue, which is whether to require policy decisions which I believe, if implemented, would be highly damaging. I interpret the motion as contending that prospective global warming is the most pressing issue facing humanity today and that to avert it the world must de-carbonize its economies in short order.

Now, the first part of this proposition is not even believed by the vast majority of climate scientists themselves. The most thorough survey of hundreds of accredited mainstream climate scientists was

conducted a couple of years ago by Professor Hans von Storch of the Meteorological Institute of the University of Hamburg. And it asked a considerable number of questions of which one is highly relevant to our debate tonight.

And it was, and I quote, the question, what is the most pressing issue facing humanity today? How many of the climate scientists do you think answered either "climate change" or "global warming?" Just eight percent gave that answer. Only eight percent thought it was the biggest issue facing humanity today. And when you look into the issue, that derisory figure becomes thoroughly understandable.

The body that the world's governments principally rely upon for their analyses is the IPCC, as most of you know, the Intergovernmental Panel on Climate Change. And in its most recent report, the IPCC calculated the likely cost of climate change based on elaborate computer models. Incidentally, those models projected a marked acceleration of global warming this century following the very modest recorded warming in the last quarter of the last century, and in fact, so far this century there has been no further recorded global warming at all.

Moreover, the single most important source for the IPCC's global temperature series is the small group of scientists at the Climatic Research Unit (CRU) in the UK. Recent leaked emails, I'm afraid, have revealed serious incompetence, and apparent skullduggery there, and I have called for a full and thorough inquiry.

I would like to take this moment to salute George Monbiot, whose views I don't share, which will become apparent later this evening, but whom I recognize as a man of integrity, who has gone even further and publicly demanded the resignation of the head of the CRU.

Be that as it may, to return to the IPCC report, let us, to be on the safe side, take the upper end of the IPCC's projected temperature range for the year 2100 -- the upper end of its estimate of the cost of that warming, and the gloomiest of its six economic scenarios. And let us further assume that the relative cost of this warming for the developing world will be twice that for the world as a whole.

If we do all that, it's not difficult to calculate, as I do in my book -- and that calculation has never been questioned -- what this would mean for living standards in the developing world. The answer is this -- in a hundred years time, average living standards in the developing world, instead of being nine and a half times as high as they are today, would be only eight and a half times as high as they are today. So this is man's defining crisis, the most pressing issue facing humanity today? If only.

As for the second part of the motion, the so-called commensurate response of drastically de-carbonizing the global economy, it can readily be shown that the cost of doing this would far exceed any benefits it could conceivably bring. Moreover -- and this matters a great deal -- there is an even more important moral dimension. The reason we use carbon based energy is simply that it is far and away the cheapest large scale source of energy and is likely to remain so for the foreseeable future.

Switching to much more expensive energy may be acceptable to us in the developed world, but in the developing world there are still tens, if not hundreds of millions of people suffering from desperate poverty and from the consequences of that poverty in the shape of malnutrition, preventable disease, and premature death.

So for the developing world, the overriding priority has to be the fastest feasible rate of economic growth which, among other things, means relying on the cheapest available source of energy, which is carbon based energy. To deny them this would be positively obscene. Which is why of course, there will be no Kyoto style agreement at Copenhagen.

But there still remains the ugly specter of protectionism, the cap and trade bill currently stalled in the US Congress contains a provision to impose punitive tariffs on imports from countries like India and China, which are not prepared to foreswear cheap energy. And France has urged the European Union to follow suit. At a time then when we are trying to emerge from the worst world recession since the 1930s, that really is all we need. This policy is madness.

So in conclusion, what then?

Rudyard Griffiths: Lord Lawson, you're going overtime.

LL: May I just finish?

RG: I'll give you 20 seconds and I'll credit that to Elizabeth.

LL: Fine, lovely. Throughout the millennia that we've been around, mankind has successfully adapted to the changing climate that nature has provided, just as we adapt today to the very different climates that exist in different parts of the world. And, aided by more and more advanced technology than we've ever had at our disposal that is what we should continue to do. The motion before us tonight is scientifically unfounded, economically damaging, and profoundly immoral. And that is why I invite you to reject it.

RG: Elizabeth, you'll get an extra 20 seconds for your opening arguments.

Elizabeth May: Well thank you Rudyard, for the first innovative use of cap and trade here this evening. I'm very pleased to be here and quite honoured, and I want to thank the Munk Centre. And I want to say, with all due respect to the gracious introduction Peter Munk gave us, that the people here before you are not the experts. You have before you me, a lawyer who became a politician, Lord Lawson, a journalist who became a politician, Bjorn Lomborg, a statistician who became a bestselling author, and a wonderful Guardian journalist, George Monbiot.

But the real experts on this subject matter are the scientists on the IPCC, and policy experts around the world. So with all due respect to this debate, I also wish to say that I am grieved that in the year 2009, we're asking the question, should we act in response to the climate crisis, is it a defining issue for humanity? I would have wished that seven days before the opening of the Copenhagen meetings, the 15th conference of the parties of the Framework Convention on Climate Change, we would have accepted what most of the knowledgeable scientists all around the globe see as our top threat, the climate crisis, followed very closely by the water crisis, which will be exacerbated by ignoring climate.

So what have we learned and what did we know and why do I say that it is a shame that we are debating this issue tonight? Well, we should have been asking tonight, if we could have rewritten this question, how do we reach the targets that have been set for us by a scientific community that wants to warn us and avert catastrophe? Not

“if “we should do it.

I want to take you back to a conference that happened in this city in the last week of June, 1988. I’m drawn to that as a starting point because as Canadians, some of us forget that we were ever in the lead on this issue. But we were in those days. And we were the sponsors, along with the United Nations’ agencies, of the first international large scientific comprehensive public gathering to examine the climate crisis. It was called, Our Changing Atmosphere: Implications for Global Security. And a consensus statement from that conference began with this sentence, and I think it answers tonight’s question. “Humanity is conducting an unintended, uncontrolled, globally pervasive experiment, whose ultimate consequences could be second only to global nuclear war.”

The science since 1988, despite anything you may have heard, has only gotten stronger. The evidence that has been put together by the IPCC was covered in that year by governments recognizing that not every politician has been a scientist and is able to absorb the data. Although, I’d like to give credit to someone Lord Lawson knows, his former prime minister, Margaret Thatcher, who was described herself as a scientist who became a politician and who said, in 1990, at the end of the second world climate conference, “The threat to our world comes not only from tyrants and their tanks. It can be more insidious and less visible. The danger of global warming is as yet,” she said 19 years ago, “unseen, but real enough for us to make changes and sacrifices so that we do not live at the expense of future generations.”

What does the science of climate change tell us? It tells us, incontrovertibly, the following things. Humanity has already changed the chemistry of our atmosphere. Through the profligate burning of fossil fuels, we have released so much carbon dioxide into the

atmosphere that we have literally changed the chemistry of the atmosphere to the point that this year there is 30 % more carbon dioxide in our atmosphere, more than at any time in the last million years.

Now, how could we possibly know that? We know that because some of the most sophisticated science that has ever taken place, 21st century science, examining Antarctic ice core data -- we know when the ice was formed and every piece of ice can be dated. And ice never freezes completely solid. So there are air bubbles and every air bubble is like a time capsule into the atmosphere and the chemistry of our atmosphere when that ice was formed.

