# General Responses

## Existential Risk Focus Kills V2L

### Existential framing kills value to life – makes humanity satiated home dwellers with no drive or purpose

**Shostak** 11/15/**10** (Seth, Senior Astronomer, SETI Institute. “Living Forever Is Not a Good Idea” http://www.huffingtonpost.com/seth-shostak/living-forever-not-a-good\_b\_783958.html) MFR

Anyone who's passed the age of 35 knows that we're not built to last. Many of us will slog it out to 76 years, the expected lifetime for American males -- females get two thousand extra days -- but even when young, our bodies barely work, and that marginal situation only worsens as the decades drone on. It's worth noting that a lifetime of four-score and seven is a new problem for our species. If you lived in Egypt two hundred generations ago, perhaps with a gratifying job as stone chiseler in Giza, you wouldn't worry much about career burnout. You'd be dead by age forty. The up-side was that the Pharaoh didn't have problems with social security. Life expectancy took a big jump during the Victorian era, when civil engineers fitted out cities with sewers and water pipes. But more improvement is on the horizon: Some people expect lifetimes to double in the coming century as we learn more about our biological makeup. That's nice, but why stop with a mere factor of two? Gerontologists like Aubrey de Grey figure we can cure death altogether, and in the not-too-distant future. If you're bummed about missing out on this impending medical development, there's always cryonics -- which offers a doubtful promise of time-shifting your life into the 21st century by putting your body on ice today. I used to be a big fan of living forever, although I soon learned that not everyone agreed. One guy told me he didn't relish the thought of endless dental hygiene appointments. At parties, I found that men were often enthusiastic about immortality, but the women were less so. A physician I know suggests this is due to women's reluctance to confront an infinite future of dealing with boorish men, hitting on them until the heat death of the universe. Rapid turnover is nature's way of making sure that a species can keep up with changing circumstances and survive the long haul. But since humans have gone beyond basic biology, why not re-engineer ourselves for a lifetime without an end point? Or at least for one where we outlast the Roman Empire? Well, it turns out there are problems... even beyond the tedium of boorish men. Let me first state that if we can pull this off -- cure death -- it's self-evident that we'll also obliterate the debilities of aging. You'll be healthy to the end. Nonetheless, there are countless gotchas for any descendants that have made themselves as indestructible as zombies. First off, they'll need to engineer a major societal revamp. You can't have kids every two years forever: we don't have the real estate. And of course, marriages would have an expiration date. A myriad of other social structures would also have to be rejiggered: Imagine the frustration of waiting for a tenure slot at the local college which, even after millennia, is still stuffed with its original faculty. Other difficulties are neither obvious nor tractable. For example, today more than 30,000 Americans die annually on the roads. That means you have a 50 percent chance of being taken out in an auto accident if you live for 3,600 years. So if we extend our lifetimes to thirty or forty centuries, using a car becomes an existential threat. You won't do it. That may make you a permanent homebody, sitting at your desk playing video games as the eons tick by. Not a pretty picture, and probably not a fragrant one either. Over the course of 3,600 years, you'd have a 4 percent chance of dying in the tub, so bathing will be rare. And if you get hungry, you won't drive to the grocery store -- you'll walk. Regrettably, you might not find any groceries. Farming is one of the most dangerous jobs around, and any farmer who lives long enough to fear riding in a car has had a more-than-even chance of being killed in the back forty. Incidentally, that's about the same death rate as mining coal, so we'll need to get those wind turbines built if you want electricity at home. Here's the problem in a nutshell: if we extend human lifetimes a lot -- to millennia, rather than centuries -- all the small risks you heedlessly take every day will have a devastating cumulative impact. Most jobs will become unattractive, because just about any occupation becomes, eventually, a deadly occupation. We'll automate nearly everything we can, and stay at home immersed in a virtual world. To accommodate this new lifestyle, software for our amusement will become more and more compelling. I mean, for how many centuries can you remain jazzed by "Grand Theft Auto"? I figure that "Roman Orgy III" would quickly be available for Xbox. Humans might become nothing more than protoplasmic containers for their nerve endings, since virtual experience will be the only kind of experience we'll have. Sure, this is an over-the-top scenario, but there's something to be noted here: our society is made possible by the relatively short timescale of our lives. Extending our life spans a little is merely problematic. Extending them a lot demands a whole new paradigm. Otherwise, our future will be ugly and tedious, punctuated only by video games, dental appointments, and the occasional boorish lout.

## Alarmism Causes Serial Policy Failure

### Emergency framing focuses on top-heavy solutions to existential problems, that leads to serial policy failure, and collapses long-term change

Hodder and Martin 9 (Patrick, Bachelor of Arts HonoursBrian, professor of Social Sciences at the University of Wollongong“Climate crisis? The politics of emergency framing” Economic and Political Weekly, Vol. 44, No. 36, 5 September 2009, pp. 53-60. http://www.bmartin.cc/pubs/09epw.html) MFR

Should climate change be considered an emergency? Our aim here is to present some cautionary comments. Most discussion has approached the issue in terms of whether climate change really is an emergency. For example, does the evidence show that warming is proceeding faster than previously thought? Is there a tipping point beyond which climate change is irreversible? How soon and how drastically must carbon emissions be reduced? This way of thinking seems to be concerned with scientific matters, but actually it builds in social assumptions. Many of those who talk of a climate crisis or emergency assume that evidence about climate processes means that addressing climate change is the most urgent social issue, that the solution is policy change at the top, and that thinking of the issue as an emergency is an effective way of bringing about change. It is not the use of the word "emergency" that is necessarily significant here but rather the assumptions that so commonly go along with the word. We think these assumptions need to be brought out into the open and discussed. Let us be clear. We believe climate change is a vitally important issue. We believe action should be taken, the sooner and the more effective the better, to prevent the adverse consequences of global warming. Calling climate change an emergency might be a good approach - but on the other hand it might not be, indeed it might be counterproductive. We think both the advantages and disadvantages of emergency framing should be discussed. The emergency frame implicitly prioritises climate change above other issues. On the other hand, some critics, like Lomborg (2006), argue that other issues should have higher priority. We think it can be a mistake to prioritise one issue over others, because this may encourage competition between activists rather than cooperation. There are **plenty of issues of vital importance in which millions of lives are at stake**, among them nuclear war, global poverty, HIV, inequality - and smoking, which could kill one billion people this century (Proctor 2001). It is natural to expect campaigners on other vitally important issues - such as torture, sexual slavery and genocide - to remain committed to their concerns. Rather than prioritise climate change as more urgent, it may be more effective for climate change activists to work with other social justice campaigners to find ways to help each other - indeed, some are doing this already. Emergency framing can be used to sideline dissent within the climate change movement itself. For example, those who advocate highly ambitious targets for CO2reduction may seek the high ground, presenting their position as the only option for humanity and stigmatising others as selling out. Internal democracy, divergent approaches and openness to new viewpoints can be dismissed as unaffordable luxuries when the future is at stake. Our view, instead, is that because climate change is such an important issue, maintaining democracy, diversity and dialogue within the movement is even more vital. One of the consequences of framing climate change as an emergency is an orientation to solutions implemented at the top, usually by government. The assumption is that only governments have the capacity to create change quickly enough. The subtext is that change must be imposed on a reluctant population. In the longer term, this is not good politics, because the way to lasting change is through popular mobilisation, with as many people as possible supporting the change and getting behind it. Imposing policies from the top runs the risk of provoking a backlash, with gains in the short-term reversed later on. With climate change, the additional shortcoming of focusing on governments - as opposed to building a mass movement that governments feel obliged to follow - is that governments are the least reliable sources of support. Some are captives of fossil fuel lobbies; some operate massive fossil fuel industries themselves. More deeply, governments depend on economic growth to maintain tax revenues used to maintain functions that perpetuate government itself - various bureaucracies, including the military, police and prisons - and to pacify constituencies and lobbies through expenditure, for the rich as much as the poor. Few governments are keen to promote a steady-state economy, a necessity for long-term ecological sustainability. A third major shortcoming of emergency framing is that it is not effective. Psychologically, calling something a crisis may lead to disbelief - if immediate evidence of dramatic effects is not apparent - or disempowerment and withdrawal because there seems to be little an individual can do to address an overwhelming problem. Large numbers of people already think climate change is important, so to get them active the key is to provide practical ways of engaging. Saying that the problem is even bigger and more urgent than before is not likely to make people do more if they cannot already see practical ways to act. Emergency framing is risky. It is, ironically enough, not a good way to create a sustainable movement - a movement that continues to be strong a decade or more down the track after the media have moved on to other issues. The movements against nuclear war fell into this trap: most activists concentrated on protesting in the here and now, demanding short-term change. But the problem of nuclear weapons, part of the wider problem of the mobilisation of science and technology for warfare, was never going to go away in a few years. The movement rose and fell, leaving only a few persistent campaigners attempting to keep the issue alive in the intervening years. The same applies to the climate change movements. They are active now in many countries, but will they be just as active in five or ten years? The challenge is to build a long-term movement, cooperating with other movements, that will persist after media attention declines should climate change not occur as rapidly as scientists anticipate, and will also persist should some of the more calamitous scenarios eventuate. The world needs a sustainable climate change movement built not on fear but on widespread commitment.

### Existential risk prioritization is analytically incoherent—it results in policy paralysis.

Meskill 9 (David, professor at Colorado School of Mines and PhD from Harvard, “The "One Percent Doctrine" and Environmental Faith,” Dec 9, http://davidmeskill.blogspot.com/2009/12/one-percent-doctrine-and-environmental.html)

Tom Friedman's piece today in the Times on the environment (http://www.nytimes.com/2009/12/09/opinion/09friedman.html?\_r=1) is one of the flimsiest pieces by a major columnist that I can remember ever reading. He applies Cheney's "one percent doctrine" (which is similar to the environmentalists' "precautionary principle") to the risk of environmental armageddon. But this doctrine is both intellectually incoherent and practically irrelevant. It is intellectually incoherent because it cannot be applied consistently in a world with many potential disaster scenarios. In addition to the global-warming risk, there's also the asteroid-hitting-the-earth risk, the terrorists-with-nuclear-weapons risk (Cheney's original scenario), the super-duper-pandemic risk, etc. Since each of these risks, on the "one percent doctrine," would deserve all of our attention, we cannot address all of them simultaneously. That is, even within the one-percent mentality, we'd have to begin prioritizing, making choices and trade-offs. But why then should we only make these trade-offs between responses to disaster scenarios? Why not also choose between them and other, much more cotidien, things we value? Why treat the unlikely but cataclysmic event as somehow fundamentally different, something that cannot be integrated into all the other calculations we make? And in fact, this is how we behave all the time. We get into our cars in order to buy a cup of coffee, even though there's some chance we will be killed on the way to the coffee shop. We are constantly risking death, if slightly, in order to pursue the things we value. Any creature that adopted the "precautionary principle" would sit at home - no, not even there, since there is some chance the building might collapse. That creature would neither be able to act, nor not act, since it would nowhere discover perfect safety. Friedman's approach reminds me somehow of Pascal's wager - quasi-religious faith masquerading as rational deliberation (as Hans Albert has pointed out, Pascal's wager itself doesn't add up: there may be a God, in fact, but it may turn out that He dislikes, and even damns, people who believe in him because they've calculated it's in their best interest to do so). As my friend James points out, it's striking how descriptions of the environmental risk always describe the situation as if it were five to midnight. It must be near midnight, since otherwise there would be no need to act. But it can never be five \*past\* midnight, since then acting would be pointless and we might as well party like it was 2099. Many religious movements - for example the early Jesus movement - have exhibited precisely this combination of traits: the looming apocalypse, with the time (just barely) to take action.

# Extinction Politics Bad

## Alarmism Causes Serial Policy Failure

### Framing issues as an existential threat causes serial policy failure and eliminates a focus on prevention

Hodder and Martin 9 (Patrick, Bachelor of Arts HonoursBrian, professor of Social Sciences at the University of Wollongong“Climate crisis? The politics of emergency framing” Economic and Political Weekly, Vol. 44, No. 36, 5 September 2009, pp. 53-60. http://www.bmartin.cc/pubs/09epw.html) MFR

In the early 1980s, a massive protest movement against nuclear war developed in Western Europe and the United States (Wittner 1993-2003). For many in this movement, stopping nuclear war was an emergency. But was framing the issue as paramount and urgent the best way to deal with the problem? After nuclear bombs were dropped on Hiroshima and Nagasaki on 6 and 9 August 1945, the governments of the United States and the Soviet Union rushed to develop massive nuclear arsenals. Many other governments considered obtaining nuclear weapons, and by 1964 the governments of Britain, France and China had exploded them. Opposition to nuclear arms emerged from the very beginning, including among scientists. A major popular mobilisation occurred in the late 1950s, with a primary focus being fallout from nuclear tests being carried out by major powers. This movement led to the partial test ban treaty in 1963, but after that popular concern faded. At the end of the 1970s, popular opposition rapidly expanded. It was especially strong in Western Europe, the United States and a few other countries. Japan, in the aftermath of Hiroshima and Nagasaki, had long had a strong peace movement. In these countries in the early 1980s, nuclear war was by far the most prominent issue in terms of social movement mobilisation and media attention. For many, nuclear war was a matter of life and death: it was a make-or-break issue for humanity. In mid 1980, Helen Caldicott, a prominent anti-nuclear campaigner, told audiences "We have six months to save the world." The US election was in November that year, and she believed nuclear war was on the cards if Ronald Reagan was elected, so "saving the world" meant stopping Reagan from being elected. Caldicott successfully used scare tactics over many years to attract many people into the movement, **but her style and exaggerations alienated others.** At the time, many people believed that nuclear war meant the destruction of human civilisation or the end of human life on earth (Martin 1982a). Therefore, it might seem, stopping nuclear war from occurring should have been overwhelmingly important. What about the evidence? Strangely enough, there was little scientific backing for the belief that global nuclear war would kill everyone on earth (Martin, 1982b). Blast, heat and fallout would be devastating, but mainly in the areas targeted and downwind, with the likelihood of killing tens or hundreds of millions of people, mainly in western Europe, the Soviet Union and the United States. The majority of the world's population - in places such as Africa, South America and South Asia - **would be unscathed**. Writer Jonathan Schell in his book The Fate of the Earth argued that nuclear war could indeed lead to human extinction, something he called "the second death" - the first death being one's own death - and therefore the issue was of paramount importance (Schell, 1982). Schell's argument relied on the effects of ozone depletion and was **not supported by scientific work at the time.** In 1983, scientists reported on new studies of the effect of dust and smoke lofted into the upper atmosphere by nuclear explosions and subsequent fires, blocking the sun and leading to lowered temperatures, a consequence called "nuclear winter." Although once again the spectre of extinction was hinted at, it was never likely that cold weather and darkness could kill everyone; it would affect countries in the northern hemisphere most severely (Pittock, 1987). Atmospheric scientist Carl Sagan used the prospect of nuclear winter to argue that immediate drastic cuts in nuclear arsenals were imperative (Sagan 1983-84). However, this seemed to have **little effect on nuclear weapons states.** While debates over the effects of nuclear war continued, this seemed to have little effect on popular opinion. After all, prior to nuclear winter studies, people already thought nuclear war was devastating. But this belief **did not translate into popular action**. With the end of the cold war in 1989, the international movement against nuclear war faded into virtual invisibility. Whereas in 1982 millions of people had marched against nuclear war, less than a decade later most peace organisations had shrunk to a few core campaigners. The peace movement periodically surged in following years, most dramatically in 1990-91 against the first Gulf war and in 2003 against the invasion of Iraq. The issue of nuclear war had dropped from the main agenda. Yet this was not because the danger had disappeared. US and Russian nuclear arsenals declined in size after the 1980s but remained ample to kill tens of millions of people and possibly trigger nuclear winter. The government of Pakistan in 1998 demonstrated nuclear capability and in 2001-2 tensions between India and Pakistan dramatically increased: a nuclear war was averted, but it may have been a near miss. The Bulletin of the Atomic Scientists, a magazine addressing nuclear and other matters, since 1947 has published a "doomsday clock" indicating the number of minutes until midnight, with midnight signifying nuclear war. The editors over the years have moved the clock nearer or further from midnight depending on their assessment of the global risk of nuclear war. Even though the anti-nuclear war movement faded after the 1980s, the Bulletin 's doomsday clock is still ominously close to midnight. Although the risk and likely consequences of nuclear war seem less today than during the height of the cold war, significant dangers remain, including existing arsenals, nuclear terrorism and the possibility of more governments developing nuclear weapons (Cirincione 2008). Nuclear war, as a social issue, has several important similarities with climate change. Both are enormous in their potential impacts on the environment and human life. Both seem to have a tipping point beyond which catastrophe seems unavoidable or irreversible: the outbreak of nuclear war and positive feedback momentum in global warming. Both issues are remote in the sense that there are few impacts on most people in the world in the here and now: they are looming problems. If or when they eventuate, there will be major effects on future generations. Both, so it seems to many campaigners, seem to require governments to act, even though governments have played major roles in causing the problems. Nuclear war would, most probably, be a sudden event, whereas climate change is occurring gradually. Even so, there is a similarity in knowledge about these events. Nuclear war could occur any time, though it is more probable at times of heightened international tension: there is a significant uncertainty about whether and when nuclear war might occur. There are also significant uncertainties concerning climate change: how fast it is occurring and when key events such as melting of Arctic ice might happen. The similarities between the issues of nuclear war and climate change suggest that campaigners should try to learn lessons from previous movements (Overy 1982; Young 1984). In particular, the trajectory of the international movements against nuclear war offers several lessons for climate change campaigners. Firstly, the anti-nuclear-weapons movements expanded dramatically yet collapsed just a few years later, even though the underlying problem - the risk of major catastrophe from nuclear war - remained much the same. This suggests that movements should aim to become sustainable, building structures or approaches that can maintain popular involvement over the long term. Secondly, crisis framing was insufficient to create the huge mobilisation necessary to bring about fundamental change in the nuclear system. Indeed, campaigners using thinking like that of Jonathan Schell and Carl Sagan, who argued that nuclear war was the ultimate catastrophe, failed to impart their sense of crisis to government decision-makers. Thirdly, crisis framing appeared to put an emphasis on short-term solutions implemented by governments - an orientation to reformism (Roberts 1979). This sort of framing neglected the development of long-term activism to bring about changes in the structure of state system that underlies the nuclear threat (Barnet 1972; Kovel 1983; Martin 1984). Ever since the development of nuclear weapons, opponents have argued that they are so horrible that they should never be used. Yet numerous governments have developed and deployed them, their leaders seemingly unperturbed by arguments based on the common good. Anti-nuclear movements have come and gone and nuclear armaments have remained, even though the alleged justification for having them - the threat from the enemy - appeared to disappear with the end of the cold war. The persistence of nuclear armaments suggests that the driving forces behind them are deeper than the standard justification offered by governments: deterrence. Arguably, ongoing commitments to nuclear weapons - and to military strength more generally - are linked to the maintenance of state power, the link between state power and corporate interests (including via military-industrial complexes), military systems, and science and technology geared to military priorities. Whatever the precise explanation, the point here is that getting rid of nuclear weapons is not just a matter of convincing a few people at the top that the world would be better off without them - that has been attempted for decades without much success. Nuclear weapons are part of an institutionalised war system. That means that getting rid of them has to be a long-term process of social change, including challenges to the systems in which the nuclear mentality thrives, and developing alternatives. Moving forward on this long-term process requires vision, commitment and strategic thinking. Alarming people by the spectre of nuclear devastation and the possibility of human extinction might work for short-term goals but has had limited success in helping long-term efforts to transform the war system. There is another disadvantage of seeing nuclear war as an all-or-nothing struggle, as either preventing nuclear war or suffering the ultimate catastrophe. It means peace activists are not prepared for the aftermath of an actual nuclear war (Martin 1982c). It is possible that a nuclear exchange could be limited, for example a few bombs exploded in a hot spot such as the Middle East or South Asia, an attack by terrorists who have acquired weapons, or an accidental launch of nuclear missiles. The result could be massive loss of life - from tens of thousands of people to a few million, for example - but still far from putting human survival at risk, indeed less than some previous wars. A limited nuclear exchange is a possibility, but peace activists are completely unprepared because so much campaigning has used crisis framing with the message "we'd better stop nuclear weapons or it's all over." **This would be like fire brigades putting all their energy into warning people about the consequences of fires but not preparing to deal with an actual one**. Nuclear war creates much bigger fires than any brigade has had to deal with, but the principle is the same. The aftermath of an actual nuclear war holds several possibilities. One is government crack-downs on all forms of dissent, to mobilise the population against the enemy, a political repression that would make the post-9/11 "war on terror" seem mild by comparison. A parallel process would be popular revulsion against nuclear weapons, especially against governments believed to have authorised them. This would be an opportunity to make dramatic gains for peace. But without preparation by anti-nuclear campaigners, there is a greater risk that governments would respond by gearing up for an even more devastating nuclear future.