We know that carbon dioxide is a powerful warming gas and that without the natural greenhouse effect this planet would be too cold to sustain life. So we know we're conducting a vast experiment on very large climate systems over which we'll have very little control if we don't reduce fossil fuel use very quickly and protect forests and expand them very quickly. The science on the climate issue was established in terms of its essentials quite a long time ago. Where the uncertainties were was whether it had already started.

Are we seeing observed levels of climate change that rise above the noise of regular climate variation? And yes, 2005 tied with 1998 as the hottest year on record. But we're looking at a system with enormous time lags. It's not about year on year temperature change. These changes are seen in decades and in those terms it is clear that the trend continues.

That's why the scientists around the world, and that's why the governments around the world, are not troubled by something I'm sure our opposing team members will want to make much of tonight. But the East Anglia University Centre was doing one small piece of the

work. I've brought with me tonight and I've read all the thousands of emails that were illegally hacked from the university centre's computer. And when you read the whole train of that information, it is very clear there was no dishonesty there. They're decent scientists trying to do their work, and finding they are increasingly unable to do the research they want to do because they are so troubled and harassed, because they have been ensnared in something political. They are decent honest scientists, but even so their work is only one strand.

The redundancy of the evidence and the observed effects is overwhelming -- millions of square kilometres of ice are gone much faster than the IPCC projected. We're seeing dramatic changes all around the world. We see them in the retreating glaciers, we see them in the rising sea levels -- sea levels have risen 80 percent faster than the third IPCC report projected.

These are the observed effects that match with the theory that match with the evidence that when you throw increasing warming gasses into a planet's atmosphere, you can expect very large and dangerous changes. We know enough to know we need to act, and that's why governments around the world signed and ratified the Framework Convention on Climate Change back in 1992.

Since that time, political will has failed to deliver what we were told we must do. Some countries have succeeded -- and credit to them. But seven days away from Copenhagen, now is the time for citizens around the world to double the resolve to speak loudly and clearly to our political leaders and tell them to abide by the warnings of scientists who have made it abundantly clear we have run down the clock, we have run out of all our time for delay, denial and procrastination. In the interest of the security of our civilization, our

economy, our society and future generations, this time we have to act. Thank you.

Bjorn Lomborg: Thank you very much. It's a pleasure to be here and it's an important discussion. Human nature is a funny thing. We don't seem to be able to take anything seriously unless we add a superlative. It is not enough that things are good. They have to be the best. Or, if it is going to be bad, it has to be really, really bad. It has to be the worst thing ever.

Look at the proposition that we have in front of us tonight. We are being asked, is this the defining crisis for mankind? Elizabeth was trying to downplay it a little bit but she also said this is the top priority. And, of course, that matters. If it were just, is this an important issue, I think we would all agree and we could go home. This is the question -- is this the most important thing?

And this escalation of rhetoric is not just stylistic. It forces us back to the very essence of a dichotomy. You're either for us or you're against us. You either believe that global warming is the worst thing ever to befall mankind or you're an enemy of humankind. I think this kind of approach is fundamentally unsound. And it actually leads to a really, really poor way of both helping the world and dealing with global warming.

Let me try to elaborate on that. First of all, is global warming really mankind's defining crisis? There are 3 billion people who live in extreme poverty. There are 2.4 billion people who don't have access to clean energy. There are a billion people who will go to bed hungry tonight. There are 3 billion people who don't have access to clean drinking water and sanitation. This year, 15 million people -- a quarter of everyone who dies in this world -- will die from easily curable

infectious diseases. Is global warming really the only, and top, priority? I don't think so.

We've asked some of the world's top economists -- I've asked, together with a number of other people -- in something called the Copenhagen Consensus, how can you actually do the most good for the world? I think all four of us up here want to do what's best for the world. It is not our intentions that we're discussing. It's the actions that we actually try to get to. These economists looked at all the different problems in the world and told us where we could do the most good.

They told us it was about investing in ending malnutrition. They told us it was about investing in agriculture and research and development, and immunization of easily curable infectious diseases, and it was about the education of girls. This is all pretty boring stuff. But it's incredibly important to make sure that we live in a better world.

And saying that global warming is the defining crisis of mankind cheapens all these other problems. But that doesn't mean we shouldn't try to tackle climate change. Of course we should. Climate change is real. It's a big problem. But I would also argue that focusing so much on global warming and claiming it's the defining issue of mankind neglects that we need to be smarter about global warming.

Elizabeth said, in a somewhat offended manner, that we have listened to all the evidence from the scientists for so long but we don't have the political will to actually carry through. That's true. But maybe we should then start thinking that maybe this is because we're barking up the wrong tree. Maybe it is because we're approaching this in the wrong way, and I would argue to a very large extent that we are approaching it in the wrong manner because we believe that this is the

defining crisis of mankind.

And as long as we do that we're going to say, let's throw everything overboard and focus on this. Let's cut carbon emissions dramatically in the rich world, right now. But the costs are phenomenal. Economists tell us the costs of doing that, to keep to the two degrees centigrade limit that many nations have signed on to, will cost, by the end of the century, some 40 trillion dollars a year. That is forty trillion dollars. The net benefit will be to avoid climate damages of about three trillion dollars. We are buying a cure that's much more costly than the ailment.

Of course, we're having a hard time getting nations on board. And that is because we are saying that this is the worst crisis ever to face mankind. We've got to dial it back.

And these economists surveyed in the Copenhagen Consensus told us that this is about investing into research and development and into green energy technology. This is about making sure that future technology becomes so cheap that everybody will want to buy it. We might put up solar panels for now. Rich, well meaning people will put them up, to show what good people they are. But fundamentally, that is not going to make a difference where global warming is concerned. Only once we have made sure that solar panels and all the other technologies are so cheap that we can get everybody to buy them -- the Chinese and the Indians -- only then will we have solved the problem of global warming.

It's about investing in research and development. And I would argue that the problem we have in front of us is two-fold. Because we are so singularly focused on global warming we forget and cheapen all the other problems in this world. And because we are so singularly focused on this being the most important problem, we end up making

really, really poor policy decisions.

So I would agree with Elizabeth. We do need a different approach. We need to stop talking about just cutting carbon emissions, cutting this, cutting that. We have done that. For 20 years, we have done that. We promised cuts in Rio in 1992, and we didn't deliver. We promised cuts in Kyoto in 1997, and we didn't deliver. We promised more cuts and we didn't deliver even more. And now we're going to Copenhagen and promising even grander gestures.

If this is going to be anything more than just another conference with confetti and champagne to go around, but not actually doing anything -- if we're going to do something other than waste another ten years not doing anything about global warming -- then we've got to start being smart.

Global warming is a big problem. It's definitely one of the things we need to fix in the 21st century. But we have many problems we need to fix. And we need to fix global warming with intelligence. So I would suggest to you that you should vote no to this resolution, not because you don't want to do good but exactly because you want to do the most good possible. You want to recognize that we should deal with climate change but you want to recognize that it should be dealt with smartly. And you want to recognize that global warming, while important, is by no means the only challenge we face in this century. I ask you to vote no to this resolution. Thank you.

George Monbiot: Thank you very much, everyone. Hidden in the motion before you tonight is a question. How lucky do you feel? Nigel and Bjorn tell us we should feel very lucky, indeed. Because what they are telling us is that we should prepare not for the worst case scenario, not for the middle case scenario not even for the best case

scenario, but for the better than best case scenario.

Because the projections and the costs of climate change that they are talking about this evening are more optimistic than the most optimistic end of the spectrum in all the major reports. Nigel tells us that so flawed and unsatisfactory is climate science that despite everything we know there has been no further warming this century.