### Existential threat calculus fails – government focus prevents change and the consideration of an unorthodox position destroys future risk-planning

Martin 88 (Brian, professor of Social Sciences at the University of Wollongong“John Hampson's warnings of disaster” <http://www.bmartin.cc/pubs/88Hampson.html>) MFR

Unlike many who have since studied the environmental impacts of nuclear war, Hampson was not opposed to nuclear weapons per se. He considered that the US and Soviet governments were well aware of the dangers of nuclear war, and that deterrence worked fine because of the recognised risks. His more urgent concern was that either government might do things out of ignorance that could trigger environmental catastrophe. The sort of situation Hampson feared can be illustrated by the following scenario, which many will consider far-fetched. One of the lesser nuclear weapons powers, such as Israel or South Africa, might decide in desperation to fire a missile at Moscow to distract attention from their own situation. Moscow is surrounded by the only major set of ABMs. If these were launched to counter even a minor attack, massive explosive power would be released in the upper atmosphere. This could cause a virtual 'hole' in stratospheric ozone which, as it drifted and enlarged, could reach continental size. Hampson believed that neither superpower was aware of dangers of this sort. Also tied to this picture was Hampson's unorthodox view of the role of ozone in the evolution of life on earth. He feared that a dramatic increase in ultraviolet light, due to reduced ozone, could endanger certain basic organisms on which higher life depends. Shortly after publication of his 1974 paper in Nature, Hampson left Laval to reside in England, feeling obliged to be out of Canada. He spent much of his time contacting scientists and politicians around the world, trying to alert them to the danger of inadvertent catastrophe through upper atmospheric explosions. In 1978 he was invited to spend three months in the Soviet Union working on scientific matters. Although he made some useful scientific contacts, he found it just as impossible there to get his message through to decision-makers. Since leaving Laval and living in England, Hampson survived on very little money. Armed only with his manual typewriter and his long experience in atmospheric sciences and military matters, he waged a lonely battle for his message to be heard where it counted. Hampson's experiences testify eloquently to the futility of appealing to political leaders simply on the basis of argument and evidence. By his own count, Hampson wrote to over 50 leading figures in Canada, Britain, the United States and the Soviet Union raising his concerns about accidental misadventure. **This immense effort was to little avail.** Many of the politicians did not bother to respond. Others did so perfunctorily. They described their efforts towards disarmament and pleaded lack of time, money or expertise to investigate the issues raised by Hampson. Hampson considered true politicians to be people searching for truth, peace and social justice, and who therefore should respond urgently to a warning of potential danger. The reality is far different. The politicians themselves seldom saw Hampson's actual letters. These were opened by staff who, with the best will in the world, had little hope of dealing with the massive amount of correspondence received from pressure groups and constituents. Most effort goes into current and local political issues, not potential global disasters. Disasters become of interest mainly if some political capital can be made of them. The kinder fate for one of Hampson's letters was referral to a relevant government department. Here it might be passed among employees until it found a home - someone with the time and expertise to respond. The problem was that atmospheric scientists with the background to make sense of Hampson's technical arguments are few and far between. Furthermore, Hampson was asking for efforts to be put into further research into the dangers. Hampson's arguments probably were not understood, and even if they were, there was no political or organisational basis for acting on his suggestions. Hampson's own experiences show that the chance of one of his letters generating a positive response is vanishingly small. His case was not helped by his difficult writing style, which mixed technical and political considerations and lacked a format for easy digestion by bureaucrats. This made it all the more easy to ignore or pass off Hampson's missives. What then of scientists? Hampson corresponded with a number of them over the years, requesting them to look into the observations of nitrogen dioxide in 1959 and other evidence about upper atmospheric nuclear testing and ozone. Again, some did not even respond, while others made polite responses but pleaded that they are unable to deal with the issues themselves. I had my own ideas about Hampson's lack of success with scientists, and in addition I asked a few others who had corresponded with him about this. The main problem was that most scientists had their own programmes of research and did not have spare time to undertake a research effort following up Hampson's suggestions. Paul Crutzen, who first spelled out the importance of nitrogen oxides in the chemistry of stratospheric ozone, subsequently became one of the world's leading atmospheric scientists. Crutzen of course knew of Hampson's work, and also had received correspondence from Hampson around 1980. His own impression was that nuclear explosions above the stratosphere probably wouldn't lead to nitrogen oxides at a low enough altitude to destroy a lot of ozone. Even the most informed impressions do not constitute a scientific calculation, but they do influence what problems scientists study. Crutzen told me he was simply too busy to follow up all the things raised by Hampson, given that there were other pressing research projects. Like other scientists, Crutzen continually has to make decisions about what is the most important thing to study. Crutzen did not rule out Hampson's suggestions, but he did not find them convincing enough to warrant intense investigation. Crutzen's work, it should be mentioned, has been vitally important in the discussions about the atmospheric effects of nuclear war. He and John Birks were preparing for publication in 1982 a calculation of the effects of nuclear war on ozone using the latest models. They found that, due to the trend towards smaller warheads, this effect was not very significant. But then they chanced on the idea that smoke from fires ignited by nuclear blasts might absorb sunlight. Their paper on this effect, subtitled "Twilight at noon,"[3] had an enormous impact. The blotting out of sunlight would cause lower temperatures. Crutzen and Birks' study led directly to the investigations of nuclear winter published the next year. Actually, the nuclear winter phenomenon is exactly the sort of accidental misadventure that Hampson had been warning about: an unanticipated effect of nuclear explosions. Another scientist who commented to me on Hampson's work was G. A. Nikolsky of the Atmospheric Physics Department at Leningrad University. Nikolsky is one of the world's eminent atmospheric scientists. He met Hampson during Hampson's 1978 visit to the Soviet Union, and they corresponded for many years. Nikolsky wrote me along these lines, "I am sure you know that John Hampson is a man for generating ideas. Most of them are original and bright. He has a tendency to broaden the scope of his ideas, and I am convinced this tendency brings him a lot of trouble. It would probably be more reasonable if he took a couple of problems only and studied them more narrowly and deeply instead of jumping to details and conclusions concerning military aspects." This is reasonable advice for most scientists who are working in research labs. Perhaps their best chance of having a major political impact comes from first establishing a scientific reputation and then capitalising on that reputation to enter wider debates. The study by Crutzen and Birks had a big impact because they were highly reputable atmospheric scientists in established institutions, writing for a prominent scientific journal in receptive social circumstances. Carl Sagan and others nuclear winter researchers who have entered wider political debates have relied on their scientific credentials as legitimation for their apparently extra-scientific statements.[4] These options were not really available to Hampson because he did not have a financial or organisational base to back his efforts. He lacked institutional affiliation, research funds, travel funds, research assistants and so forth. If, for the sake of argument, he had headed a research group at some university, he might have been able to initiate a research programme into the effects of high-altitude nuclear explosions. If the results seemed to support his concerns, he could have published the findings. Then, with the backing of institutional location and published results, any warnings he made would have had much greater influence. Hampson's 1974 Nature paper, published when he was at Laval University, did have this sort of impact. It led directly to a study by the US National Academy of Sciences in 1975 on the long-term effects of nuclear weapons explosions. This study remained the primary document on this issue until the early 1980s when, stimulated directly or indirectly by the peace movement, scientists began looking at the effects of nuclear war. Perhaps the message for those with unconventional, wide-ranging ideas is to team up with more traditional scientists in a prestigious institution, in this way harnessing much more legitimacy for the ideas. The trouble with this advice is that it is not easy to get traditional scientists to take up novel ideas or to get prestigious institutions to sponsor investigations into them. It is precisely because Hampson has been unorthodox that he has also run into problems in his scientific career. To counsel 'working from the inside' may undercut some of the independence and original thinking that outsiders such as Hampson provide. To my knowledge, the one person in the world who seriously considered Hampson's ideas for the purpose of doing research was Ian Hare, when he was a Ph.D. student at York University in Toronto. Hare's work concerned injections of nitrogen oxides into the atmosphere by low-altitude nuclear explosions. With a suitable change in the models for this work, Hampson's concerns about high-altitude explosions could be addressed. Hare's view was that with present nuclear arsenals, the scenario of accidental but massive destruction of ozone by high-altitude nuclear explosions is unlikely, but that if a full star wars x-ray laser system were ever built, Hampson's doomsday situation could well come about. Hare also accepted Hampson's point that studies of the effects of nuclear war should not be based solely on the standard repertoire of nuclear war scenarios. A heart attack a few years ago slowed Hampson down but did not stop him. He continued to write numerous and voluminous letters to politicians and scientists, with little hope but with a stubborn refusal to give up. With the end of the cold war and the decline of the peace movement, the issue of nuclear war has faded from public consciousness. Hampson's personal crusade may now seem to be irrelevant. But there are two important lessons to be learned from his experiences. First, **it is futile to expect governments to react to warnings of disaster simply on the basis of arguments and evidence** submitted by an individual. This may seem obvious enough, but it is surprising how many people continue to hope that there is some official, somewhere, who will take heed. Second, there is little chance that mainstream scientists will investigate an unorthodox idea. They are too involved in their careers pursuing those ideas that are currently most topical. Most of their funding comes directly or indirectly from government and industry, and this shapes research agendas.

### **Doomsdayism results in policy paralysis and focuses on failed reformism – existential risk is rooted in political calculations that creates a disincentive for crisis preparation and thorough, objective analysis**

Martin 83 (Brian, professor of Social Sciences at the University of Wollongong “The fate of extinction arguments” http://www.bmartin.cc/pubs/83fea.html) MFR

In a worst case, the direct effects of nuclear attacks could kill perhaps 500 million people, and conceivably several hundred million more could die if this were followed by agricultural or economic breakdown. This would leave alive, and mostly uninjured, some 4000 million. No one has demonstrated any effects of nuclear war which could kill more than a tiny fraction of people who live far from the immediate attacks.[3] But surely the possibility of 500 million deaths is enough reason to oppose preparations for nuclear war? I was perplexed after hearing about Schell's conclusions and about the sources he had used to reach them, since I had already read the same sources and had come across nothing that indicated that extinction was more than a remote possibility. The perplexity is explained by Schell's process of continually taking worst interpretations and bending the evidence to give the worst impression. For example, Schell implies that a nuclear attack is inevitably followed by a firestorm or conflagration, always gives the maximum time for people having to remain in shelters from fallout, and takes a pessimistic view throughout of the potential for ecological resilience to radiation exposure and for human resourcefulness in a crisis. And usually when he spells out a worst case as a possibility - for example, the average 10,000 rad radiation dose from a 10,000Mt attack on the US - this becomes implicitly a certainty for later discussion, with qualifications dropped. 'Pushing' of an argument to support a particular conclusion is a common phenomenon in science,[4] and Schell perhaps should not be blamed overly much for doing this, especially since in many of his arguments he relies heavily on quotes from specialists who do the same thing. What is more important are the political implications of a conclusion about the likelihood of extinction from nuclear war. There are many potential reasons why the effects of nuclear war are exaggerated.[5] Here I will mention only two: the fear-mongering approach and a link with political reformism. Fear-mongering One of the approaches used by some people in the peace movement and other social movements is the generation of fear, whether this is over nuclear war, nuclear reactor accidents or overpopulation. The implicit premise behind much fear-mongering is that if people are not taking action on the issue, they must not perceive it as threatening enough. Perhaps if the thought of 500 million people dying in a nuclear war is not enough to stimulate action, then the thought of extinction will. Indeed, Schell explicitly advocates use of the fear of extinction as the basis for inspiring the "complete rearrangement of world politics" (p. 221). The popularity of the politics of fear may partly explain the popularity of Schell's treatment. The fear-mongering approach is deeply flawed. It leaves out consideration of how people can take action, how social change can come about, and of what motivates people to act. **It can cause paralysis rather than action**. Furthermore, fear is a poor basis on which to build long term commitment to fundamental change in society. Reformism A second reason why the effects of nuclear war are often exaggerated is linked with the idea that nuclear war will be avoided when national decision makers realise the danger and decide to start disarming. The idea seems to be that once people - including national elites - realise the 'true' dangers, then they will take action. In reality, elites are mainly motivated by political and economic interests, not the dangers of nuclear war. Their very power and privilege, and the ideology which justifies this, are based on the institutions which give rise to the nuclear threat. So elites are the least likely to take fundamental action against the nuclear threat. In addition, if the danger from nuclear war is believed to be enormous, immediate and final, then policy change at the top too often is assumed to be the only hope. There simply doesn't seem to be enough time for struggles for social change at the grassroots lasting decades or centuries. Exaggeration of the effects of nuclear war thus promotes the approach of appealing to the decision-makers. On the other hand, lack of a long term grassroots strategy against war, and disinclination to undertake such a path, tends to lead to ever greater extermination rhetoric. Doomsdayism has often been linked with political reformism,[6] and this seems to be the case with much of the peace movement. The second essay The second portion of Schell's book, "The Second Death", is an extended and repetitive plea to recognise the ultimate nature of extinction. In the light of my criticisms of Schell's argument about extinction from nuclear war, this plea seems a bit beside the point. Or rather, it applies not just to nuclear war but also to other possible activities which might result in extinction. It seems to me that biological warfare, genetic engineering and some human-induced ecological changes pose a greater threat of extinction than nuclear war - though this may be because I haven't studied these other dangers in the same depth as those from nuclear war. The implicit implication of the extinction argument is that if extinction is so much more cataclysmic than any massacre, then prevention of the potential cause of extinction warrants extraordinary efforts. This is not unreasonable. But it doesn't answer the question of what to do. One significant feature of the second essay is an extended portrayal of science as neutral and independent of social pressures. The inadequacies of this view are many and well documented.[7] Here it is only worth mentioning that Schell's idea that scientific knowledge is pure and untainted is, along with the idea that knowledge of the possibility of nuclear extinction will by itself cause political change, a reflection of a view of society without political and economic interests. Contrary to Schell, knowledge is intrinsically political in origin and use, and Schell's arguments themselves are a good example of this.