I congratulate him. He has single-handedly beat those scientists at their little game, exposed their dastardly plans and demonstrated that the entire temperature series produced by all the monitoring stations around the world must be wrong, because what they tell us is that eight out of the ten warmest years ever recorded have taken place since 2001.

Now, extraordinary claims of the kind that Nigel has made require extraordinary evidence. So let me present to you, ladies and gentlemen, Nigel's original research into this question. [Monbiot pulls out a blank piece of paper.]

How lucky do you feel? Bjorn takes a different tack and says that yes, climate change is real. He doesn't go in for this stuff about it being a great conspiracy, or that warming isn't happening and that all the climate scientists got it wrong. What he tells us is that actually, the costs of living with climate change are very low and the costs of trying to prevent runaway climate change are very high.

Well, this is exactly the opposite conclusion to the one reached by the most thorough scholarly and lengthy review ever looking into the economic costs of climate change, the one commissioned by the UK government and headed up by Lord Stern and his vast team. And what they proposed was that the costs of preventing high levels of climate change were roughly one percent of GDP -- which sounds quite a lot.

But the costs of trying to live with those levels of climate change, at the very best case, amounted to five percent of GDP, and at the worst case amounted to 20 percent of GDP. So who do you believe? Do you believe Bjorn Lomborg or do you believe the Stern Review? How lucky do you feel?

Both men have talked breezily about adaptation. We can adapt to climate change. Whatever it throws at us, we are ingenious, remarkable apes who can sort out solutions to these troubles. Yes, I believe that in the rich world we can probably get along with two or three degrees of climate change -- for a few decades, at any rate -- and we can potentially adapt to it. But it's a very different story in the parts of the poor world with which I am familiar.

We hear people saying that adaptation technologies can be used to ensure that the crisis can be staved off. Drip irrigation, new crop varieties, air-conditioning -- it sounds all very orderly and very sensible. But in the real world that's not how it works.

I worked for a long time in the Horn of Africa and I saw the first of the great climate change droughts which have stricken that region, hitting it again and again. These are droughts of the scale and severity that they once experienced every forty or fifty years, but have been coming now every two or three years.

You've probably been seeing horrendous pictures of what has been happening to the Turkana people of northwest Kenya, hit by droughts which even in their oral traditions -- which go back a long way -- are unprecedented. What is the adaptation technology of choice there? It's not drip irrigation. It's the AK 47. As soon as a severe drought hits, the killing begins. Bjorn presents us with a choice of investing in foreign aid and helping the world's people to avoid

poverty, famine, malaria and other diseases, or investing in preventing climate change.

But why should the money for preventing climate change come out of the foreign aid budget? Is that the major part of government spending? It is far, far from it. It's a tiny part of government spending. Why shouldn't it come out of the budget for invading Iraq? Or the tens of billions of dollars used for subsidizing the oil and gas industries, or the completely unnecessary subsidies for the agricultural industry? The answer to the question of whether we should invest in foreign aid or whether we should invest in climate change prevention is yes.

Ladies and gentlemen, this is not a time for intellectual games or for cheap debating society point scoring. [Audience laughter] I'm sorry, what I should have said was, this is not a time for their cheap debating society points. Of course, we're on the side of the angels. We can do what we like.

Seriously, this is a time for facing the greatest threat I believe humanity has faced, without which we cannot tackle any of the other problems that Bjorn has so rightly highlighted, and that all of us are concerned about. Copenhagen is, I believe, one of the historic moments that humankind has faced.

And the question before Copenhagen and the question before us is this. It's very simple. Do we carry on as we are, dumping our costs on people who are not responsible for climate change but who must carry those costs? Or do we pick up our responsibility, do we recognize the scale of this huge defining crisis, and do we produce a response commensurate with that crisis? How lucky do you feel?

RG: Terrific. Let's move into our proverbial free-for-all, and I want to do is allow each of you to rebut each other in terms of what you've

heard. Nigel, since you spoke first, I'd like you to start. What have you heard that you just fundamentally disagree with?

LL: Well a great deal – pretty well everything on the other side. I will focus first on two issues which are so clear that they shouldn't require any long elaboration.

George Monbiot is quite incapable of understanding the difference between a level and a trend. I will explain by a simple example. Supposing a country's population had been rising and rising and rising, and then it stopped rising. It flattened out. Then it would be absolutely true to say that the population had stopped rising. This is a very significant point and this is what has happened with recorded temperatures so far this century.

It would also be true, of course, to say that the population was at the highest it had been for a long time, because it had flattened out at the level it had reached before. So George is absolutely wrong to say that there is no proof of this. All the scientists – he's not a scientist so perhaps he doesn't know – admit that there has been no recorded global warming so far this century. Anybody who denies that really doesn't know what they're talking about.

That is a fact and it has been admitted even in the emails that have been revealed from the CRU. They say it is a travesty that we have no explanation for this unexpected development. That's in the email traffic. This is very embarrassing for us, they say.

The other thing George extraordinarily said is that the great authority on this matter is the Stern Review, and the Stern Review said that to fix this would only cost one percent of GDP.

First of all, only a few months after Stern had written that in the review – or his team had written it – he said, oh by the way, I made a

mistake. It's not one percent, it's two percent. And that was actually reported in George's own paper, the Guardian, and quite prominently, to do them justice. But it wasn't reported in George's column, I think.

Secondly, the Stern Review is disregarded by every serious economist who has addressed it. Dieter Helm, Official Fellow in Economics at Oxford, who is concerned about climate change, says that the figures are assumed figures. He gives them no credence at all – things will really be much more expensive, he says. William Nordhaus, an economics professor at Yale, says the Stern figures are absurd. Weitzman at Harvard says the same. Dasgupta at Cambridge says the same. Richard Tol, who is probably the economist who has studied this matter most extensively, says that the figures in the Stern Review are absolute – he uses a more polite word, but I will summarize it – rubbish.

This is perhaps not surprising because there are two things you should know about the Stern Review. First of all he was a government employee who was asked by the government to produce a justification for the policies that the government had already announced and adopted. Secondly, he didn't even take the trouble to get his review peer-reviewed. Everyone agrees that it is important to have these sorts of things peer-reviewed. The Stern Review has never been peer-reviewed. And indeed, it is unlikely it would do very well if it were.

RG: Let me split up the rebuttal here. Elizabeth, I want you to answer the question, is the world getting warmer or not? Has it gotten warmer in the last decade? And George, maybe you can talk about the Stern Review, because I know you have strong views about it.

EM: Well, in terms of the warmest years on record, this is a mug's

game for many scientists.

They don't like this focus on individual years. It's very clear from the IPCC that anyone who understands atmospheric chemistry and atmospheric science and climate science knows that we are dealing with very large systems. And the land mass does tend to warm up faster than the water. So the land mass is warming at a different rate from the oceans, the oceans are the vast volume and surface area of this planet.

By the way, neither Bjorn Lomborg nor Lord Lawson is going to want to tell you what happens with carbon dioxide in our atmosphere, acidifying our oceans and threatening life there. Perhaps we can touch on that later because they don't bother to talk about it in either of their nice little books.

So what do we know about what is happening to global average temperature? Decade on decade, which is what you'd expect to see in terms of timelines, you see increasing warming. In terms of this century, there is a difference. And because Lord Lawson mentioned that we can read it in the emails, I grabbed one of them. I have them all with me and I took the trouble, before wondering whether there was some scandal lurking in what they call Climategate, to read all the emails.