## Nuclear War Links/Impacts

### Extinction discourse in the context of nuclear war undermines ample scenario planning in the event of a nuclear war turning the impact, destroys focus on other existential threats, is ethnocentric, and it’s not going to cause extinction

Martin 84 (Brian, professor of Social Sciences at the University of Wollongong “Extinction politics” Published in SANA Update (Scientists Against Nuclear Arms Newsletter), number 16, May 1984, pp. 5-6 <http://www.bmartin.cc/pubs/84sana1.html>) MFR   
The possibility of massive death and destruction from war has long played a major role in thinking about war and peace. One theme has been that the increased destructiveness of weapons would provide an effective deterrent to war. Alfred Nobel thought that his invention of dynamite was a great contribution to the cause of peace, and many scientists have used similar beliefs to justify their own contributions to weapons technology. Prior to World War II, many observers thought that the capabilities of air bombardment were so horrific that war was virtually unthinkable. And since the development of nuclear weapons, nuclear deterrence has become a standard plank of Western foreign and military policy. The promotion of beliefs in massive death and destruction from war has been an important facet of the efforts of many peace movements. In the 1930s, British military planners estimated the effects of aerial bombardment by extrapolating linearly from the very limited experience of bombardments and casualties in World War I. On the basis of such assumptions, people such as Philip Noel Baker in the 1930s predicted the obliteration of civilization from war. But the experience of World War II showed that the 1930s military expectations of casualties per tonne of bombs were sizeable overestimates.[1] By the 1950s, a large number of people had come to believe that the killing of much or all of the world's population would result from global nuclear war. This idea was promoted by the peace movement, among which the idea of 'overkill' - in the sense that nuclear arsenals could kill everyone on earth several times over - became an article of faith. Yet in spite of the widespread belief in nuclear extinction, there was almost no scientific support for such a possibility. The scenario of the book and movie On the Beach,[2] with fallout clouds gradually enveloping the earth and wiping out all life, was and is fiction. The scientific evidence is that fallout would only kill people who are immediately downwind of surface nuclear explosions and who are heavily exposed during the first few days. Global fallout has no potential for causing massive immediate death (though it could cause up to millions of cancers worldwide over many decades).[3] In spite of the lack of evidence, large sections of the peace movement have left unaddressed the question of whether nuclear war inevitably means global extinction. The next effect to which beliefs in nuclear extinction were attached was ozone depletion. Beginning in the mid-1970s, scares about stratospheric ozone developed, culminating in 1982 in the release of Jonathan Schell's book The Fate of the Earth.[4] Schell painted a picture of human annihilation from nuclear war based almost entirely on effects from increased ultraviolet light at the earth's surface due to ozone reductions caused by nuclear explosions. Schell's book was greeted with adulation rarely observed in any field. Yet by the time the book was published, the scientific basis for ozone-based nuclear extinction had almost **entirely evaporated**. The ongoing switch by the military forces of the United States and the Soviet Union from multi-megatonne nuclear weapons to larger numbers of smaller weapons means that the effect on ozone from even the largest nuclear war is unlikely to lead to any major effect on human population levels, and extinction from ozone reductions is virtually out of the question.[3] The latest stimulus for doomsday beliefs is 'nuclear winter': the blocking of sunlight from dust raised by nuclear explosions and smoke from fires ignited by nuclear attacks. This would result in a few months of darkness and lowered temperatures, mainly in the northern mid-latitudes.[5] The effects could be quite significant, perhaps causing the deaths of up to several hundred million more people than would die from the immediate effects of blast, heat and radiation. But the evidence, so far, seems to provide little basis for beliefs in nuclear extinction. The impact of nuclear winter on populations nearer the equator, such as in India, does not seem likely to be significant. The most serious possibilities would result from major ecological destruction, but this remains speculative at present. As in the previous doomsday scenarios, antiwar scientists and peace movements have taken up the crusading torch of extinction politics. Few doubts have been voiced about the evidence about nuclear winter or the politics of promoting beliefs in nuclear extinction. Opponents of war, including scientists, have often exaggerated the effects of nuclear war and emphasized worst cases. Schell continually bends evidence to give the worst impression. For example, he implies that a nuclear attack is inevitably followed by a firestorm or conflagration. He invariably gives the maximum time for people having to remain in shelters from fallout. And he takes a pessimistic view of the potential for ecological resilience to radiation exposure and for human resourcefulness in a crisis. Similarly, in several of the scientific studies of nuclear winter, I have noticed a strong tendency to focus on worst cases and to **avoid examination of ways to overcome the effects**. For example, no one seems to have looked at possibilities for migration to coastal areas away from the freezing continental temperatures or looked at people changing their diets away from grain-fed beef to direct consumption of the grain, thereby greatly extending reserves of food. Nuclear doomsdayism should be of concern because of its effect on the political strategy and effectiveness of the peace movement. While beliefs in nuclear extinction may stimulate some people into antiwar action, it **may discourage others by fostering resignation**. Furthermore, some peace movement activities may be inhibited because they allegedly threaten the delicate balance of state terror. The irony here is that there should be **no need to exaggerate** the effects of nuclear war, since, even well short of extinction, **the consequences would be sufficiently devastating to justify the greatest efforts against it.** The effect of extinction politics is apparent in responses to the concept of limited nuclear war. Antiwar activists, quite justifiably, have attacked military planning and apologetics for limited nuclear war in which the effects are minimized in order to make them more acceptable. But opposition to military planning often has led antiwar activists to refuse to acknowledge the possibility that nuclear war could be 'limited' in the sense that less than total annihilation could result. A 'limited' nuclear war with 100 million deaths is certainly possible, but the peace movement has not seriously examined the political implications of such a war. Yet even the smallest of nuclear wars could have enormous political consequences, for which the peace movement is totally unprepared.[6] The peace movement also has denigrated the value of civil defence, apparently, in part, because a realistic examination of civil defence would undermine beliefs about total annihilation. The many ways in which the effects of nuclear war are exaggerated and worst cases emphasized can be explained as the result of a presupposition by antiwar scientists and activists that their political aims will be fulfilled when people are convinced that there is a good chance of total disaster from nuclear war.[7] There are quite a number of reasons why people may find a belief in extinction from nuclear war to be attractive.[8] Here I will only briefly comment on a few factors. The first is an implicit Western chauvinism The effects of global nuclear war would mainly hit the population of the United States, Europe and the Soviet Union. This is quite unlike the pattern of other major ongoing human disasters of starvation, disease, poverty and political repression which mainly affect the poor, nonwhite populations of the Third World. The gospel of nuclear extinction can be seen as a way by which a problem for the rich white Western societies is claimed to be a problem for all the world. Symptomatic of this orientation is the belief that, without Western aid and trade, the economies and populations of the Third World would face disaster. But this is only Western self-centredness. Actually, Third World populations would in many ways be better off without the West: the pressure to grow cash crops of sugar, tobacco and so on would be reduced, and we would no longer witness fresh fish being airfreighted from Bangladesh to Europe. A related factor linked with nuclear extinctionism is a belief that nuclear war is the most pressing issue facing humans. I disagree, both morally and politically, with the stance that preventing nuclear war has become the most important social issue for all humans. Surely, in the Third World, concern over the actuality of massive suffering and millions of deaths resulting from poverty and exploitation can justifiably take precedence over the possibility of a similar death toll from nuclear war. Nuclear war may be the greatest threat to the collective lives of those in the rich, white Western societies but, for the poor, nonwhite Third World peoples, **other issues are more pressing**. In political terms, to give precedence to nuclear war as an issue is to assume that nuclear war can be overcome in isolation from changes in major social institutions, including the state, capitalism, state socialism and patriarchy. If war is deeply embedded in such structures - as I would argue[9] - then to try to prevent war without making common cause with other social movements will not be successful politically. This means that the antiwar movement needs to link its strategy and practice with other movements such as the feminist movement, the workers' control movement and the environmental movement. A focus on nuclear extinction also encourages a focus on appealing to elites as the means to stop nuclear war, since there seems no other means for quickly overcoming the danger. For example, Carl Sagan, at the end of an article about nuclear winter in a popular magazine, advocates writing letters to the presidents of the United States and of the Soviet Union.[10] But if war has deep institutional roots, then appealing to elites has no chance of success. This has been amply illustrated by the continual failure of disarmament negotiations and appeals to elites over the past several decades.

### The politics of extinction forces a propagation of defeatism and elite focus – turns their scenarios

Martin 84 (Brian, professor of Social Sciences at the University of Wollongong. “Extinction politics revisited” Published in SANA Update (Scientists Against Nuclear Arms Newsletter), number 21, October 1984, pp. 15-16. http://www.bmartin.cc/pubs/84sana2.html) MFR

In Australia some of the principal goals of the peace movement are removal of US military bases, stopping uranium mining, establishing a nuclear-free zone in the region, and moving to a neutral and independent foreign policy. But how are these goals to be achieved? As I have analysed it,[4] most peace movement activities towards such goals are based on influencing elites, either by the power of rationality, by political pressure or by taking direct action. My argument is that it is futile to expect appeals to elites to have any significant effect. For many decades the efforts of peace movements around the world have been oriented towards elites. They have consistently failed. For example, the Campaign for Nuclear Disarmament in Britain in the late 1950s and early 1960s built its strategy around influencing the Labour Party. This had no lasting effect on the Labour Party defence policy, but had disastrous effects on CND. Will the argument that nuclear war may cause human extinction have any significant effect on elite decision-making on these issues? **There is no solid evidence that it will**. After all, state elites believe that what they are doing is the best thing to do to preserve world order and peace. They are sincere, just as peace activists are sincere. Why then should an argument about the dangers of nuclear war change the minds of elites? They already know it is dangerous. This conclusion is supported by the document Uranium, the joint facilities, disarmament and peace, authorised by the Minister for Foreign Affairs.[5] In it the Australian government accepts the possibility that the world may be destroyed by nuclear war. It concludes that it should continue to mine uranium and host the US military bases. Indeed, it uses the nuclear winter arguments to justify maintaining the US bases. This shows that acceptance of the possibility or likelihood of nuclear extinction does not of itself lead to any specific conclusion about what to do about it. Barrie writes that the possibility of extinction "makes the risks inherent in nuclear deterrence unacceptable to rational human beings".[1] I disagree. 'Rationality' does not lead to a particular political conclusion, since there is no universal agreement about the appropriate means to achieve even those ends which are agreed upon. My view is that elite-oriented approaches need to be supplemented by grassroots campaigns which challenge the institutional roots of war and create alternatives. Some promising campaign focuses are social defence, peace conversion and self-management. Some of the institutions which need to be challenged are the state, bureaucracy, the military and patriarchy.[6] Those who believe that a nuclear war in the northern hemisphere would almost inevitably lead to nuclear winter extending to Australia, leading to death of most or all the world's population, might well conclude that nothing done in Australia to remove bases or ban visiting vessels would have any real effect. Australians would be totally at the mercy of state and military elites in the United States and the Soviet Union. The most obvious way to intervene would be diplomatically via the Australian government. This leads then to a policy of influencing Australian elites, who then in turn are expected to influence foreign elites. But as I have argued before, depending on the elites is a prescription for failure. There are other ill effects of dependence on arguments that nuclear war may lead to extinction. Because of the complexity of the physical processes involved in nuclear winter, the debate over extinction is put at the level of experts. Secondly, there is the danger that the case against nuclear war may come to depend too much on extinction, the possibility of which might later be found to have been overestimated. It is politically sounder to rely on the unassailable claim that nuclear war would be a major human disaster with many millions of people killed.

### Risk aversion fails to understand the possibility of the risk being averted– promotes a sense of defeatism that turns their impact

Martin 84 (Brian, professor of Social Sciences at the University of Wollongong. “Extinction politics revisited” Published in SANA Update (Scientists Against Nuclear Arms Newsletter), number 21, October 1984, pp. 15-16. http://www.bmartin.cc/pubs/84sana2.html) MFR

It is straightforward to apply my analysis of the bias of science[7] to disputes about the effects of nuclear war. Barrie assumes that it is sufficient to show that extinction cannot be excluded as a significant possibility. He then draws the political conclusion from this that "Even the most politically conservative person must be brought to realize that no cause and no ideal can be served by clinging to reliance on nuclear weapons".[8] In contrast, I am concerned about the preparedness of peace movements for the political consequences of nuclear crisis or nuclear war. Therefore for my purposes it is sufficient to show that extinction is not a necessary consequence of nuclear war. Most of Barrie's comments on my views do not address our fundamental political disagreement, but focus on technical points about the effects of nuclear war. These are secondary in my opinion. Barrie proceeds in the normal scientific pattern of presenting what he considers to be the 'objective' facts, and then drawing political conclusions from them. Apparently he does not consider that my analysis of scientific objectivity[7] - in which I argue that claims to objectivity can be a way of masking underlying value assumptions - applies to his own arguments. The political values underlying claims by scientists about the 'objective' facts about doomsdays have been nicely spelled out by Alan Roberts.[9] The political implications of doomsdayism for the peace movement in the late 1950s were spelled out at the time by Vernon Richards.[10] By contrast to Barrie, I proceed by spelling out a political concern, namely that peace movement strategies do not take into account the possibility of social action during or after a nuclear crisis or war. Even without a nuclear war, a nuclear crisis could result in the imposition of repressive military or civilian rule in many parts of the world, with disastrous effects for the peace and other social movements.[3] I then muster evidence to show that nuclear crisis, limited nuclear war, or major nuclear war well short of causing extinction cannot be excluded by the evidence.