And there is a similarity between Climategate and Watergate. And it is this: what was stolen is immaterial. The question is, who were the burglars and who paid them? I'd like to know who breaks into university computers and hacks into emails.

Here's one, just for fun, and they are discussing the temperature data year on year, and this is a scientist at NASA communicating with a scientist at East Anglia. And they are saying that yes, we do have a discrepancy. The Hadley Centre has got

different data than NASA, which reports that 2005 was the warmest year on record and that 2007 tied with 1998 for second place. The Hadley Centre, which by the way was created by Margaret Thatcher so that the government of the UK would have a good meteorological service looking at climate, is showing temperature decreases after 1998.

The scientists in these emails are speculating that it is because the Hadley Centre data doesn't have as much information coming from the Arctic. So if you happen to be someone who is reading all the private emails of these climate scientists you can find that on October 8, 2008, 1:50 p.m., an email that was part of this back and forth between scientists makes it clear that the Hadley Centre doesn't have the same data that NASA has.

The NASA scientists are very clearly saying that 2005 was the warmest year on record, at least tied with 1998. And I've checked with the IPCC scientists within Canada, who are the people who should be talking to you about this tonight. I'm talking about people like Dick Peltier, here at the University of Toronto, Gordon McBain at the University of Western Ontario and Andrew Weaver at the University of Victoria, all people who could probably explain this much better than I can.

But there's no question that the warming trend continues, decade on decade. But more importantly than temperature, we have issues of chemistry and the phenomenon of increased CO2 levels, up to 387 parts per million, when at no time in the million years before the Industrial Revolution did it ever exceed 280 parts per million.

RG: Elizabeth, I'm going to stop you there. George, let me ask you about the Stern Review. I think people have wondered, did Stern pick

the most extreme scenario, the most extreme outcome in order to gauge public policy, or has he provided a mainstream analysis of the challenge?

GM: Well, having accused the world's scientists of effectively making up their temperature record, Nigel then goes on to accuse the British government of trying to commit economic suicide. Because what he is effectively saying is that it asked Stern to come up with the most extreme scenario, to make it spend as much money as possible in averting climate change.

What it asked Stern to do was to find out how much it would cost so that it could adjust its policies accordingly. And it did so. And it found out that the costs were far greater than the government had anticipated. Stern didn't follow government policy. He put the wind up government and told it the bad news that government didn't want to hear – that climate change would cost a lot more than was previously anticipated.

Was it an extreme scenario? No. It was the most scholarly and thorough review ever conducted and far from being not peer-reviewed, it was the great review of reviews. This is about as high as it goes, as far as reviewing is concerned. It reviewed the peer-reviewed literature to come up with an uber-review, a meta-review, of what was going on. That's what the Stern review is all about.

And I just want very briefly to touch on this temperature issue. Eight of the ten warmest years since records began are in this century. And the question I want to ask is directed to Bjorn. What do you make of Nigel's contention that there has been no further warming this century?

RG: Let's just bring Bjorn in here to answer that.

BL: Two things, I will get back to answering your question, but first, let's just remember the Stern Review, because this is actually important and I think the point that Elizabeth made, that we need to listen to the scientists, is correct. Of course we do.

I think all of us here have listened to the scientists and said, yes, global warming is real and it is an important problem. But we also need to listen to the economists, telling us that we should handle this problem smartly, rather than stupidly.

The problem is that the Stern Review is an extreme event. It is almost universally disparaged by economists. Richard Tol actually did a survey of the implicit carbon price, which is a way of asking, how extreme is it? Stern is in the 97th percentile. It's not a mainstream review.

And just for your edification, you might want to know that Nature magazine uncovered that before the British government asked Stern, they also asked two other people to work on this review and let those people know, very specifically, that what should come out of this review was a supporting argument for the British government's policies. And these two people said no.

Now there's no doubt – and I've talked to Stern many times – that he sincerely and honestly believed what he wrote, so he was not being dishonest. But it was very clear that he was asked to do this.

And it's also very important, as George rightly mentioned, to remember that this was a review of other people's research. Stern didn't do any research of his own. If you compare the numbers, of all the numbers that he put into the model, they indicate that the damages from climate change range from -1%, and that is actually a

benefit from global warming, to a damage of 4%. The most likely outcome is a damage of about 2%. That was something that Nicholas Stern massaged into a number of 5 to 20%. It's simply not credible.

Let's just remember, if this were George looking at us talking about climate science, he would say that there were thousands of scientists that say that this is true. And then he would say that you cannot just pick one other scientist who says global warming isn't true. And I would absolutely agree with that.

But likewise, of course, you can't just mention one economist that happened to be picked out for a very specific political reason, an economist who came up with a totally unjustifiable report and say, that's the report that I am going to look at. That report gives me the right numbers. You cannot do that when all the other climate economists tell us that what is prescribed in the Stern Review represents a very, very poor way to deal with the problem.

So let's get real. Yes, climate science is important, let's listen to the large majority of climate scientists telling us global warming is real. But let's also listen to the vast number of climate economists telling us that the proposed solutions we hear from very many scientists are just simply rubbish.

RG: I want to be conscious of the time here and I'd like to just briefly go back to Nigel. We have dental insurance, car insurance, home insurance – in other words, we take a portion of our incomes each year to mitigate risk in our lives. So how do you address the argument coming out of the Stern Review which is that, maybe it is one or two percent of GDP, but we're insuring ourselves against a worst case scenario. Why do you think that this is an argument by which we shouldn't necessarily be captivated?

LL: Well, this is isn't a case of insurance, technically. Insurance is if there is a statistically assessed risk and that if the risk eventuates -- like the house burning down -- you are compensated for the cost of the house burning down. There's no question of compensation here. What this is much more like is spending because we have been told we must spend more on making the house thoroughly fireproof than the house is worth. And that is not a sensible thing to do.

The figures that I was using -- and remember, I took a worst case scenario from the IPCC range which I think they may well exaggerate -- are the figures which show that the living standards in the developing world, instead of being nine and a half times what they are today, will only be eight and a half times what they are today.

And that is not the biggest catastrophe -- I don't want that to happen, I'd like them to be nine and a half times or even better -- but that is not the biggest catastrophe that could impact the planet. Nor is it right to expect these countries to condemn millions and millions of people to unnecessary death, which is what going to more expensive energy implies, simply because it will make you feel good.

RG: Let me go to you, Elizabeth, because I think that's on many people's minds. There are cost trade-offs in what you're proposing. Mitigating climate probably means not doing many other things. We live in a world of finite budgets, of a finite global economy. So how do you respond to the charge that too aggressive action on climate change could lead to less support for all those essential human needs in the developing world?

EM: Well I wish there was someone here from the developing world to

make this point very clearly. A lot of people in the developing world are very concerned about the impact of the climate crisis, which as George has already pointed out, has caused extreme drought, extreme difficulties around the world.

The reality of it is, that we might have believed it was hard to find money and that there were competing trade-offs, before we just went through a year in which four trillion dollars went to bailing out the financial system. And I don't remember any economist -- Bjorn, you never thrust yourself in front of the moving economic stimulus package juggernaut to say, wait, is that the best choice? We have competing values! Bjorn functions as a propagandist to stop action on the climate crisis.

BL: Elizabeth...

EM: I'm not finished!

BL: Elizabeth, if you're going to make that claim, you have got to be honest and say, this is not about saying should we do all the good things for the third world and...

EM: I've been very honest Bjorn, but you are someone who has broken integrity...

BL: ...90, 95, 98 percent of our money on ourselves. Obviously, money would be much better spent on the third world for hospitals and everything else. I'm simply asking about the money that we do spend on the third world, should we spend it well, or poorly?

EM: ...you seem to throw yourself in front of stopping action on the climate crisis, when other money is being spent...

BL: No, I'm saying...

EM: ...where are you and your Copenhagen Consensus? Let me just make clear, last night I happened to be talking with the Minister for Poverty Alleviation from the government of Lesotho. It was in Ottawa with the King of Lesotho, where a lot of us work on actually trying to help this country in Africa, which has the third highest rate of HIV AIDS in the world – today being HIV AIDS day – with 40 percent of its children orphaned.

And I put to the minister that I would tomorrow be debating someone from Denmark, who wanted to make the claim that it would be wrong to spend too much averting the climate crisis, because we should put our money into poverty alleviation and fighting HIV AIDS instead.

And he said – and I must say, he was enraged – “But the climate crisis is making HIV AIDS worse in my country everyday.” He said, “We are suffering...”

BL: How is that possible? Elizabeth...

EM: ...we cannot grow our food...

BL: How is that possible?

RG: Let's talk one at a time.

EM: ...the Minister for Poverty Alleviation in Lesotho told me last night!

RG: The clock is counting down and we have only a certain amount of time. Let's hear George talk about the trade-offs between spending money now to cope with foreign aid, versus the long-term challenge of global warming.

GM: Sure. The first thing to bear in mind, ladies and gentlemen, is that we spend very, very little on foreign aid. I would love to see us spend a lot more. And I don't know a single climate change activist who isn't also concerned about poverty, who isn't also concerned about disease, who isn't also concerned about hunger.

In fact, that's why we're climate change activists. Climate change exacerbates all of those problems. You laugh at Elizabeth about the AIDS example, but I heard someone from Oxfam recently explaining exactly how it works, and they were talking about Malawi. They said that what happens is that because of climate change, you get a drought and the drought forces the men off the land, as they have to go and find work elsewhere. So they leave the land, they leave their villages, they find work elsewhere and of course they meet prostitutes and then they bring AIDS back to their communities. So it might sound like an implausible and crazy suggestion but according to Oxfam, it's quite true.

Now, we're presented with this choice over costs, as if on the one hand, we spend nothing and carry on as we are, and on the other hand we spend a heck of a lot of money and potentially bankrupt ourselves in doing so.

But if you read the latest world energy outlook, by the

International Energy Agency (IEA), just published in November, it says that just to maintain global energy supplies, using not some sort of wacky transition of any kind at all, just carrying on the way we are, between now and 2030, we need to spend 25.6 trillion US dollars.

They further say that because of the concentration of oil reserves in the OPEC nations, the net transfer of wealth from the non-OPEC nations to the OPEC nations, between now and 2030 will be a further 30 trillion US dollars.

This isn't a choice between carrying on as we are and dancing through the buttercups and watching the bunnies hopping around and not spending anything, or splashing out huge amounts of money on alternative energy. Either way, if we're going to maintain energy supplies we have to spend a huge amount of money.

And bear in mind that the IEA figures assume that those energy supplies hold up, and that oil does not peak in that period. If oil does peak those costs will go through the roof. The 150 dollars a barrel that we saw last year would be nothing by comparison to the cost of oil.

And there are a whole load of other reasons why, for our economic well-being, we should cast aside our dependency on fossil fuels as quickly as we can.

RG: George, I want to bring Nigel in on that point. If you disagree with the worst-case scenarios do you feel that there are secondary effects that could be quite positive as a result of the de-fossilization of our economy? Let's say, more energy independence. Let's say, less conflict affecting a world where our economy is quite fragile and depends on globalization. Do you sense that those kinds of secondary effects could be valuable?

LL: No, I don't think so at all. I'm more in favour of research and development in science and technology. You never know what you might discover. You might discover things that are extremely useful to mankind.

Take the peak oil point. I was Secretary for Energy in the United Kingdom in 1981, a long time ago. And I was told then that we had only forty years left of oil in the world. Fast forward to now, what are we told? We've got only forty years of oil left in the world. They always say that. In fact, there's an enormous amount. There have been big finds recently, in Iran and off the Gulf of Mexico.

Indeed, there is a sort of curious mismatch, because if oil were really running out there wouldn't be this huge attempt by oil companies to find new oil all over the world. Also, the technology of getting oil from shale is particularly interesting for Canada. There have been big breakthroughs there.

China is not going to sign up to moving to expensive energy, so the idea of the global agreement to cut back on carbon dioxide is not going to happen. As Bjorn says, we have to look at a different approach to this.

And what is China doing now? China is the new imperial power in Africa. China is dominating sub-Saharan Africa. It is buying out raw material resources of all kinds throughout sub-Saharan Africa. And that includes oil. It is now getting a big stake in Nigerian oil, in Angolan oil and in Ghanaese oil.

They're not stupid. They would not be doing this if they didn't intend to use the oil. And they will be using the oil.

RG: Bjorn, I'm going to go to you and then to Elizabeth. Further to

George and Elizabeth's point, about rising CO2 levels in the atmosphere, if we're on to 450 parts per million, 500 parts per million, what is the tipping point for you? What is the moment where you get genuinely worried and say, Wow, it's time for these Promethean efforts that George and Elizabeth want to see.

BL: I'll talk about that and one other thing. I think, fundamentally, yes, we are going to see dramatic increases in CO2 emissions. And George and Elizabeth would probably accept that yes, China is going to be hard to rein in.

China just promised, in this fantasy game of Copenhagen, that they were going to cut their carbon intensity -- that is, how much carbon they put out for every dollar they produce -- by somewhere between 40 and 45 percent by 2020. And people were immediately saying, the US is only doing 3 percent, but China is doing 40 percent. Of course, these are very different things.

If you take the IEA predictions for 2020 for China they show that if China did nothing whatsoever -- because they're going to move towards producing more services and technology rather than steel and cement -- they will improve their carbon ration and dramatically so. We expect them, without doing anything at all, to reduce their carbon intensity by 40 percent.

So they actually came out and said, we solemnly pledge to do...nothing at all. But everybody loved them for it! The point here is that we will see a dramatic increase in emissions even though we are all going to get much more efficient.

The only way we can do something about this problem is by having better technology. We cannot ask developing countries -- we can't even ask ourselves -- to cut back on their carbon emissions. But

if we have better technology, we will be able to do so simply because it will be cheaper for us to do so.

I would also very much like to quickly point out that George says – and I would like to applaud you for it – that everyone he knows thinks we should focus more on doing something about poverty alleviation, about hunger, about all these other problems. George has just moved over to our side, admitting that climate change is not the defining crisis. It is one of the many crises we face in the 21st century. So thanks, George, for moving over here.

But moreover, look at what Elizabeth said -- I think she probably regrets it a little -- saying we should do something about global warming because of AIDS.

EM: I don't regret it because it's true.

BL: George also made that point. It probably is true that there are connections everywhere. You could probably make the argument that droughts and other things that come from global warming will exacerbate HIV AIDS. But is that really the way we want to help people with HIV AIDS? To say, let's cut back on carbon emissions so that in a hundred years the AIDS problem will be slightly less bad, slightly less much worse by the end of the century, and so they'll have slightly less much worse HIV AIDS, instead of, I don't know, handing out condoms?

The fundamental point is, do you want to be remembered for doing very little at a very high cost, or do you want to be remembered for having done a lot?