### Alarmism undermines support for planning for the consequences of a nuclear war – turns the impact and makes the impacts worse

Martin 82 (Brian, professor of Social Sciences at the University of Wollongong “Critique of nuclear extinction” Published in Journal of Peace Research, Vol. 19, No. 4, 1982, pp. 287-300. <http://www.bmartin.cc/pubs/82jpr.html>) MFR

The peace movement and its allies[1] are almost completely unprepared for the political consequences and aftermath of nuclear war and nuclear crisis. This lack of preparedness is both a result of and a cause of a limited political analysis and practice for ending the threat of nuclear war. The possible crises that may arise for the world and for the peace movement can be illustrated by a few scenarios.[2] (a) Limited nuclear war in the periphery. A war breaks out in the Middle East, and resort is made to nuclear weapons, killing a few hundred thousand people. The United States and the Soviet Union place their nuclear forces on the highest alert. As the tension continues to build up, a state of emergency is declared in the US. Normal democratic procedures are suspended, and 'dissidents' are rounded up. A similar process occurs in many countries allied militarily to the US, and also within the Soviet bloc. A return to the pre-crisis state of affairs does not occur for years or decades. As well as precipitating bitter political repression, the crisis contributes to an increased arms race, especially among nonnuclear and small nuclear powers, as no effective sanctions are applied to those who used nuclear weapons. Another similar limited nuclear war and superpower crisis becomes likely ... or perhaps the scene shifts to scenario b or c. (b) Limited nuclear war between the superpowers. A limited exchange of nuclear weapons between the US and the Soviet Union occurs, either due to accident or as part of a threat-counterthreat situation. A sizable number of military or civilian targets are destroyed, either in the US or the Soviet Union or in allied states, and perhaps 5 or 10 million people are killed. As in scenario a, states of emergency are declared, political dissent repressed and public outrage channelled into massive military and political mobilisation to prepare for future confrontations and wars. Scenario c becomes more likely. (c) Global nuclear war. A massive nuclear exchange occurs, killing 200 million people in the US, Soviet Union and Europe. National governments, though decimated, survive and apply brutal policies to obtain economic and military recovery, brooking no dissent. In the wake of the disaster, authoritarian civilian or military regimes take control in countries relatively unscathed by the war, such as Australia, Japan and Spain. The road is laid to an even more devastating World War IV. Many other similar scenarios could be presented. One feature of these scenarios is familiar: the enormous scale of physical destruction and human suffering, which is only dimly indicated by the numbers of dead and injured, whether this is hundreds, or hundreds of millions. This destruction and suffering is familiar largely because many people have repeatedly warned of the human consequences of nuclear war. What has been almost entirely absent from peace movement analysis and planning is any consideration of the political consequences of nuclear war. In this paper I critically analyse the idea that nuclear war will kill most people on earth, and present some possible reasons for the prevalence of this and related beliefs. I argue that exaggerated ideas about nuclear war are both a cause and an effect of a limited political analysis which underlies much activity directed towards eliminating nuclear war. Some readers may feel that in criticising the idea of nuclear extinction I thereby become an apologist for the military. To this I respond as follows. First, if peace activists hold or promote exaggerated views about nuclear war, these need to be justified on some grounds such as political necessity. This has not been done. Indeed, I argue that beliefs in extinction through nuclear war are counterproductive for the peace movement. Second, the test of a peace activist should be political and social effectiveness in helping people move together towards a world without war, not the extremity of one's views about the consequences of nuclear war.

### Nuclear war alarmism fails to understand the root cause of their use – state structures are politically motivated to ignore the pleas of extinction-level discourse

Martin 83 (Brian, professor of Social Sciences at the University of Wollongong “The fate of extinction arguments” http://www.bmartin.cc/pubs/83fea.html) MFR

Nation-states The third and final of Schell's essays, "The Choice", is an argument that **the source of the nuclear threat is the nation-state system**, and that the choice is between survival and national sovereignty. Most reviewers have found this essay the weakest in the book, yet I agree with Schell at least on the point that national sovereignty is a key to the nuclear threat. Nation-states and modern-style military establishments developed hand in hand only a few hundred years ago. The experience of the past century is that the principle of national sovereignty is upheld by national elites even in the face of the most horrifying developments, including war and genocide.[8] The threat of nuclear war is no exception. To focus on national sovereignty as a root cause of war is not a popular stance. This is because many people - especially social democrats and Marxists - see the nation-state as a focus for the solution to the problem of nuclear war. Peace movements are indefatigable in writing letters to national leaders, demonstrating their concern to decision-makers in marches and rallies, and in working through national political parties for policy changes. These can be useful approaches on issues that do not cut too closely to the essentials of state power. But when the objective is something fundamental to the state, such as workers' control in state bureaucracies, regional secession, or lessening the strength of the military establishment, the approaches of letter-writing, demonstrating and organising in political parties need to be supplemented by strategies for fundamentally transforming the economic, political and social system. While Schell's focus on the nation-state system is a promising beginning, he lacks any suggestion of a political strategy for confronting or transforming the power of national elites. He lacks even an analysis of the sources of the nuclear threat and resistance to it. This is apparent when he refers, as he often does, to the source of the nuclear problem as 'we': "The self-extinction of our species ... is an act that ... we plan in certain circumstances to commit" (p. 186). Contrary to Schell, it is structures of power and privilege, and the elites who run them and benefit from them, which are primarily responsible for the nuclear threat. Schell's political perspective incorporates many typical US attitudes, including a very US-centred view of the world and anticommunist stereotypes. He does not even know that the nation-state system is a relatively modern phenomenon (p. 187). Schell does not attempt to spell out any plan of action, but it seems that he too is relying on the power of knowledge and public opinion to convince decision-makers of the folly of their ways (p. 230). This is just not good enough when powerful political and economic interests are involved. Schell's argument may gain some of its popularity from its implicit political premise that knowledge and not political and economic struggle is what is required to tackle the nuclear menace. The challenge What sort of activities would pose a fundamental threat to the nation-states and their military establishments? Here I can do no more than raise a few points. Some general criteria are opportunities for widespread participation and initiative, non-reliance on key people at the top or on the national framework, and the provision of a positive alternative to military defence and other state functions. The feminist, environmentalist and nonviolent action movements are looking at how to organise political and economic life in decentralised, self-managed ways, including cooperatives, use of technology that can be controlled by communities, and human interaction through networks rather than hierarchies. These directions provide a basis for building alternatives to state structures. In addition, I suggest the following focuses as important ones in relation to defence.[9] \* Promotion of social defence at the grassroots level. Social defence is nonviolent community resistance as an alternative to military defence, and can be used against repressive governments as well as invaders. Methods include boycotts, strikes, refusals to obey, and setting up parallel institutions. \* Promotion of peace conversion, namely the conversion of military and other harmful production to production for human needs. Preparation for peace conversion can include not only plans and logical argument, but dissemination of information about and practice for conversion by direct action should the opportunity arise. \* Struggles for equity and freedom, to remove institutionalised violence including economic oppression and political repression. \* Challenges to hierarchies, which are central to the military and state systems. The belief in nuclear extinction seems to have inhibited peace movement thinking about the development of long term strategies such as these for transforming the institutional roots of war. A less exaggerated assessment of the effects of nuclear war does not necessarily mean less concern. Instead, hopefully, it can lead to more penetrating analyses and more successful strategies for ending the nuclear threat.

### Focus on exaggeration undermines preparedness for the crisis itself – the possibility of survival means that the survivors would endure a world that is more inclined to a slippery slope to extinction

Martin 82 (Brian, professor of Social Sciences at the University of Wollongong “How the Peace Movement Should be Preparing for Nuclear War” Published in Bulletin of Peace Proposals, Vol. 13, No. 2, 1982, pp. 149-159. <http://www.bmartin.cc/pubs/82bpp.html>) MFR

Unless nuclear weapons are totally eliminated, it is a virtual certainty that nuclear war will occur eventually. The likelihood of war in any given year may be small, but the cumulative effect of small probabilities can approach certainty. The likelihood is definitely not zero. For example, it is known that US policy-makers have seriously considered using nuclear weapons unilaterally on a number of occasions. Two developments have increased the risk of nuclear war in recent years. First is the deployment of highly accurate strategic missile systems in the US and the Soviet Union, plus developments in anti-submarine warfare and communications and control systems. This is increasing the chance that one of the superpowers will launch a 'first strike' in an attempt to destroy the opponent's nuclear inventory. Second is the spread of the capability to make nuclear weapons to more and more countries, fostered by the expansion of the nuclear power industry. It seems likely that this nuclear proliferation will be aided at some stage by laser enrichment of uranium, a technique which will dramatically reduce the obstacles to obtaining nuclear weapons. The question in such circumstances is not if nuclear war will occur, but when, what kind, and on what scale. The risk of nuclear war could be removed if all nuclear weapons were eliminated- total nuclear disarmament. How could this happen? I have argued elsewhere that convincing decision-makers or mobilising public opinion to influence decision-makers is insufficient, and that what is required is grassroots initiatives mobilising large numbers of people in activities that challenge or transform warlinked institutions and which create new institutions.[1] The chance that the people struggling for fundamental institutional change will succeed worldwide in 20, 50 or 100 years is much less than certainty. Indeed, any realistic assessment of the strength of the present peace movement, in terms of its ability to fundamentally affect arms races and their institutional bases, would have to admit its extreme weakness. The peace movement seems highly unlikely to bring about nuclear disarmament within the next few years, and hence it should be prepared for the possibility of nuclear war. Whether a nuclear war is limited or global, available evidence suggests that a large fraction of the world's population may be unaffected physically.[2] A long term strategy for peace must provide the basis for transforming the war system both before and after nuclear war or nuclear wars, and at the same time minimise the chance of nuclear war occurring in the first place. In addition to the important physical effects of nuclear war there would be important indirect political effects. It seems very likely that there would be strong moves to maintain or establish authoritarian rule as a response to crises preceding or following nuclear war. Ever since Hiroshima, the threat of nuclear destruction has been used to prop up repressive institutions, under the pretext of defending against the 'enemy'.[3] The actuality of nuclear war could easily result in the culmination of this trend. Large segments of the population could be manipulated to support a repressive regime under the necessity to defend against further threats or to obtain revenge. A limited nuclear war might kill some hundreds of thousands or tens of millions of people, surely a major tragedy. But another tragedy could also result: the establishment, possibly for decades, of repressive civilian or military rule in countries such as Italy, Australia and the US, even if they were not directly involved in the war. The possibility of grassroots mobilisation for disarmament and peace would be greatly reduced even from its present levels. For such developments the people and the peace movements of the world **are largely unprepared**.

### Existential risk planning destroys the consideration of survival post-event – turns the impact

Martin 82 (Brian, professor of Social Sciences at the University of Wollongong “How the Peace Movement Should be Preparing for Nuclear War” Published in Bulletin of Peace Proposals, Vol. 13, No. 2, 1982, pp. 149-159. <http://www.bmartin.cc/pubs/82bpp.html>) MFR

As well as encouraging moves towards repressive rule, the political and social upheaval resulting from nuclear war could also provide major opportunities for rapid social change in progressive directions. Several factors would operate here. (a) There would be worldwide anguish and outrage at any significant use of nuclear weapons against populations. This emotion could easily turn against established institutions. (b) A nuclear war involving the US, Soviet Union and Europe would weaken or destroy the bases for imperialism and neocolonialism in poor countries, and stimulate widespread revolutionary action that could not be contained by local elites left without rich country support. (c) In areas directly affected by nuclear attack, the destruction of established institutions would allow the creation of new structures. Historically, periods of economic or military crisis often have preceded revolutionary change, though not always with desirable results. Crises provide opportunities for groups which are organised and able to take advantage of them. In the case of nuclear war, present governments have made some arrangements to preserve their type of rule after a nuclear war.[4] By contrast, the peace movement is almost **completely unprepared to respond to a crisis engendered by nuclear war.** The primary objective of national security bureaucracies in the event of nuclear war is survival of the state apparatus. This has two components: continued defence against the outside enemy, and defence against challenges raised by the native population. The health and welfare of the general population is a secondary consideration, mainly important in its effects on the two primary goals. This emphasis is reflected in preparations for the survival of key officials, for continuity of official decision-making apparatuses and communications, and for quelling 'civil disturbances'. In the absence of any significant countervailing force, a nuclear war will not be the end of war but the beginning of the age of many nuclear wars. Although nuclear war may lead to mass revulsion, there will also be strong government and citizen pressures for retaliation, revenge, efforts to 'do better next time' and not to be caught unprepared. The rise of Nazism after World War I should point to the danger. Scenarios for World Wars IV, V, VI and so forth may be repulsive, but cannot be discounted solely for that reason. During World War II, several key groups in the US developed plans for the post-war world.[5] More generally, post-war political and economic considerations played a large role in many decisions, military and otherwise, during the war. The same pattern is being and will be replayed prior to and during a nuclear war. It is not for lack of anything better to do that nuclear strategists have elaborated numerous scenarios for nuclear war, recovery and future wars. During and after a nuclear crisis or war, powerful interest groups will attempt to sway developments through management of the news, mobilisation of sympathetic groups, creating scapegoats, suppressing dissent, and using many other mechanisms familiar to us today. If these developments are to be opposed, peace activists need to be prepared to act during nuclear crisis and nuclear war and afterwards. Preparation for nuclear war by the peace movement could increase the chances of success in struggles for social justice, especially in the poor countries, during a period of chaos in the rich countries resulting from nuclear war or nuclear crisis.

## Climate Change Link/Impact

### Rhetoric of fear regarding climate change results in serial policy failure and lack of social movements

Hodder and Martin 9 (Patrick, Bachelor of Arts HonoursBrian, professor of Social Sciences at the University of Wollongong“Climate crisis? The politics of emergency framing” Economic and Political Weekly, Vol. 44, No. 36, 5 September 2009, pp. 53-60. http://www.bmartin.cc/pubs/09epw.html) MFR

Advocates draw on the military mobilisation by the United States during World War II as a useful example of an emergency response because it demonstrates the ability of society to change on a rapid and massive scale (Brown 2008; Monbiot 2006; Spratt and Sutton 2008). However, there are flaws in relying too heavily on the war scenario as an analogy. War directly and immediately threatened the very survival of governments, so they had a vested interest in leading an emergency response. By contrast, climate change does not immediately threaten governments in the rich world and few of these governments appear to have any interest in leading an emergency response to climate change. (This might change if sea levels start rising significantly.) Besides the example of World War II, another emergency mobilisation metaphor used by climate change advocates is the Manhattan Project, the secret US scientific and engineering project to build the first atomic bombs. Yet another is the Apollo Program, the 1960s US government effort to send a man to the moon. Both of these involved government quests for power or prestige in a situation of international war or competition. Today, however, few governments are treating the challenge of climate change as a conflict or competition in which they seek to outperform rivals. To convey the sense of emergency, advocates have generally portrayed an imminent climate crisis with an emphasis on catastrophic impacts such as fires, floods, hurricanes, droughts and melting ice. A critic of the emergency frame, Mike Hulme (2006), former director of the Tyndall Centre for Climate Change in the UK, claims that activists, the media, politicians and even scientists "are openly confusing the language of fear, terror and disaster with the observable physical reality of climate change." One risk in relying on the language of fear to depict climate change is that advocates may exaggerate the dangers, providing sceptics with an easy opportunity to dismiss climate change as "alarmism." Given that 41 per cent of people in the US say news of global warming is exaggerated, the alarmism tactic seems to be ineffective with a significant proportion of the US population (Nisbet 2009). Another drawback to the catastrophe approach is the tendency of people to treat extreme weather events as natural. This leads to a perception that climate change is not caused by human activity and therefore the problem gets dismissed because it cannot be modified by human actions (Moser and Dilling 2004: 36). Evoking fear about climate change is a common tactic; as Nisbet (2009) points out, the film An Inconvenient Truth (2006) was promoted as "by far the most terrifying film you will ever see." There is evidence that fear is a motivator in human behaviour, particularly if it resonates with personal experience or evolutionary fears (Weber 2006). However, because climate change is typically **abstract and distant**, it may require the evocation of dramatic and relevant consequences to elicit a more widespread personal response (Bennett 2008; Weber 2006). Yet, even though fear may capture audience attention, it often fails to generate active engagement with climate change or motivate changes in behaviour (Moser and Dilling 2004: 39). Indeed, fear often "triggers denial or repression of a problem perceived as overwhelming" (Moser and Dilling 2004: 39; see also Meijnders et al 2001; Nisbet 2009). Similar findings about fear as an inhibiting factor are documented in a review of public health campaigns around HIV and smoking: informing people about how they can take action is more likely to be consistently effective than arousing fears (Ruiter et al 2001). Fear-inducing messages about catastrophe may be counter-productive in terms of inducing behavioural change. Moser and Dilling (2004: 44) suggest that positive and compelling images of a desired future may be more successful in generating change and moving societies towards a better future. The climate debate is no longer just between climate scientists and sceptics, but encompasses disagreements among scientists and advocates over the imminence of catastrophe and responses to it. Using an emergency frame and dismissing staged solutions may polarise climate advocates into those for or against emergency action. The emergency frame could easily marginalise other approaches and undermine democratic norms in decision-making. Further, by shrinking the perceived response time available, the emergency frame can prioritise large-scale technological solutions over social and political change, with arguments that it is too late to save civilisation except by further human interference in the climate system such as geo-engineering (Cascio 2009; Lovelock and Rapley 2007; Thomas 2008). Geo-engineering assumes a human ability to control highly complex systems such as climate that are not fully understood, and risks compounding the problem while failing to address underlying issues. Underlying issues may be obscured by framing climate change as the emergency to be solved. For example, many "solutions" to climate change such as those proposed by Stern (2006) and Garnaut (2008) build in assumptions about continued economic growth. However, the global economy is five times larger than it was fifty years ago (Jackson 2009), an increase paralleled by the over-use and degradation of planetary support mechanisms (Millennium Ecosystem Assessment 2005). Like carbon emissions, several ecosystem components have passed critical thresholds. But according to Tim Jackson (2009), if the global economy continues to grow at the same rate (if that were possible in the face of "peak oil"), it would be eighty times larger in 2100 than it was in 1960. This raises questions about economic, political, social and ethical systems, and how seemingly paramount problems such as climate change are framed. Although policies to tackle climate change need to begin within the confines of the current system, economic growth must be addressed because the current economic model is a crucial causal factor underlying other apparently more urgent issues. Finally, the focus on climate change as an emergency may render the movement unsustainable. If global warming progresses less quickly than anticipated, climate change may be dismissed as "alarmism." But if climate change does occur quickly and the movement does not succeed in achieving rapid transition, the movement risks losing its momentum and its reason for existence despite the fact that climate change and a raft of other challenges will be an enduring reality. As well as immediate campaigns focussed around stopping new coal mines and coal-fired power stations, the social movement also needs to be preparing for a series of long-term campaigns such as building community resilience around the re-localisation of food and energy resources, and making the transition away from polluting industries. To get a broader perspective on the question of emergency framing, we turn to movements against nuclear war. Looking at past movements has the advantage of seeing whether a crisis mentality brings results.