RG: Elizabeth, let's bring you back into this. I think the question on

some people's minds is whether the pro-side are being selective about your embrace of science and technology? What about the ability of technology to ameliorate emissions through innovation, through new kinds of energy production and distribution? Are you pessimistic about technology?

EM: Absolutely not.

That's the problem with debating someone like Bjorn. He puts forward straw men and false choices and then you end up saying, but whoever said that people who want action on climate change were against efficient technologies? We're the ones calling for the things that have already been invented. We have really important innovations that we could list but it would take too long, because there are hundreds of them.

The thing that is keeping them from completely taking over the marketplace, so that fossil fuels disappear, is that we haven't priced carbon.

But when we stop burning oil in our cars we'll also be removing a lot of the precursors to smog, increasing health and well-being right through society. We're leaving out all the benefits of taking action on climate. We're leaving out the fact that a lot of these things have negative cost, because the payback time isn't that long when you're going to better insulate our buildings.

In Canada, 30 percent of our greenhouse gasses come from inefficient buildings, inefficient heating, lighting and cooling. We have all the technology we need to fix that. We just lack the political will. We waste, in this country, more energy than we use, so surely the first thing we should be investing in is in improving energy productivity.

The problem with debating someone like Bjorn is that he wants

to rely on economists some of the time, but then distort their work. He said in this book [holding up one of Lomborg's books] he relies on Professor Richard Tol to say that the benefit of reducing a ton of carbon is only two dollars. But Professor Richard Tol says that is quite wrong. The two dollar figure comes about only when you ignore all the uncertainties. He thinks the better figure is 28 dollars a ton, in terms of benefit.

So you have to look at yes, the technology, the improvements, the societal breakthroughs that we can all make. But it starts with a commitment to de-carbonizing our economy. As Sheik Yamani once said, the Stone Age didn't end because we ran out of stones. It ended because we found something better.

BL: So you agree. Come on over to this side.

RG: George, in that very British way, is so politely chomping at the bit and I want to let him in. George, mankind lives in a variety of temperatures around the globe. Could warmer temperatures lead to higher crop yields, to fewer winter deaths? Explain to us why you are so convinced that fast-rising CO2 levels could mean a much more apocalyptic future.

GM: Well, in the IPCC report, which Nigel obviously relies on in some respects, it says that beyond three degrees of warming, we have a net decrease in global food production. And those very simple, and almost innocent sounding words, hide a really, really big story.

We know that the global population is likely to rise to nine or ten billion people this century. We know that already it is quite difficult maintaining enough food for everybody in this world. Eight hundred

million people go hungry all the time, even when we have a global food surplus. Try to picture what it would be like if there were a global food deficit.

That simple formulation suggests the world goes potentially into structural famine. If that is the case it makes all the other things we're talking about – all of these are very big issues in their own right – look like sideshows at the circus of human suffering.

Of course we need to deal with hunger and poverty and disease. But let's not create these false choices. Let's not say it is one or the other. We have to do both. The reason that climate change is the overriding crisis is that unless we deal with it we simply cannot deal with these other issues and they will just build up and build up.

To address Rudyard's question, a little bit of warming might be a very fine thing in Canada, and there are an awful lot of people who could support it. But you can't have the warming without other people having the warming. And in other places around the world, particularly in the Sahelian region of Africa where people are extremely vulnerable, two degrees of warming would be catastrophic. This is why the first instance is a moral choice...

BL: ...we need to do something for those people in the Sahelian region of Africa and other places. How much will cutting carbon emissions help them? It's going to get warmer and warmer. There are going to be more and more problems for them. But George is going to save them by about 0.1 degrees towards the end of the century. It's a very, very inefficient way to help them.

He's essentially saying we should leave them pretty much as they are, instead of saying, what if we actually tried to make sure that

they could live better lives where they didn't have to deal with disease, where they didn't have to deal with lack of infrastructure, lack of education, lack of food? They would live much, much better lives and yes, they would also have to deal with global warming. But they would be able to do so in a manner that was closer to what industrialized countries do.

I don't know if you remember...

GM: When did I say that we should leave those people as they are?

BL: I'm pointing out that there is a much more effective way of helping people in the developing world. If you remember, George, in his introduction said, Yeah, maybe developed countries will deal with climate change, but poor countries won't. That's probably true. But the real issue is, should we then focus on doing something about climate change and still leave these people mostly poor? Or should we try to make them richer?

It actually turns out that every time that George, through his climate change policies, can save one person from starvation, the same amount of money spent on agricultural policies and making sure that people were better fed, would save 5000 lives. Yes, George, lives matter, and I would like us to save 5000 lives rather than just one.

RG: I want to check in with our audience now because this is a terrific debate and I can start taking questions from you, or I can let our debaters continue. So can I just hear a round of applause for continuing with our debaters and foregoing the audience Q and A? [applause] Okay. Sir Nigel I'll go to you, you're buzzing.

LL: I'll try and make two quick points. The great killer – if you're interested in human life, and we all are – is poverty. That is the problem. Acute poverty leads to malnutrition, and exposure to diseases. All experience shows, whereas economic aid can do a little bit, the thing that really gets people out of poverty is economic development. That's how we got out of poverty in the Western world and that is how China, gradually, is doing it now.

To slow down that escape from poverty and all the ills that come with it by forcing the developing world to have more expensive energy, is the really immoral course. May I also point out that George totally misled you about the IPCC report on food production? It did not say that after a three degree rise in temperature, you would have a net loss in food production -- it didn't say that at all.

What it says, is that as the planet gets warmer – if it does, and it might well – up to a three degree rise, then food production would be absolutely improved. After that, they think that food production would still be higher than it is today, but it would not be as helpful as if it were to somehow stop at three degrees. That's quite a different fact, and it's very important to get these things right.

Another thing the IPCC says is that they look at health. It's very interesting. They don't give any publicity to this but the IPCC has a report which gives health outcomes on three different levels – virtually certain, very likely and likely. The only health outcome that the IPCC believes to be virtually certain because of the warming they project is reduced mortality from cold exposure. That is the only health outcome that they regard as virtually certain. You don't hear that.

So there are great benefits from warming as well as disadvantages. And that is why the net effect is likely – the IPCC's own

figures show this – to be very small, whereas the cost of trying to arrest it by cutting back drastically here and now on carbon dioxide emissions would be massive. Nobody in their right minds would want to go that way.

RG: Thank you. George, I'm going to ask you to rebut that, but let me ask the question – China took hundreds of millions of people out of poverty burning pretty dirty coal. They're continuing to do it, so what is the argument for not doing that, for the potential cost of being able to raise people out of poverty?

GM: I want to see all of the world's poor people have much more access to energy than they have today. But I don't want there to have to be a pay-off between them having access to energy and them having access to the food and water that are required for their survival.

We have great opportunities here. The Iraq War cost 3.2 trillion dollars. That could have electrified Africa with alternative technologies. And in many parts of Africa it's a lot cheaper to build solar panels and batteries, rather than to build a whole grid attached to fossil fuel power stations.

So there is this false choice being presented. Either you have poverty and you leave people to rot, or you have massive spending on fossil fuels and tremendous climate change. You can help people to escape from poverty. You can give them all they need to have decent and prosperous lives without having to build hundreds of new coal-fired power stations, without having to continue mining fossil fuels which threaten those very lives that we are trying to protect.