## Extinction Politics Alternative

### Alternative text: resist the event of a nuclear war as ‘the end’.

### The alternative solves misinterpretations over nuclear war and allows for crisis planning necessary to solve for future crisis, survival, and the possibility of a magnified nuclear war.

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It seems likely that the human spirit will not be crushed even by widespread nuclear war. But preparation for survival of nuclear war should not be an end in itself, but rather the stimulus to more effective efforts at prevention. It is in this light that the following suggestions should be considered. (a) Resistance against repressive measures by the state As mentioned earlier, one likely consequence of nuclear war, or even the threat of it, is declaration of states of emergency by national governments, detention of 'subversives' (trade union leaders, leaders of opposition parties, leaders of leftist groups, ethnic groups, feminists, etc.), and perhaps formal military rule. Plans, infrastructure and methods for such repressive measures already exist in many countries, having been developed to defend the status quo against various citizen based initiatives.[7] Furthermore, many plans for government action in the event of nuclear war seem specifically oriented to perpetuate the state structure rather than to defend people. The peace movement as well as the general population are not prepared for these contingencies, partly because nuclear war is seen as 'the end'. Yet if significant segments of the population were able to resist repression, to push for democratic initiatives and establish an alternative voice to that of the state in a nuclear emergency, the government and military would be much more reluctant to risk the occurrence of nuclear war. When the population is prepared, a nuclear war becomes a threat to the government itself as well as to the population. Resistance to repression is important now as well as in a nuclear emergency, and hence preparation, training and strategising with this aim in mind serves a double purpose, and also links peace movement activities with other social movements. Resistance to repression is an enormous topic, and only a few ideas are offered here. Important principles include nonviolence, local autonomy, non-hierarchical structure, popular understanding and involvement, training, provision of infrastructure and use of methods for resistance as part of a wider programme for social change. The reasons for non-violence are many, and include the futility of armed struggle in modern industrial society,[8] the broader base of support obtained through non-violent struggle, the lower level of suffering, the opportunity for everyone to participate, the reduction of secrecy and of centralised control of activities, and the provision of a basis for a nonviolent society. Non-violent means of resistance include strikes, work-ins, sit-ins, rallies, boycotts, refusals to obey orders, going slow on the job, migration and many others. Non-violent resistance must be more than a collection of techniques, however, and should be part of a wider strategy and unified around aims such as defending civil liberties.[9] Much of the literature on social defence can be used in planning to resist repression, by shifting the usual focus on national defence by non-military means to community defence. Non-military methods have been demonstrated in resistance to military coups in a number of well documented examples.[10] Local autonomy in resistance to repression is essential in the actual event of nuclear war because it is likely that many surviving communities will be physically isolated, communications networks destroyed and many official 'leaders' of the resistance either killed in the war or arrested. Even in a nuclear crisis without nuclear war, local autonomy in resistance is desirable because dominant communications channels are likely to be controlled by the state and official resistance leaders are likely to be either arrested, coopted, or infiltrated and subverted. Local autonomy in resistance to repression also can be linked with local structures for self-sufficiency and self-government. Non-hierarchical structures are essential to resistance to repression for similar reasons to those for local autonomy: if 'leaders' are arrested, incapacitated or killed, others will be able to take their place with relatively little loss of effectiveness. Hierarchical structures are prime targets for infiltration or for destruction through arrest of leaders. Nonhierarchical structures are also compatible with initiatives for self-managed economic and political structures. Local autonomy and non-hierarchical structures must be coupled with popular understanding and involvement in the plans for resistance. A significant fraction of the population needs to understand the reasons for resisting, to be ready to take the responsibility to act, and to grasp the essentials of non-military methods and their relation to the goals to be obtained. They also need to be involved in decision-making in all these matters. This need not mean a large organisation specifically geared for resistance to repression. More reasonably, it will involve active interest and involvement by a few individuals who introduce the ideas and methods in groups in which they are already involved, such as unions, workplaces, schools, churches and local communities. A minimal level of formal organisation plus a maximum level of popular involvement in resistance activities are also desirable to prevent the resistance becoming too cautious or dogmatic by being dependent on particular leaders or experts. This is especially the case in preparing for nuclear war, in which flexibility and spontaneity by informed and aware groups of people are at a premium, since the experts are likely to be wrong and the long-standing leaders out of touch. Beyond understanding strategies and methods for resistance against repression, it is important to train for resistance. For example, factory workers can practise disabling their equipment with minimal damage and responding to occupation, radio station employees can stage simulated 'resistance broadcasts', computer operators and programmers can practise disabling or reprogramming computer systems, community groups can practise removing street signs and house numbers and hiding 'dissidents', organising food distribution and so forth. In many cases such training can be part of a current social action campaign; in all cases issues of wider strategy should be kept in mind. For such exercises there is a growing body of experienced people and literature on non-violent action training.[11] Along with training, preparation for resistance against repression would desirably include a minimal infrastructure, such as broadcasting and receiving equipment not dependent on central electricity supplies, typing and duplicating facilities, and inventories of vital facilities in local communities such as supplies of food and clothing. For example, it would be useful to have plans for an 'underground' press producing newsletters and leaflets and for distributing them. Initially this might be no more than an inventory of manual typewriters and manual printing equipment. The infrastructure for resistance against repression should be planned in conjunction with the wider strategy for resistance. For example, the underground press might be designed as a backup or supplement to the established press, which in some cases would be part of the resistance, or would only cooperate under duress (and, if prepared, inefficiently) with a repressive regime. If resistance to repression were only seen as something that might be needed in the event of a nuclear war, it would not have much appeal and would be a rather negative exercise. Therefore it is important to integrate planning and training for such resistance with current campaigns against repression or for social reform, when possible. Because the principles underlying social action campaigns and preparation against repression are similar, this should not be too difficult. Again, integrating these activities as part of a wider vision and programme for social change is important. (b) Survival and self-reliance In the event of nuclear war, it is important to know how to and be ready to take simple steps to increase one's chance of survival. At the same time, personal survival should not become a preoccupation which reduces efforts to remove the sources of war. The chance of personal survival can be increased by such things as sheltering in strong buildings (basements if possible), evacuation of likely target areas and lying down if one is outside. These matters are dealt with in a number of publications.[12] The amount of emphasis to be put on survival should be decided on the basis of a close political analysis. In capitalist society with its high degree of individualism, many people will think only of themselves, and for example build personal fallout shelters. Governments, if they raise the issue of nuclear attack at all, prefer to focus on protection, since this diverts attention from collective challenges to the institutional roots of war, in which governments are closely entwined. Hence it is undoubtedly correct for people to challenge this emphasis and to make efforts to increase their chances of survival by prevention rather than protection. Indeed, E. P. Thompson says that 'Protest is the only realistic form of civil defence'.[13] Yet some minimal understanding and preparation for survival should not be rejected outright, for three reasons. First, considering that so many people are concerned about personal survival, peace activists can usefully link advice about protection with campaigns of protest and building of alternatives. This will be especially effective when the best protection is evacuation - as it is in many cases - but authorities counsel staying at home. Second, knowledge of the effects of nuclear war and protection against them is vital to activists who are prepared to take political action at the time of a nuclear emergency, whether or not nuclear war actually eventuates. If unrealistic ideas and vague fears abound, the chances of maintaining peace campaigns or countering repression will be greatly reduced. Third, while protest is surely necessary and proper, it may not be enough. Nuclear war may come despite the best efforts of all opposed to it. To ignore this possibility and not prepare for it is to ignore the realities of history. For European Jews in the 1920s and much of the 1930s, a slogan of 'protest and survive' might have been appropriate, perhaps even after the Nazi policy of extermination commenced in 1941. But depending on one's circumstances, some coordinated preparation and alternative to simple protest may have been called for. Were Danish Jews wrong to evacuate rather than stay and protest? Another aspect of personal survival is health care. It would be advisable for the general population, and peace activists in particular, to have a general understanding of the health effects of the blast, heat and radiation from nuclear weapons, and knowledge of simple ways of treating the injured. A number of medical professionals opposed to nuclear war have made statements to the effect that the medical problems created by nuclear war are untreatable, and hence nuclear war must be prevented. The conclusion is admirable, but the argument is more dubious. Health professionals assume that only professionals will be treating the ill in the event of nuclear war, clearly an impossible task even before allowing for the doctors killed or incapacitated in the nuclear attack itself. But health care need not be monopolised by professionals.[14] Non-professionals who understand the basics of first aid and hygiene can accomplish much in an emergency situation, indeed often as much as professionals who do not have access to sophisticated medical technology. By understanding the basic physical dangers of nuclear attacks and knowing simple measures to reduce them, and understanding the basics of first aid and hygiene, people are in a better position to take positive moves - to struggle for peace and against repression - in a nuclear crisis. In other words, by knowing what to do if it is necessary to protect and survive, people are in a better position to protest. In the longer term aftermath of nuclear war - after the first few weeks and months - survival may still be difficult due to disease or lack of food or shelter, for example. Because breakdown of central services - electricity, fuel, transport, water - may persist in many areas, it may be desirable to plan for some degree of local self-sufficiency. This means such things as collecting water, growing food and making clothing. The implication here is not to encourage a migration to self-sufficient rural cooperatives. Rather it is to build stronger links between those in what might be called the oppositional peace movement - those who lobby, protest and otherwise struggle against the arms race and its underpinnings - and those involved in 'alternative life styles' which are built around local self-reliance, sharing of skills and communal life. Each group has things to offer to and learn from the other. 'Alternative life styles' provide an alternative to present society which avoids the narrow professional roles, hierarchical organisations and centralised power of existing society which plays such a large part in the war system. By adopting some of these focusses, the peace movement not only gains some preparation for surviving nuclear war but more importantly can build a broader foundation for an alternative to war. But 'alternative life styles' by themselves can provide an excuse for dropping out of conventional society and avoiding constantly confronting and challenging it. Social activists in the peace movement and elsewhere, by linking with those building the 'alternative society', can help make its vision more politically effective. To illustrate the links possible here, consider the area of transport. After a nuclear war, it will be vitally important for physically separated groups to contact each other. A form of transport is needed that is resilient against central physical destruction and against social breakdown. Bicycles and foot (and possibly horse) are candidates. It so happens that these are the modes already favoured by environmentally conscious people. In other words, present day environmental/life-style campaigns for redesign of cities for transport by bicycle and foot point to the direction for resilient transport in a post-nuclear war world. This provides a basis for collaboration in current campaigns and planning. Similarly, the problem of post-nuclear war networking - putting separated groups in contact by local radio, couriers, via trade, etc. - has much in common with the present problem of linking locally autonomous social action groups. In most cases, the form of social organisation most resilient to nuclear attack - decentralised, locally self-reliant, deprofessionalised - is also most desirable even in times of peace. This convergence provides a basis for extending the social base and avenues for action of those working for peace. (c) Moral dilemmas In the event of a nuclear war or even of a nuclear crisis, many people will have to make difficult moral decisions. For example, how much time and effort should be spent trying to save the injured or relieving the pain of the terminally ill? Should euthanasia be considered for those certain to die? What priority should be put on saving one's own life? What should be done about refugees or marauders who descend on a self-reliant community? Should one evacuate to relative security? What actions should be taken to oppose repression? How should decisions be made about allocating scarce supplies of food, or places in fallout shelters? The answers to such questions are not easy. In the urgency and pressure of crisis, actions may be taken for wrong reasons: moral principles and sound political strategy may be overwhelmed by emotional impulses. Hence it is important to think through possible moral dilemmas, to work out the ethics of a post-war situation, beforehand. Not only will such preparation be important in the event of a crisis, but it will help to test and clarify present-day campaigns and priorities for their ethical soundness and consistency, including stances towards issues such as abortion, revolutionary violence, revolutionary non-violence, pacifism, and starvation in the poor countries.[15] (d) The holocaust and peace activism 'A second lesson to be learned from the anti-nuclear power movement is to focus more on alternatives to nuclear weapons and less on the generalized danger of world holocaust. While the threat of all-out nuclear war is real, it tends to freeze the public into hopeless inaction. The peace movement has been more effective when it emphasized peace conversion, a strategy which shows how a shift from military to social spending could produce more jobs and increase human welfare locally' - Pamela Haines and William Moyer.[16] I have dealt with this point at length in another paper.[17] (e) Militarism and repression, and struggles for justice There are very strong links between militarism and repression[18]: hierarchical, centralised bureaucratic structures underlie and thrive on each of them. Any fundamental challenge to war must challenge these structures as well. A nuclear emergency would greatly intensify the pressures both for military intervention in civil affairs and for state-sponsored repression. This points to the need to build very strong links between peace activists and those who are struggling against state power, such as groups opposing political police, civil liberties groups, groups defending the rights of racial minorities, women, homosexuals and prisoners, and groups supporting freedom of information and other checks on bureaucracies. Also important are strong links - as already exist in many cases - between peace groups and Third World groups struggling for justice and equality. Exploitation of people, especially in poor countries, is as major feature of the institutions which spawn the threat of nuclear war. Third World justice struggles are a continuing threat to these institutions. In a nuclear crisis or nuclear war, there would be strong pressures from exploiting groups to continue or expand repression and exploitation, for example to provide for recovery from nuclear attack. If opposition groups in exploited countries were prepared to push their claims harder and oppose repression in a nuclear crisis, this could both reduce the risk of nuclear war and lay the basis for ever stronger challenges to the institutions underpinning war. This will be especially effective if opposition groups in both power blocs - for example both eastern Europe and Latin America - increase their efforts in tandem. (f) Peace conversion At present, campaigns for peace conversion - for transformation of military production to production for human needs - play a vital role in worldwide efforts for peace. Such campaigns focus attention on a key factor inhibiting disarmament, namely arms design and manufacture; they expose the distorted priorities inherent in spending on arms; they undercut fears about loss of jobs and other incentives to support the arms business; and they provide the planning base for the conversion that will be necessary if disarmament is ever to occur. In the context of a nuclear emergency or nuclear war, campaigns around peace conversion assume a new role and importance. In the throes of a nuclear crisis or the aftermath of nuclear war, opportunities may arise for direct action to disarm or convert military facilities. For example, if a limited nuclear war occurred in the Middle East or Europe, the popular upsurge of opinion may support worker or citizen intervention in nuclear weapons production facilities. Or in the aftermath of a major exchange of nuclear weapons between the US and the Soviet Union, there could still be armed nuclear submarines roaming the world's oceans, looking for a place to dock. What would be needed then would be popular support for disarming and/or disabling the submarine and its missiles, and for opposing local military elites or opportunists who might try to use the submarine's firepower for their own purposes. This means knowing how to undertake the nuts and bolts of disarmament, and having experience in approaching sympathetic workers or members of the military to gain their help in disarming or converting the facility. Present peace conversion campaigns tend to be based on convincing decision-makers, or influencing decision-makers via public pressure, of the rationality or morality of conversion. Preparation for a nuclear crisis suggests that these campaigns should be extended by disseminating as widely as possible information about technical aspects of bombs, military bases and military organisational structures so that popular activity to disarm and convert military facilities becomes a possibility in the right circumstances. Conversely, if this sort of popular capability existed, national decision-makers would be much more reluctant to risk nuclear war. Such preparation would require close liaison with sympathetic people within the armed forces, within military production facilities and the like. In some cases, such as Lucas Aerospace,[19] internal worker support would be so great that little outside help would be needed. In other cases, such as Lawrence Livermore Laboratory,[20] strong community pressure and involvement in efforts for peace conversion by direct action would be essential. Peace conversion in a nuclear crisis or war can be seen as playing a key role between resistance to repression and survival and self-reliance. Resistance to repression is essentially a defensive stance, to maintain existing freedoms, although these may be strengthened and extended in the course of struggling for them. Survival and self-reliance are required to protect life and livelihood in the face of nuclear attack; they also can lay the basis for alternative institutions built around local self-reliance, which are also the basis for organising to resist repression. Between these, peace conversion goes beyond resistance to repression to take positive actions for disarmament, and more broadly, dismantling existing political and economic institutions on which the war system is based. Peace conversion in doing this also provides breathing space for efforts at survival and self-reliance and building of alternative institutions based on decentralisation, lack of formal hierarchy, and wide participation. After the surrender of Germany in 1945, the Allied conquerors in many cases installed Nazis in positions of power because it seemed that no one else could do the job. Unless the peace movement makes preparations, a similar train of events could eventuate after a nuclear war, with architects of nuclear arms races administering post-war recovery. Those who would oppose such a development should be involved in preparations for running the government and the economy after a nuclear war or a major nuclear crisis. In other words, preparation for peace conversion in a crisis, and present campaigns for peace conversion, should be extended to encompass institutional conversion. As in the case of resistance to repression, and survival and self-reliance, tactics and strategies which are part of preparation for a nuclear emergency also are sound in non-crisis situations, and as well reduce the risk of nuclear war by threatening the post-war political survival of those groups which have the greatest interest in the war system. For example, plans can be made for 'ordinary people' to occupy bomb and fallout shelters which are designed or reserved for state elites. This makes sense in the actual event of nuclear war, since afterwards the elites would be no more useful to the rest of the community than anyone else, and indeed are likely to be implicated, directly or indirectly, in policies which did nothing to stop the nuclear war. For present campaigns, such plans would expose the antidemocratic basis behind war preparations and efforts to 'protect' the population. Finally, if their shelter space were jeopardised by the 'masses', elites undoubtedly would be much more reluctant to risk the possibility of nuclear war. (g) Psychological responses to nuclear war[21] Preparation for nuclear war includes personal psychological preparation, which includes both coming to grips with the possibility of nuclear war and personal death, and developing the ability to survive psychologically an actual nuclear war and remain an effective social change agent. Coming to grips with the possibility of nuclear war and personal death must be developed in tandem with developing an anti-war strategy that takes into account the political reality of nuclear war, as has been discussed earlier. Psychological preparation for a nuclear emergency involves personal and group mechanisms for responding to: scapegoating (blaming the war or deaths on particular groups); uncontrolled rumour; apocalytic preoccupations (fundamentalist religious revivals, etc.); passive submission to determined forces, however undesirable, and to demagogues; reliance on 'leaders', outside orders, and one-directional communication channels. All these things are happening today. Present methods and strategies for responding to and countering them need to be strengthened and made resilient in the face of the greatly increased pressures in a nuclear crisis. Personal and group psychological survival in the aftermath of a nuclear war, or in any major social upheaval, depends on personal resources, feelings of intrinsic worth and other features of what people are rather than what they have achieved or accumulated. Psychological strength will be difficult to produce by those whose self-image is filled from television or drugs, is defined by others or is defined by bureaucratic institutions. Most people in society today fall into these or other similar categories: starting from scratch with out present psychological crutches would be for many people an immense task. This is a problem that affects efforts for social change generally. Hence getting to the bottom of fears about nuclear war and about surviving nuclear war is potentially a liberating process for present-day social change purposes. The will to survive involves the following: establishing a goal; thinking of gradual steps to achieve it; acquiring specific skills through training; and removing fear through knowledge. In the case of nuclear war, the last step means removing the fear of radiation and nuclear war through some general understanding of their effects. Likewise, efforts to survive in present society while at the same time helping to achieve social change can benefit through understanding the individual and collective pitfalls, failures and disasters that can occur. In neither case does understanding and overcoming fear of the undesirable mean that one's opposition necessarily is compromised: rather it can be made more effective. The goal is not the mentality of 'survive but do not protest' but rather 'protest with knowledge'.

## Nuclear War Doesn’t Cause Extinction

### Predictions of nuclear war causing extinction are inconclusive and based on faulty scenario-planning

Martin 90 (Brian, professor of Social Sciences at the University of Wollongong “Politics after a Nuclear Crisis” Journal of Libertarian Studies, Vol. IX, No. 2 (Fall 1990), pp. 69-78 <http://www.bmartin.cc/pubs/90jls.html> ) MFR

My argument here is simple. Whatever the likelihood that a major nuclear confrontation will result in total annihilation of the earth's population, **a significant possibility remains** that nuclear crisis or war will leave major portions of the world's population alive and, for the most part, unaffected physically. If this is the case, then it is worth considering post-crisis and post-war politics. Three types of scenarios are worth noting: nuclear crisis, limited nuclear war, and global nuclear war. First, nuclear crisis: It is possible to imagine the development of a major nuclear confrontation short of nuclear war. This might be an extended nuclear emergency, like the 1962 Cuban missile crisis, yet more serious and prolonged. It could lead to declarations of martial law and changes in political structures, as described below, that might well persist beyond the nuclear crisis itself. Second, limited nuclear war: A nuclear war does not have to be global in extent. Such a war might be limited geographically - for example, to the Middle East - or restricted to the exchange of a few tactical or strategic nuclear weapons. Many analysts argue that it would be difficult to keep a nuclear exchange limited, but these arguments remain to be tested: There is no evidence of actual nuclear wars to prove or disprove them. It is worth remembering that expert predictions concerning wars (for example, that World War I would be over quickly) **have often been quite wrong**. It is also possible to imagine a "successful" first strike, for example, using a few high-altitude explosions over a country to disable electronics through the electromagnetic pulse, thereby putting the enemy's command and control systems out of commission. However unlikely the success of such a tactic, it cannot be ruled out a priori. Third, global nuclear war: If a nuclear war does escalate to major exchanges, does that mean that near or actual human extinction is certain? The available evidence is by no means conclusive. Although since the 1950s many people have believed that nuclear war will inevitably lead to the death of most or all the people on earth, the scientific evidence to support this belief **has been skimpy and uncertain**. The only mechanism currently considered to create a potential threat to the survival of the human species is the global climatic effects of smoke and dust from nuclear explosions, commonly called nuclear winter.[2] Even here, some scientists believe the effects will be much more moderate than initially proclaimed.[3] My assessment is that global nuclear war, while containing the potential for exterminating much of the world's population, might kill "only" some hundreds of millions of people - an unprecedented disaster to be sure, but **far short of global annihilation**.

### No extinction – large swaths of land and the Earth’s population would remain relatively unscathed

Martin 82 (Brian, professor of Social Sciences at the University of Wollongong “Critique of nuclear extinction” Published in Journal of Peace Research, Vol. 19, No. 4, 1982, pp. 287-300. <http://www.bmartin.cc/pubs/82jpr.html>) MFR

To summarise the above points, a major global nuclear war in which population centres in the US, Soviet Union, Europe and China ware targeted, with no effective civil defence measures taken, could kill directly perhaps 400 to 450 million people. Induced effects, in particular starvation or epidemics following agricultural failure or economic breakdown, might add up to several hundred million deaths to the total, though this is most uncertain. Such an eventuality would be a catastrophe of enormous proportions, but it is far from extinction. Even in the most extreme case there would remain alive some 4000 million people, about nine-tenths of the world's population, most of them unaffected physically by the nuclear war. The following areas would be relatively unscathed, unless nuclear attacks were made in these regions: South and Central America, Africa, the Middle East, the Indian subcontinent, Southeast Asia, Australasia, Oceania and large parts of China. Even in the mid-latitudes of the northern hemisphere where most of the nuclear weapons would be exploded, areas upwind of nuclear attacks would remain free of heavy radioactive contamination, such as Portugal, Ireland and British Columbia. Many people, perhaps especially in the peace movement, believe that global nuclear war will lead to the death of most or all of the world's population.[12] Yet the available scientific evidence provides no basis for this belief. Furthermore, there seem to be no convincing scientific arguments that nuclear war could cause human extinction.[13] In particular, the idea of 'overkill', if taken to imply the capacity to kill everyone on earth, is highly misleading.[14] In the absence of any positive evidence, statements that nuclear war will lead to the death of all or most people on earth should be considered exaggerations. In most cases the exaggeration is unintended, since people holding or stating a belief in nuclear extinction are quite sincere.[15] Another major point to be made in relation to statements about nuclear war is that almost exclusive attention has been focussed on the 'worst case' of a major global nuclear war, as indeed has been done in the previous paragraphs. A major global nuclear war is a possibility, but not the only one. In the case of 'limited' nuclear war, anywhere from hundreds of people to many tens of millions of people might die.[16] This is a real possibility, but **peace movement theory and practice have developed almost as if this possibility does not exist.**

### Extinction level calculus is exaggerated – laundry list

Martin 82 (Brian, professor of Social Sciences at the University of Wollongong “Critique of nuclear extinction” Published in Journal of Peace Research, Vol. 19, No. 4, 1982, pp. 287-300. <http://www.bmartin.cc/pubs/82jpr.html>) MFR

Here I outline a number of possible reasons for exaggeration of the effects of nuclear war and emphasis on worst cases. While the importance of most of these reasons may be disputed, I feel it is necessary to raise them for discussion. The points raised are not meant to lay blame on anyone, but rather to help ensure that peace movement theory and strategy are founded on sound beliefs. By understanding our motivations and emotional responses, some insight may be gained into how better to struggle against nuclear war. (a) Exaggeration to justify inaction. For many people, nuclear war is seen as such a terrible event, and as something that people can do so little about, that they can see no point in taking action on peace issues and do not even think about the danger. For those who have never been concerned or taken action on the issue, accepting an extreme account of the effects of nuclear war can provide conscious or unconscious justification for this inaction. In short, one removes from one's awareness the upsetting topic of nuclear war, and justifies this psychological denial by believing the worst. This suggests two things. First, it may be more effective in mobilising people against nuclear war to describe the dangers in milder terms. Some experiments have shown that strong accounts of danger - for example, of smoking[17] - can be less effective than weaker accounts in changing behaviour. Second, the peace movement should devote less attention to the dangers of nuclear war and more attention to what people can do to oppose it in their day-to-day lives. (b) Fear of death. Although death receives a large amount of attention in the media, the consideration of one's own death has been one of the most taboo topics in western culture, at least until recently.[18] Nuclear war as an issue raises the topic insistently, and unconsciously many people may prefer to avoid the issue for this reason. The fear of and repression of conscious thoughts about personal death may also lead to an unconscious tendency to exaggerate the effects of nuclear war. One's own personal death - the end of consciousness - can be especially threatening in the context of others remaining alive and conscious. Somehow the death of everyone may be less threatening. Robert Lifton[19] argues that children who learn at roughly the same age about both personal death and nuclear holocaust may be unable to separate the two concepts, and as a result equate death with annihilation, with undesirable consequences for coping individually with life and working collectively against nuclear war. Another factor here may be a feeling of potential guilt at the thought of surviving and having done nothing, or not enough or not the right thing, to prevent the deaths of others. Again, the idea that nearly everyone will die in nuclear war does not raise such disturbing possibilities. (c) Exaggeration to stimulate action. When people concerned about nuclear war describe the threat to others, in many cases this does not trigger any action. An understandable response by the concerned people is to expand the threat until action is triggered. This is valid procedure in many physiological and other domains. If a person does not heed a call of 'Fire!', shouting louder may do the trick. But in many instances of intellectual argument this procedure is not appropriate. In the case of nuclear war it seems clear that the threat, even when stated very conservatively, is already past the point of sufficient stimulation. This means that what is needed is not an expansion of the threat but rather some avenue which allows and encourages people to take action to challenge the threat. A carefully thought out and planned strategy for challenging the war system, a strategy which makes sense to uncommitted people and which can easily accommodate their involvement, is one such avenue.[20] (d) Planning and defeatism. People may identify thinking about and planning for an undesirable future - namely the occurrence and aftermath of nuclear war - with accepting its inevitability (defeatism) or even actually wanting it. By exaggerating the effects of nuclear war and emphasising the worst possible case, there becomes no post-war future at all to prepare for, and so this difficulty does not arise. The limitations of this response are apparent in cases other than nuclear war. Surely it is not defeatism to think about what will happen when a labour strike is broken, when a social revolution is destroyed (as in Chile) or turns bad (as in the Soviet Union), or when political events develop in an expected though unpleasant way (as Nazism in the 1920s and 1930s). Since, I would argue, some sort of nuclear war is virtually inevitable unless radical changes occur in industrialised societies, it is realism rather than defeatism to think about and take account of the likely aftermath of nuclear war. An effective way to deal with the feeling or charge of defeatism is to prepare for the political aftermath of nuclear war in ways which reduce the likelihood of nuclear war occurring in the first place. This can be done for example by developing campaigns for social defence, peace conversion and community self-management in ways which serve both as preparation to resist political repression in time of nuclear crisis or war, and as positive steps to build alternatives now to war-linked institutions.[21] (e) Exaggeration to justify concern (I). People involved with any issue or activity tend to exaggerate its importance so as to justify and sustain their concern and involvement. Nuclear war is only one problem among many pressing problems in the world, which include starvation, poverty, exploitation, racial and sexual inequality and repressive governments. By concentrating on peace issues, one must by necessity give less attention to other pressing issues. An unconscious tendency to exaggerate the effects of nuclear war has the effect of reducing conscious or unconscious guilt at not doing more on other issues. Guilt of this sort is undoubtedly common, especially among those who are active on social issues and who become familiar with the wide range of social problems needing attention. The irony is that those who feel guilt for this reason tend to be those who have least cause to feel so. One politically effective way to overcome this guilt may be to strengthen and expand links between anti-war struggles and struggles for justice, equality and the like. (f) Exaggeration to justify concern (II). Spokespeople and apologists for the military establishment tend to emphasise conservative estimates of the effects of nuclear war. They also are primarily concerned with military and economic 'survival' of society so as to confront further threats to the state. One response to this orientation by people favouring non-military approaches to world order and peace is to assume that the military-based estimates are too low, and hence to exaggerate the effects and emphasise worst cases. The emotional underpinning for this response seems to be something like this: 'if a militarist thinks nuclear war will kill 100 million people and still wants more nuclear weapons, and because I am totally opposed to nuclear war or plans for waging it, therefore nuclear war surely would kill 500 million people or everyone on earth.' This sort of unconscious reasoning confuses one's estimate of the size of a threat with one's attitude towards it. A more tenable conclusion is that the value structures of the militarist and the peace activist are sufficiently different to favour very different courses of action when considering the same evidence. The assumption that a given item of information will lead to a uniform emotional response or conclusion about its implications is false. The primary factor underlying differences in response to the threat of nuclear war is not differences in assessments of devastation, but political differences. The identification of the degree of opposition to nuclear war with the degree of devastation envisaged may also lead to the labelling of those who make moderate estimates of the danger as lukewarm opponents of nuclear war. In many cases such an identification has some degree of validity: those with more awareness of the extent of racism, sexism, exploitation and misery in the world are often the ones who take the strongest action. But the connection is not invariable. Extremism of belief and action does not automatically ensure accurate beliefs or effective action. A recurrent problem is how to talk about nuclear war and wide scale devastation without appearing - or being - hardhearted. Peace activists are quite right to reject sterilised language and doublethink ('Peace is war') in discussions on nuclear death and destruction, especially when the facade of objectivity masks dangerous policies. But an exclusive reliance on highly emotional arguments, or an unofficial contest to see who can paint the worst picture of nuclear doom, is undesirable too, especially to the degree it subverts or paralyses critical thinking and creative development of strategy. Another unconscious identification, related to the identification of the level of opposition to nuclear war with the level of destruction thought to be caused by it, arises out of people's abhorrence at 'thinking about the unthinkable', namely post-nuclear war planning by military and strategic planners. This abhorrence easily becomes abhorrence at 'thinking about the unthinkable' in another sense, namely thinking about nuclear war and its aftermath from a peace activist point of view. The abhorrence, though, should be directed at the morality and politics of the military and strategic planners, not at thinking about the 'unthinkable' event itself. Many peace activists have accepted the reality of nuclear war as 'unthinkable', leaving the likes of strategic planner Herman Kahn with a virtual monopoly on thinking about nuclear war. So while post-nuclear war planning is seriously carried out by some military and government bodies, the strategies of the peace movement are seriously hampered by the gap created by self-imposed 'unthinkability'. (g) White, western orientation. Most of the continuing large-scale suffering in the world - caused by poverty, starvation, disease and torture - is borne by the poor, non-white peoples of the third world. A global nuclear war might well kill fewer people than have died of starvation and hunger-related disease in the past 50 or 100 years.[22] Smaller nuclear wars would make this sort of contrast greater.[23] Nuclear war is the one source of possible deaths of millions of people that would affect mainly white, rich, western societies (China and Japan are the prime possible exceptions). By comparison, the direct effect of global nuclear war on nonwhite, poor, third world populations would be relatively small. White westerners may tend to identify their own plight with that of the rest of the world, and hence exaggerate the threat of destruction wreaked on their own societies into one for all of humanity. White westerners may also tend to see the rest of the world as vitally dependent on themselves for survival, and hence see catastrophe for all as a result of a nuclear war which destroys 'civilisation'. In practice, poor non-white populations arguably would be better off without the attentions of white, western 'civilisation' - although nuclear war is hardly the way to achieve this. These considerations suggest the importance of strengthening links between peace struggles and struggles for justice, equality and freedom from exploitation in poor countries. (h) Failure of the peace movement. A nuclear war would be for many people in the peace movement a failure of the peace movement itself. It would mean psychologically that all their pleas, proposals, efforts to promote disarmament, protests and intense commitments had been in vain. There may be a tendency to confuse a perceived failure of the peace movement with the 'end of the world': the end (failure) of attempts to prevent nuclear war, which is the end of the previous (pre-nuclear war) 'world' of the peace movement, is unconsciously identified with the end of the real world. This may lead to a tendency to exaggerate the effects of nuclear war. In actuality, any nuclear war would be primarily the consequence (but not the intent) of activities of institutions that prepare for war, such as governments, military establishments, and arms manufacturers and designers.[24] Any suggestions emanating from this realm that the peace movement is somehow to blame would merely be an exercise in scapegoating. But it is important for peace activists to be aware that their own efforts and organisations and aspirations are not the be-all and end-all. Peace activists should realise that the necessity of their efforts will not be ended with the coming of nuclear war, but rather multiplied. Strategies should not be built on the idea that everything ends when nuclear war starts, but must be resilient in the face of crises and failures. (i) Day-to-day life. Most people's lives are based on a firm foundation of underlying regularity, pattern and routine: job, home life, friends, recreation, commitments, aspirations. Often this is finely tuned and balanced: one may be struggling to maintain house payments, to do the right thing to obtain a future job or promotion, or to maintain important or sensitive personal relationships. All this is tied in with a delicately balanced rationale for existence: doing the right things in terms of family, friends, work and social issues. Day-to-day life is severely threatened by the idea of nuclear war, which is one reason why many people blot the idea from their conscious minds. All one's plans for rearing one's children, doing one's' duty at home or on the job, or retiring comfortably are thrown into jeopardy. One way to avoid the problem is to believe that nuclear war is the end; if it comes, everything disappears, including personal worries and difficulties. Perhaps even a greater threat to day-to-day life is the possibility of survival in a major social change such as nuclear war. In the ensuing chaos, one's previous achievements and current abilities may become totally irrelevant: one may have to start from scratch in the quest for food, clothing, shelter, new personal relationships and meaning for life in a post-nuclear war world. Old hierarchies may be toppled or severely challenged: the ability to manage a government department, or write advertising copy, or sell merchandise may become irrelevant. This would be especially threatening to many who currently are highly successful in the eyes of the world. Personally, after I became aware of the evidence concerning the effects of nuclear war, it took me quite some time to adjust to the idea of survival and existing in a post-nuclear war world. It seems plausible to me that the tendency to believe the worst about nuclear war owes something to a reluctance to envisage a drastic change in one's day-to-day life or to realise the pointlessness of many of the ordinary activities which give most people their sense of identity. It is vitally important that activists do think through their response to survival of a nuclear war. Even if nuclear war never occurs, this is still valuable, since nuclear war is not the only social crisis that can dramatically alter our usual lives. If the war system is to be transformed, almost certainly it will require vast social changes for which activists need to be prepared psychologically and organisationally. (j) Reformist political analysis. Closely linked with exaggeration of the efforts of nuclear war and emphasis on worst cases is a political strategy that provides little fundamental challenge to prevailing social institutions. The bulk of efforts for peace are based on the assumed power of knowledge and logic to convince decision-makers to change policies. This includes many of the efforts to influence directly the opinions of decision-makers (e.g. negotiation, lobbying), to influence their opinions through public pressure (e.g. generated through education campaigns) and even through direct action (e.g. mass demonstrations, civil disobedience). The solution promoted by many such efforts is essentially disarmament within the framework of present social, political and economic structures. The institutional structures in which corporate managers, party bureaucrats and political leaders are dominant would still be intact: only the bombs would be gone. It can be argued[25] that efforts based on the assumed power of knowledge and logic are insufficient, since the actions of decision-makers are mainly determined not by opinions but by interests rooted in current institutional arrangements. Furthermore, disarmament is an inadequate goal in as much as it leaves intact the structural forms which are linked with the use of organised violence, including hierarchical organisational forms, large differences in power, prestige and wealth, and the nation-state system. If these structures are the source of the nuclear threat, then it might be asked, why should disarmament be pursued in a way which leaves them intact? The apparent answer is the very magnitude of the nuclear threat itself. One false step by one's own leaders, so the conventional wisdom decrees, and the holocaust may be upon us - initiated by the enemy, of course. In these circumstances, any destabilising challenges to the power structures on either side are dangerous, and to be avoided. This becomes a prescription for reformism, rather than promotion of more fundamental changes, as the road to peace. The greater the magnitude of disaster that nuclear war poses, the greater the injunction to avoid dangerous destabilising tactics and strategies. It may be for this reason that governments have not made greater attempts to disabuse people of the notion that nuclear war is the end of civilisation or life on earth. The more extreme the disaster, the more apathetic people become and the less likely they are to challenge the powers that be. Military and political planners do not think in these terms, naturally, and so on occasion publicly promote measures for civil defence or for fighting limited nuclear wars, so stimulating a hornet's nest of citizen concern and opposition. Doomsdayism has often been linked with conservative or reformist politics, as in the case of claims of environmental doom.[26] A more realistic assessment of the consequences of nuclear war needs to be accompanied by a non-reformist political strategy for challenging the war system. Such a strategy might for example be built around campaigns for social defence, for peace conversion, for freedom, justice and equality, and for creating nonhierarchical political and economic institutions.[27] At the same time, present campaigns based on the power of knowledge and logic would remain important: although insufficient, they are still necessary. (k) Media. The media tend to promote drama and death, and hence promote exaggeration and emphasis on worst cases in relation to nuclear war, and promote those who make these emphases. This arises partly from the lack of continuity and social context in most media stories, and from providing sufficient bad news (death, destruction) so that the consumers of the media can delight in the 'good' news (advertising of products, one's own ordinary untraumatic life). These tendencies in the media are accentuated by centralised control over the form and content of the media. (l) Cataclysm. Cataclysms are usually seen as more significant than constant or routine processes which have the same net effect. Large airplane crashes receive intense publicity, whereas the road toll - or the toll of starvation, disease and poverty - less often rates attention. Although there may be an innate tendency to notice unusual events, social mechanisms could readily be developed to focus appropriate attention on non-spectacular problems. The emphasis on cataclysm is reinforced by the media and by the conservative nature of day-to-day routine. Nuclear war is seen as the ultimate cataclysm, and this leads to emphasis on worst cases. The challenge for peace activists is to shift the focus of attention from the cataclysm of nuclear war to the routine efforts needed to build opposition to the war system - itself a routine operation.