Just so you know that I'm not making this up, I recommend that

anyone who believes what Nigel says about the IPCC report read table 19.1 in chapter 19 of the report, which says that beyond 3 degrees global food supplies decrease. The way Nigel and Bjorn talk about it, it's as if everything is ultimately flexible, just as an economist would predict. The price rises and therefore you can produce more of a commodity, you produce more the price falls, you produce less...the whole world just responds to those market signals.

But what if the water has run out? What if it has stopped raining in a region? What if, as I've seen in the northwest of Kenya, it hasn't rained for four years? What do you do about growing food? What technology can sort that problem out for you? You can't magic this stuff out of the air, you can't make it happen. You can't tell the ecosystem to darn well behave itself!

If climate change extends beyond a certain point, and the point identified by most climate scientists is around two degrees of warming, it gets harder and harder for those fundamental needs to be met, whatever technology you throw at it.

A very large study, which took place in Britain, brought together by the Hadley Centre, suggested that with two degrees of warming, 2.1 billion extra people are subjected to water stress. That poses a tremendous problem and we can't just magic that problem away on a spreadsheet. That's not how it works. This is the real world we're talking about.

Just like Bjorn, I'm absolutely in favour of investing a lot in new technologies and of developing renewable energies. But the problem is that dealing with climate change is not just a question of what you do, it's also a question of what you don't do. At the same time we have to disinvest from fossil fuels. Otherwise it's like saying, well okay, I've eaten two Big Macs and an ice cream and a chocolate fudge cake

today, but I also had a salad. So why aren't I losing weight?

We have to replace the chocolate fudge cakes and the Big Macs and the ice creams with the salad. And that means a concerted global program of action of the kind that we see at Copenhagen. Otherwise, all that happens is that the renewable energies supplement the fossil fuels rather than substituting them. That's not going to be good for anyone.

If we want to bring people out of poverty, let's do it, but let's do it with renewable energy. It's going to cost a lot, but so will a sustained commitment to fossil fuels, as history has shown. Thirty trillion dollars transferred to OPEC -- why not spend that money instead on new technologies? If we're going to shell out trillions of dollars, let's sure as heck make sure we shell it out on the right things.

RG: I'm going to give Elizabeth the last word in this segment and then we need to go into closing arguments and proceed to the second vote. So Elizabeth, give your final reactions to what you've heard about the trade-off argument.

EM: The problem with this debate in this format is that we're discussing an issue without really having discussed the context of why action is urgent on the climate crisis.

There's a lot of sophistry in the way Bjorn wrote this book [holds up one of Lomborg's books] but not quite as much as in his previous book [holds up another of Lomborg's books] but only because this one's shorter.

The key issue here is that the climate crisis is putting in motion some rather fundamental changes. And the kind of impact that humanity and ecosystems will have to deal with depends on if we

stabilize carbon dioxide in the atmosphere at a level to which we can adapt. Or do we wait and lose our chances? I'm completely in favour of a major effort at adaptation.

A big part of that effort can involve poverty alleviation. Quite frankly, the electrification of areas that currently don't have access to lights or clean water or many of the things that can be provided through decentralized energy supplies could be part of the strategy that responds to the climate crisis. Certainly, protecting the world's forests is moving faster now, under the agenda for Copenhagen, than it ever has before. Countries in the developing world where their largest contribution to greenhouse gasses is loss of forests are now voluntarily asking for help in restricting deforestation.

So yes, we need adaptation. We need poverty alleviation. We signed onto the Millennium development goals. We've made no more progress there than we have on climate, and it really is a false choice to say that because we want to fight climate change we can't bother with the Millennium goals. Neither has achieved the kind of political salience that they need.

The window in which action makes any sense is a closing window. Our opportunity to avoid the worst case scenario of the climate crisis, so that we can focus on adapting to those we can no longer stop, is critical and urgent.

And frankly, when we talk about poverty and Africa I think any Canadian would know that there is no Canadian who has been a greater humanitarian and worked for Africa more than Stephen Lewis. And he does not agree with Bjorn -- who with all respect, I don't know what you've ever done but maybe you've done a lot for Africa. But Stephen Lewis says clearly, on top of all the poverty, on top of the pandemics, Africans are likely to experience more droughts, reduction

of agricultural productivity and famine, all because of climate change. Climate change is a nightmare for Africa.

RG: Let's leave it there. It's been a great exchange and I want to allow each of our speakers four minutes to give you their final arguments.

CLOSING ARGUMENTS

GM: The reason I'm concerned about climate change is because of my experiences in northwest Kenya. I mentioned the region before, but I haven't told you exactly what happened.

When I was there in 1992, they were suffering the most severe drought they had ever suffered to date. Since then they've suffered two which have been even worse. And because of that drought, everyone was under the most extraordinary pressure. They had run out of basic resources and the only option they really had was to raid neighbouring tribes and take resources from them.

At one point, I was about to go up to the cattle camp that my Turkana friends and their families were running. And it had been stricken by tremendous drought and I fell very ill just before I was due to go up. I got malaria and I collapsed on the street and eventually had to be taken away to Nairobi. And I thought it was a terrible misfortune that had befallen me. It was actually the luckiest thing that ever happened in my life. Because when I finally recovered, I went back in the Land Rover, back to this cattle camp I was supposed to have visited before. I was with one of the relatives of the people in the cattle camp.

About ten miles before we got there this man suddenly burst into tears and he was screaming and wailing and crying and I asked him

what on earth was going on. And he said, can't you see? And I said, I'm sorry, I can't see. And as I got closer and closer, I did see. There were vultures hanging in the air just above this cattle camp. And when we arrived, all that remained of the 98 people who lived there were their skulls and backbones. The rest had been eaten by hyenas. The Toposa people had come in the night and surrounded this cattle camp and machine gunned it with AK 47s and G3s. They killed 96 people that night. There were two that got away and they killed them the next day. They killed them because they were desperate and they were desperate because of droughts. And that drought almost certainly was a result of climate change.

This is what we are up against. Not the esoteric abstractions and the figures and the squabbles we've been having over spreadsheets and computer programs and what this and that figure say. This is about life and death to these people -- people I came to love and respect when I was there. And it was seeing that, which turned me into a climate change campaigner.

I was always switched on to social justice and environmental issues. But all these other things that I'd been fighting for all my adult life -- getting people properly fed and preventing conflict and preventing disease -- all that spending and that effort becomes wasted in the face of climate change. And when I was working there I was working with Oxfam in East Africa, and it was them who told me that this was the major problem. If we don't deal with climate change, forget the rest of our programs. We might as well pack up and go home.

And this is why Oxfam, along with Christian Aid and scores of other development agencies are lobbying and bellyaching at Copenhagen and elsewhere, desperate to get their governments to

respond to this massive defining crisis that humankind faces. And what they are saying, these people that are most concerned with poverty and famine and all the rest of it -- what they are telling us is that climate change is mankind's defining crisis and it requires a commensurate response. Ladies and gentlemen, I commend the motion to the house.

BL: Nobody doubts that George and Elizabeth and everybody else here have their hearts in the right place. That's not the question.

The question is whether George, in his experience of the people who are suffering in northwest Kenya, is saying they are suffering because of global warming -- I would be a little more worried about making that connection right away but let's just say that it is so. So we should do something about global warming. That sounds nice. What exactly is he saying?

If it really is such that global warming will mean more drought then as global warming goes on, we'll have more and more drought so the people in northwest Kenya will become more and more desperate. So why on earth do we want to help them by making them slightly less more desperate towards the end of the century? If we really have our hearts in the right place, wouldn't we want to make sure that they become more developed, that they actually stop using the AK 47 and that they start having a real civilization that works for them and actually makes them able to feed and educate their kids, and all these other things? That is the fundamental issue.