## ---- A2: Ozone Destruction Causes Extinction

### Not likely – new weapons don’t affect oxygen and nitrogen in the stratosphere and we won’t die

Martin 83 (Brian, professor of Social Sciences at the University of Wollongong “The fate of extinction arguments” http://www.bmartin.cc/pubs/83fea.html) MFR

Scientific studies in the mid 1970s showed that stratospheric ozone in the northern hemisphere could be reduced by 50 percent for more for a few years by the explosion of 10,000Mt (megatonnes) of nuclear weapons. These are the studies on which Schell relies. But trends in nuclear weaponry over the past decade or so have reduced the likely effect on ozone. Instead of relying so much on multimegatonne warheads, the United States and the Soviet Union have been and are continuing to convert the payloads of their strategic ballistic missiles to larger numbers of smaller warheads, usually each less than one megatonne. Numerous smaller warheads can cause more destruction at ground level, but they don't deposit oxides of nitrogen in the stratosphere in any quantity. So at least at the moment, the threats to human life from increases in ultraviolet light following nuclear war appear to be **negligible**.[2] But even if stratospheric ozone were reduced by 50 percent or more, few of the consequences portrayed by Schell would result. For example, permanent blinding of humans or other animals seems very unlikely. Stratospheric ozone levels vary considerably from place to place and time to time. Ultraviolet light passes through only about half as much ozone at the equator as at mid-latitudes, yet blindness in humans and other animals is not known to be more common at the equator than elsewhere. In addition, if ozone reductions did occur as a result of nuclear war, they would mainly occur in the northern mid-latitudes where ozone levels are higher to start with. So widespread blindness from ultraviolet light seems an unlikely possibility on two counts. Similar comments apply to the other dangers from ultraviolet light listed by Schell.

## ---- A2: US-Russia NW Causes Extinction

### This argument is laughable – multiple factors means the U.S. population will still survive and other countries too

Martin 83 (Brian, professor of Social Sciences at the University of Wollongong “The fate of extinction arguments” http://www.bmartin.cc/pubs/83fea.html) MFR

The only other possible basis for extinction listed by Schell is "the outright slaughter on all targeted continents of most human beings and other living things by the initial nuclear radiation, the fireballs, the thermal pulses, the blast waves, the mass fires, and the fallout from the explosions" (p. 93). How does Schell arrive at the conclusion that the immediate effects of nuclear weapons could even kill "most human beings"? To start with, he treats fairly realistically the effect of 10,000Mt of nuclear weapons dropped on the United States (p. 54). Such an attack would indeed be catastrophic, potentially killing three quarters or more of the US population. Schell suggests that 10,000Mt could kill virtually all the US population due to fallout, since he says if the 10,000Mt were evenly distributed and all weapons exploded at ground level, all parts of the US would be exposed to ten thousand rads - and one thousand rads will kill all the people exposed to it. Yet this argument is quite dubious. First, not all weapons would be exploded at ground level. Second, as Schell notes, the fallout would not be uniformly distributed, so many areas would escape heavy contamination. Third, Schell takes no account of protection, for example by ordinary buildings. Most US houses have basements which could reduce radiation levels by a factor of ten or more. These qualifications change Schell's picture to one showing the survival of at least several tens of millions of people in the US, in agreement with the usual run of studies which give no grounds for anything approaching extinction. In any case, it seems unlikely that 10,000Mt could ever be delivered to the US by the Soviet Union. Total megatonnage in the Soviet arsenal is probably around 7500Mt (with 3500Mt in the US arsenal). In any war scenario except a completely successful Soviet first strike, it is likely that many Soviet weapons would be destroyed before use by anti-submarine warfare, anti-aircraft against bombers, or strikes against ICBMs. This plus missile unavailability and unreliability suggests that it is unlikely that even half the Soviet arsenal could reach the US. So Schell's 10,000Mt attack on the US is very much an extreme case, virtually impossible in practice. But if all Soviet weapons were targeted on US targets, there would be none left for other places, such as China, Europe and Japan. Simultaneous extermination of people in all these areas seems out of the question. To kill most people on earth would require 10,000Mt or more on the US, 10,000Mt or more on Europe, 10,000Mt or more on China and so forth. Neither the Soviet Union nor the US have anything like the arsenal or the delivery capacity to achieve this level of destruction. At this stage in his argument, Schell makes a big jump with no justification. He asserts "most European countries would be annihilated by tens of megatons" (p. 65). The deaths of many millions of people might well result from attacks of this magnitude, but Schell does not show how 'annihilation' could possibly result. The danger of extinction from blast, heat and local fallout from nuclear attacks seems as remote as extinction from ozone depletion.

# Future Generations

## Discounting Future Generations Is Ethical

### It’s not unethical – this logic relies on a backwards theory of utilitarian calculus that resembles Robin Hood, but instead steals from the poor and gives to the rich

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The shortcomings of this reasoning might be that in the same intergenerational context, the other component of the discount rate would have to be looked at differently as well. Can it be the mere product of the per capita growth rate times the “income elasticity of the marginal utility of income” – while the income in question is not that of the same individuals? If future generations are richer than the current one, there is **little justification** of depriving additional money from the current, poorest generation in order to increase wealth of subsequent ones. In other words, if one chooses to be ethically “prescriptive” (Arrow et al., 1995) on pure time preference, consistency requires a similar approach – but with opposite results – on the “wealth effect”. For example, a Rawlsian maximin approach would give an infinite value to the coefficient θ - and hence, to the discount rate – even though pure time preference would be prohibited. Naturally, such discount rate could only apply to investments having only intergenerational effects (but note this may well be the case of climate change mitigating investments, with very small near term effects). More generally, discounting the future does not appear unethical, for if discounting utility of future generations might be, discounting their consumption might not be – provided per capita economic growth is real. As Baumol (1968, p. 800) wrote, “a redistribution to provide more for the future may be described as a Robin Hood activity stood on his head – **it takes from the poor to give to the rich**. Average real per capita income a century hence is likely to be a sizeable multiple of its present value. Why should I give up part of my income to help support someone else with an income several times my own?” In this sense, an ethical appraisal of discounting does not conflict with Fisher’s lesson: the productive nature of the economy legitimates discounting1.

### It’s a question of utility and degrees – your focus on the future makes tradeoffs from the present *worse*, offsetting your impact.

Beckerman & Hepburn 7 (Wilfred, Emeritus Fellow of Balliol College, Oxford, and an Honorary Visiting Professor of Economics at University College London. Cameron, is a James Martin Fellow in Climate Policy at Oxford University and the Elizabeth Wordsworth Junior Research Fellow at St Hugh’s College, Oxford “Ethics of the Discount Rate in the Stern Review on the Economics of Climate Change” WORLD ECONOMICS • Vol. 8 • No. 1 • January–March 2007 http://qed.econ.queensu.ca/pub/faculty/garvie/econ443/debate/beckerman%20and%20hepburn.pdf) MFR

However, these defences are not available for climate change, where policy creates winners and losers between generations and intergenerational compensation is not possible. First, future generations that may benefit from any current policies cannot compensate those today who may bear the costs of the policy. Second, the swings and roundabouts argument cannot apply intergenerationally. Losers in the present generation have no hope of being winners in any subsequent generation. Thirdly, there is not, and can never be, any inter-temporal government that can adjust the intergenerational income distribution in accordance with any trans-generational views on what would be an equitable intergenerational distribution of welfare.

### Holding future generations as the ultimate impact means that no lives today have value due to exponential increases in the future, turning their ethics argument

Murray and Acharya 2 (Christopher J.L., Professor of Global Health at the University of Washington and Institute Director of the Institute for Health Metrics and Evaluation (IHME).Arnab, PhD Econ. “AGE WEiGHTS AND DiSCOUNTiNGiN HEALTH GAPS RECONSiDERED” <http://libdoc.who.int/publications/2002/9241545518_Chap13.3.pdf>. Summary Measures of Population Health) MFR

Our argument that r > 0 should not be taken as a purely mathematical argument. Improving technology makes future generations better off than the present generation. Since the payoff is greater in the future we post-pone all interventions. This seems to be an excessive sacrifice borne by the present generation. Anand and Hanson (1997), by referring to a paper by Anand and Sen (1994), seem to view future generations’ health as analogous to their enjoyment of the environment. The analogy is not altogether justified. The present generation by using resources to better its own health does not deprive future generations of resources in the same sense, say,as strip mining would. In the latter case there is an act of depriving the future generation of something that is irreplaceable. In the case of favouring the health of the present generation, we deprive future generations in the same way as we do when the present generation dissaves.5 Also not favouring their own health over the others might induce excessive sacrifices in light of technological progress. The formulation in Anand and Hanson (1997) does not preclude excessive sacrifice by the present generation. As noted by Parfit (1984), an excessive sacrifice argument may lead to a different form of discounting of the future than would a classical expo-nential decay discounting function, where more distal generations are discounted more than proximal generations. Based purely on the argument of excessive sacrifice, life years for generation n + k are no more or less important than life years for generation n. We simply cannot call upon the current generation to sacrifice so much of currently available health re-sources to improve the health of future generations. Each future genera-tion, however, would have an equal claim on current resources. Of course, the small but non-zero probability of global disaster and the extinction of mankind means that we would slightly discount the claims of generation n + k compared with generation n. A declining discount rate perhaps similar to an exponential decay maybe used for proximal generations for two reasons. First, there is substan-tial but steadily decreasing generation overlap for the next two to four gen-erations. Beneficiaries of an intervention purchased today which prevents burden in 50 years would be a mix of currently living and future genera-tions. Second, the current generations may have some legitimate special concern for specific members of the next generation such as their children and grand-children above and beyond their concern for all future genera-tions. We could, therefore, conclude that a discount function which ap-proximates the classical exponential decay function for 100 to 150 years and is thereafter flat may adequately reflect concerns over excessive sacrifice brought about by the eradication and research paradoxes. The empirical findings of Cropper et al. (1994) are consistent with the notion that **individuals may have a much lower marginal discount rate for dis-tant events than for proximal events**

### Future generational focus requires that the lives today are insignificant

Murray and Acharya 2 (Christopher J.L., Professor of Global Health at the University of Washington and Institute Director of the Institute for Health Metrics and Evaluation (IHME).Arnab, PhD Econ. “AGE WEiGHTS AND DiSCOUNTiNGiN HEALTH GAPS RECONSiDERED” <http://libdoc.who.int/publications/2002/9241545518_Chap13.3.pdf>. Summary Measures of Population Health) MFR

The weight of present generation in the calculation of the value of the project aims at zero while the weight of the future aims at infinity. The discount rate aims at minus infinity. The consequences of applying the above level of the discount rate are that any project impacts for contemporary generation, not matter if they are good or wrong, are not important if only they can guarantee the increase in future wellbeing. That would lead to accepting projects irrespective of today’s outlays if only they generate some minimal amount of future positive impacts. The discounted value of present costs aims at zero while any future benefits aims at infinity.