That is why focusing on these issues is terribly important. It's not about saying, this is the defining crisis for mankind. If anything, it's about making sure that we do the right things instead of just the things that feel right.

George also told us that 2.1 billion people are going to be in water stress because of global warming. That's true. He failed to tell you that studies by Nicholls also show that if there was no global warming there would be 3.6 billion people in water stress. Actually, global warming in that particular area means that there will be less water stress, not more. Why? Because there will be more water vapor in the atmosphere.

So, there are a lot of studies and a lot of numbers flying back and forth, but we are just simply not being well informed if we are being told that this is the only and defining crisis.

Still, in some ways, I'm very, very encouraged by this debate, because I don't know if you noticed, but both Elizabeth and George actually moved over to our side during the course of the evening. George said he wants us to focus just as much on all these other areas, and yet it should be climate change that should be the most important issue. Of course, George is right. We should be focusing on all these things, and that, of course, means that you have to say this is not the defining crisis. It is one of the many crises on which we need to focus.

And Elizabeth said we need to make much greater investment into research and development of green energy technologies, because that is what is going to solve the world's problems. It's not about running out of stone. It is about finding smarter, new technology. I commend her for turning around and saying what actually really does work. So we are, in some ways, already agreeing.

Let me just sum up. Both of them mentioned Oxfam, and I think it is crucial that Oxfam actually told us that in the G8 decisions, the leaders decided that they were going to be spending about 50 billion dollars extra on climate change. They were going to take that money,

it appeared at the time, mainly from overseas development aid. Oxfam representatives said, this terrible. If you take those 50 billion dollars, you're essentially going to make it impossible for us to save four and a half million kids from dying. Yet if you spend it the most effective way on climate change, you can postpone global warming by the end of the century by six hours.

I ask you. What is more important -- to save 4 and half million kids, or postponing global warming by six hours? That is the challenge. And so to put it very, very bluntly, Al Gore talks about global warming as being our defining moment. How do you want to be remembered by your kids and grandkids? I think that is exactly the right question. How do you want to be remembered? By spending trillions of dollars to do virtually no good a hundred years from now, or by spending much less money now and making a much better worlds? I ask you to reject the motion.

EM: Certainly this evening we've heard some compelling arguments and some interesting theatre. But this issue is far more important and requires a serious analysis of the real science.

Bjorn plays with numbers and plays with facts in a way that I find deplorable. I've read both of his books I've checked every footnote. We've debated once before and he admitted that, of course, I couldn't find any evidence to support the claims he made. I should have called or written him because there were accidents that were in the first book.

The truth of the matter is the credible scientists out there have a body of work that has persuaded the politicians of this world. And when you start with Brian Mulroney and Margaret Thatcher as early adherents, taking leadership that we must address the climate crisis, I

invite you to imagine what would possibly have compelled them if it wasn't that the science was clear that we have to act. We've lost precious decades.

In this debate tonight, for instance, you just heard Bjorn say that we would have fewer people with water stress. Well, there's no one in this world who has done the studies that would say that. The climate scientists around the world have made it very clear that the climate crisis will exacerbate access to water and in those places where you have deluge events, so you'd say there's more water there, you can't capture it. You'd have to empty every reservoir to capture the excess water that suddenly appears and it is like pouring water through sand.

It's like Mozambique, that had no rain for eight months and it got its entire annual rainfall in one two-week period back in 1998. It was a dreadful flood and lots of lives were lost. They couldn't capture the water that came in the two-week period. The nature of the climate crisis is that it will bring extreme water stress and it will create millions of environmental refugees. And, as many people around the world now recognize -- including studies out of the Pentagon -- we're looking at issues where the crisis itself is a profound threat to our security.

We haven't talked tonight about some key science. I mentioned earlier ocean acidification, which is not temperature related. It is the carbon dioxide in the atmosphere creating carbonic acid in the world's oceans, threatening life in our oceans. How do we feed the world's people or deal with the fact that we could be losing life in our oceans if we don't act?

Both Nigel and Bjorn write in their books that there is no sign of the Antarctic ice melting. Yet some of the best science in the world is being done right here at the University of Toronto -- for example, a

gravity recovery and climate experiment called GRACE. There was a presentation to parliamentarians that I recently attended in Ottawa, by Dr Dick Peltier, who is a scientist with the IPCC. And the information on the western Antarctic ice sheet is very, very clear. It is destabilizing, it is losing its mass. Sudden, abrupt climate change can't be modeled, but if the western Antarctic ice sheet were to go, sea level rise in Canada would rise nine metres. Now I don't care what economist you get. Figure out the economic cost to this country of a nine metre sea level increase. It would be significantly more than the amount we could spend to ensure that we go off of fossil fuels as quickly as possible.

We know about science. We know about debates. We know that there are limits on free speech. When you're in a crowded theatre, you don't shout "Fire." But when you're in a crowded theatre and you feel the floor boards warming under your feet and you see smoke clouding the exit signs and someone comes to the front and says, ladies and gentlemen, stay in your seats. That smoke you see is a malfunction in the popcorn machine. We really have no problem here. Bar the door and stay in your seats. Well, that's when people need to say, I can still see the exit sign through the smoke. Now is when we act. Now is when we save lives. Thank you.

LL: I will be very brief. I will try not to take up my four minutes because I sinned grievously by going slightly over time during my opening arguments, and therefore I need to make amends.

Let me make two fundamental points. And the water stress point is actually an interesting example of a whole lot of things right across the board.

As I said, there has been no warming so far this century -- and

that is a fact though our opponents tonight don't like it. They hate it. It's astonishing! They ought to be pleased. They ought to be delighted but instead they're upset that there hasn't been this great global warming. But if there were global warming, it might exacerbate water stress, but water stress has always been there. Drought has always been a problem. There has always been water stress. What are you going to do?

Global warming causes only a marginal exacerbation of water stress and drought. Do you obsess over this marginal exacerbation or do you say, we've got to attack the real problem. We've got to have better water resource management, have better storage facilities, so when there is a lot of water you capture it, you don't lose it. You have got to have, where it's effective, water pricing, in order to avoid the enormous waste of water that occurs throughout the world at the present time. You attack the problem. You don't attack this minor exacerbation as result of climate change.

However, I will make one concession and the concession I will make is that they have the best of the rhetoric. I've been in politics for a very long time and I have observed from time to time that there is somehow a gap between politicians' rhetoric and the reality. I hate to say that, but one or two of you may sometimes have discerned this difference. And I have to say too, that I have never, ever, during a very long life in politics -- or before politics in journalism, writing about politics -- I have never known such a large gap between the rhetoric and the reality on an issue, where the politicians talk big but do very little.

And why is it? Because the rhetoric sounds wonderful, but, in fact, the cost of going the route they're recommending is prohibitive. The Chinese and the Indians can't afford it and the electorates in the

richer countries, well, I doubt whether they'll go along with it. We can see clearly that it is useless if it's not a global thing. The rhetoric is marvelous as are the scare stories -- every newspaper knows the scare stories sell newspapers like nobody's business, whether they are medical scare stories or anything else, so there is a tendency to talk in these terms.

But that's not the kind of politics in which I believe. I believe in reason. I believe that it may be bad rhetoric, but I believe the only way we will actually help humanity is by using the power of reason and working out what it is sensible, rationally, to do. And that is why I invite you to reject this motion.