# Precautionary Principle Bad

## 1NC—Precautionary Principle Bad

### The precautionary principle is flawed and illogical – any invocation of the framework spills over and makes potentially life-saving actions impossible

**Graham** 1/27/**11** (“On Pascals’ Wager and the Precautionary Principle” [http://zone5.org/2011/01/on-pascals-wager-and-the-precautionary-principle/) MFR](http://zone5.org/2011/01/on-pascals-wager-and-the-precautionary-principle/)%20MFR)

Pascal’s Wager was originally to do with belief in a deity: in the absence of faith, we cannot be sure God exists, but we cannot be sure He does not exist either- so we might as well believe in Him (or live as if we do) “just in case”- presumably the reasoning being, if we arrive at he Pearly Gates a self-professed atheist, only to find there really is a God, it may the worse for us. I have deliberately used “God” “He” and “Him” because Pascal was talking about the particular deity promoted by the dominant church of his time, and therein lies the problem, because in the absence of evidence for any such deity, by the same reasoning, one should make the same wager for every conceivable deity- or indeed every imaginable invisible being or entity of any kind- in other words, we should hedge our bets by believing in absolutely every possible eventuality, every god of every religion, and every other conceivable god, demon or spirit as well- “just in case”. I actually remember thinking this through when really quite young- I dont know what age, but I would say somewhere around the age of 12, possibly younger. The gods on offer seemed arbitrary even then- as an equally likely proposition, I reasoned, how do we know there are not Three Gods, called “Tom, Dick and Harry” ? I even began imagining different personalities for these three supernatural beings, and inventing sagas and stories about their heavenly exploits. The converse for belief in the Devil would also be true, putting me in mind of Rowan Atkinson’s “Welcome to Hell” sketch. “Atheists- over here please… I expect you’re feeling a right bunch of nitwits aren’t you?” So what happens if we apply this line of reasoning to the environment, particularly climate change? In fact, the “Precautionary Principle” seems to be invoked to inform a great deal of positions within the environmental movement, going back to Norwegian Prime Minister, Gro Harlem Brundtland, and the World Commission on Environment and Development’s report in 1987, ‘Our Common Future’. The commission said that: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of ‘needs’, in particular the essential needs of the world’s poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organisation on the environment’s ability to meet present and future needs.” Commonwealth Secretariat, 2000 Stephen Gardiner of the University of Washington has written this useful paper outlining the main issues around the use of the Precautionary Principle, which can be formulated as “weak” or “strong”. While the “weak” version may be too vacuous to be more than just a framework for discussing risks, the “strong” kind is so proscriptive as to be stifling: don’t do anything in case something bad happens. Don’t get up and go out to work in case you have a car crash; on the other hand, dont just lie there in bed either in case the roof caves in on your head. Gardiner dismisses the strong version as absurd,but naively claims that Presumably, no one really accepts this principle.13 It suggests that if there is any possibility, no matter how small, that an activity might prove harmful, then it should be banned completely—and this without any consideration for its possible benefits. On such grounds we would be justified in banning an extremely successful cure for cancer on the grounds that there was a 0.001% chance that it might cause a minor rash in some patients. **This is surely crazy**. If the precautionary principle entails that, then everyone would agree that it is a bad principle. Yet it seems to me that this is exactly the way the PP (Precautionary Principle) is usually used- an Ace pulled out of the pack purely to ban something that people dont agree with or dont understand. This is especially true of Genetic Engeneering- see for example this opinion found randomly in seconds from a google search: If the precautionary principle had been applied, all forms of genetically engineered foods and crops would never have been tested, approved, and released. At least since 1997, there has been sufficient scientific evidence to justify evoking the precautionary principle and calling for an immediate ban of all genetically engineered food and crops. Fairlie in the above quotation from his book Meat invokes to PP with regard to climate change. He seems to be saying, we should believe in ACC because the consequences of not believing it (and acting on it) would be catastrophic- a sort of “Maximin” approach (as described by Gardiner) whereby precaution can be invoked if the consequences of not being cautious are so extreme that, even if unlikely, the risk outweighs any benefits. I’m not sure this works either however- the consequences of a car crash could be fatal, and the risks, while small on any given journey, real enough given that people die on Irish roads every week; but to avoid car journeys on this basis would seem extreme. This kind of cost-benefit analysis is what we all do every day in such cases- we take what we consider an acceptable risk in exchange for tangible benefits (in this case, use of a car). In the same way, clearly (it seems to me) one of the difficulties of getting people to act on climate change is precisely that it requires giving up too many benefits now for risk aversion in the future. In that respect, the car analogy seems quite apt: business as usual is simply too convenient to give up, even though there may be a serious risk in the future. The risk just doesnt seem real enough, as evidenced by the fact that we have completely failed to reduce emissions thus far, and would not have made any significant difference even had we fully implemented Kyoto. Going back to Fairlie’s quote, what is more incredible is his comment: ” …I believe it is an appropriate ideology (or religion if you prefer) for humanity at a time when we are clearly placing too much pressure on the environment through excessive population and consumption.” Fairlie is here asserting that belief in ACC and the need to cut emissions least we face certain disaster is an “appropriate” ideology or religion- given his assumption (probably the mainstream environmental assumption) that there are too many people consuming too much. What on earth can this mean? Isnt this somehow confusing science (climate science) with religion? Isn’t this exactly what many of the more vocal climate skeptics accuse “climate alarmism” of being, a religion? Surely if ACC is real and there are too many people and we are consuming at an unsustainable rate, then the last thing we would need is a religion to back up the facts. Fairlie is essentially openly admitting that his views on climate change etc are driven by an ideology that we are too many and too greedy. One interpretation of sustainable development assumes that natural capital, such as forests, wildlife and other natural resources, cannot be substituted for other forms of capital, such as man-made capital. So the precautionary principle often does have a purely ideological basis, the belief that technology and human innovation is in someway inferior or more risky than “natural” ways of living- whatever they may be. Lomborg in particular has argued that the precautionary principle is largely behind concerns over climate change which he believe are hugely over-blown and a result of general hypochondria and a tendency to doom-monger: the sky is always falling, and in some ways the PP is just a way of psychologically hedging our bets by expecting the worst. But failing to act, take risks, be adventurous, also has risks: failure to develop new technologies may also cost us dear and leave us sorry rather than safe. We have been faced with these dilemmas since we first invented fire. We learn not to go too close to the fire as children, but there is always a risk, and accidents still happen. **That’s life- we have to act, we have to make choices.**

### Strong versions of the precautionary principle puts a focus on contradictory apocalyptic scenarios – that results in serial policy failure

van den Belt 3 (Henk, Assistant Professor of Applied Philosophy at the University of Wageningen “Debating the Precautionary Principle: "Guilty until Proven Innocent" or "Innocent until Proven Guilty"?” Plant Physiology 132:1122-1126 (2003) http://www.plantphysiol.org/content/132/3/1122) MFR

Before looking into the proper assignment of the burden of proof, we must first examine more closely the underlying justification for the strong version of the PP. Why should the prospect of harmful effects of a new technology take precedence over the prospect of beneficial effects, quite apart from the inherent likelihood of each of these possibilities? The obvious answer seems to be that such a priority is defensible only when the harmful effects are of such magnitude that they carry catastrophic (or, as Jonas would say, "apocalyptic") potential. The infinite costs of a possible catastrophic outcome necessarily outweigh even the slightest probability of its occurrence. This type of reasoning exhibits a remarkable resemblance to a well-known example of a "zero-infinity dilemma," namely Pascal's famous "wager." When it comes to wagering on the existence of God, the 17th century French philosopher argued incisively in his Pensées that it is better to be safe than sorry (Haller, 2000; Graham, 2002; Manson, 2002). Given an unknown but nonzero probability of God's existence and the infinity of the reward of an eternal life, the rational option would be to conduct one's earthly life as if God exists. Alas, Pascal's reasoning contains a fatal flaw. His argument is vulnerable to the "many gods" objection (Manson, 2002). Consider the possible existence of another deity than God, say Odin. If Odin is jealous, he will resent our worship of God, and we will have to pay an infinite price for our mistake. Never mind that Odin's existence may not seem likely or plausible to us. It is sufficient that we cannot exclude the possibility that he exists with absolute certainty. Therefore, the very same logic of Pascal's wager would lead us to adopt the opposite conclusion not to worship God. Pascal's argument, then, cannot be valid. If the wager argument is not valid, the strong version of the PP (which Manson dubs the "catastrophe principle") cannot be valid either. Take the application of this principle to the problem of global warming. Environmentalists often argue that even if it is not conclusively established that the emission of carbon dioxide and other gases causes an enhanced greenhouse effect, the mere prospect of an ecological catastrophe due to such a scenario should lead us to drastically curb our emissions of greenhouse gases now. By the same logic, however, one could conjure up the possibility of a coming ice age. The mere prospect of this equally catastrophic scenario should then induce us to avert this outcome by stepping up the emission of greenhouse gases. Thus, **the strong version of the PP would lead to contradictory recommendations** (compare with Graham, 2002). In a similar way, it could be argued that this principle commits us to each of two contradictory policies: (a) We must not develop GM crops, and (b) We must develop GM crops. The first alternative is argued vehemently by many environmentalists who appeal to the PP. To support the second possibility, Gary Comstock conjures up a dramatic scenario in which people are forced to seize upon the remaining reserves of nature in a desperate effort to overcome food shortages resulting from global warming. He then argues, in the style of the environmentalists, that "lack of full scientific certainty that GM crops will prevent environmental degradation shall not be used as a reason for postponing this potentially cost-effective measure" (Comstock, 2000).

## Precautionary Principle Flawed

### Reject the precautionary principle – based off flawed heuristics and rules of thumb

Cranor 3 (Carl F., Professor of Philosophy Faculty Member of the Environmental Toxicology Graduate Program “How Should Society Approach the Real and Potential Risks Posed by New Technologies?” Plant Physiology 133:3-9 (2003) <http://www.plantphysiol.org/content/133/1/3.full>) MFR

Given that strong versions of the precautionary principle fail to prescribe deﬁnite courses of action, in many of the circumstances that people wish to apply the precautionary principle, it seems that we need to explain why it is that so many people believe that the precautionary principle does prescribe deﬁnite courses of action in many circumstances. Sunstein (2003) attempts to address this question by drawing on the resources of behavioural economics and cognitive psychology. He considers a number of cognitive biases which have the potential to distort our reasoning about risk, leading us to overestimate the importance of some risks and to be oblivious to other risks (2003: 1035–1054). For example, the availability heuristic ensures that certain risks that are already familiar to us are present to consciousness when we are considering the possible consequences of our actions. If we are familiar with the events of ThreeMile Island and/or Chernobyl, then the availability heuristic operates to ensure that the risks of accidents are present to consciousness when we consider the pros and cons of operating nuclear power plants. If the risk of operating nuclear power plants seem particularly salient to us, then the eﬀect of such cognitive biases may be to distract us from even considering the risks of not operating nuclear power plants (such as the risks associated with climate change, due to the increased use of alternative sources of fuel). Rationally, we should consider both the risks associated with operating nuclear power plants and the risks of not operating nuclear power plants before deciding whether or not to operate nuclear power plants. However, humans often do not think this way. Instead we tend to focus on a particularly salient possible outcome and fail to consider other possibilities. The widespread belief that the application of strong versions of the precautionary principle lead to particular policy outcomes appears to be a consequence of such systematic biases in human reasoning.

### The precautionary principle leads to policy paralysis and focuses on an insular cognitive bias that fails to adequately solve the world’s problems

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

I aim to challenge the precautionary principle here, not because it leads in bad directions, but because, read for all that it is worth, it **leads in no direction at all**. The principle threatens to be paralyzing, forbidding regulation, inaction, and every step in between.3 To ex- plain this problem very briefly, the precautionary principle provides help only if we blind ourselves to many aspects of risk-related situa- tions and focus on a narrow subset of what is at stake.4 A significant part of my discussion will be devoted to showing why this is so. I will also urge that the precautionary principle gives the (false) appearance of being workable only because of identifiable cognitive mechanisms, which lead people to have a narrow rather than wide viewscreen. With that narrow viewscreen, it is possible to ignore, or to neglect, some of the risks that are actually at stake. I emphasize that we have good reason to endorse the goals that motivate many people to en- dorse the precautionary principle. These goals include the impor- tance of protecting health and the environment even from remote risks, the need to attend to unintended adverse effects of technologi- cal change, and the need to ensure that wealthy countries pay their fair share for environmental improvement and risk reduction. But the precautionary principle is a crude way of protecting these goals, which should be pursued directly. I do not attempt to develop any particular replacement for the precautionary principle, but I do argue on behalf of wide viewscreens in the regulation of risks.

## Impact Framing (Cognitive Bias)

### You should give their claims significant doubt – human cognition is invalid when evaluating risk with the precautionary principle –

### A. Loss aversion

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

The precautionary principle often seems appealing because of loss aversion. The central point here is that people dislike losses far more than they like corresponding gains.21 The result is that out-of-pocket costs, or deterioration from the status quo, seem much worse than opportunity costs, or benefits lost as a result of continuing the status quo. In the context of risks, people tend to focus on the losses that are associated with some activity or hazard and to disregard the gains that might be associated with that activity or hazard. The precaution- ary principle often becomes operational only because of loss aversion, as people take precautions against potential losses from the status quo, but neglect potential benefits that would be unmistakable gains.

**B. Myth of Benevolent Nature**

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

Loss aversion is often accompanied by a mistaken belief that na- ture is essentially benign,22 leading people to think that safety and health are generally at risk only or mostly as a result of human inter- vention. A belief in the relative safety of nature and the relative risk of new technologies often informs the precautionary principle.

### C. Availability Heuristic

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

It is well known that people focus on some risks simply because they are cognitively "available," whereas other risks are not.23 When the precautionary principle seems to require stringent controls on one risk, even though other risks are in the vicinity, the availability heuristic is a common reason. And when the availability heuristic is at work, certain hazards will stand out, whether or not they are statisti- cally large.24 The hazards associated with heat waves, for example, re- ceive little public attention, while the hazards associated with air travel are a significant source of public concern.2 One reason for this is that the latter hazards come readily to mind.

### D. Probability Neglect

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

People are sometimes prone to neglect the probability that a bad outcome will occur; they focus instead on the outcome itself.6 The precautionary principle often embodies a form of probability neglect. At least it does so when people invoke the principle to favor stringent controls on a low-probability risk, even though the consequence of those very controls is to give rise to new risks of equal or greater prob- ability.27

### E. System Neglect

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

The precautionary principle often reflects a general neglect of the systemic effects of regulation.28 When a single problem is placed in view, it can be difficult to see the full consequences of legal interventions. Sometimes the precautionary principle has the appearance of being workable only because a subset of the relevant effects are "on- screen"-and, as a result, there seems to be no need to take precau- tions against other possible adverse effects, also involving health and safety, that do not register. An important aspect of system neglect is tradeoff neglect, one source of the conflict between experts and ordinary people in thinking about risks.29 When experts disagree with ordinary people about risks, it is sometimes because experts look at both the benefits and the harms associated with the relevant practice, whereas ordinary people are paying attention to the harms but not the bene- fits.30 I suggest that the precautionary principle seems appealing, to ordinary people, in large part for the same reason.

## They Say: “But We Take Action!”

### No, the precautionary principle can use both action and inaction, we can still impact turn your framework

Clarke 6 (Steve, Centre for Applied Philosophy and Public Ethics, Canberra Division, Charles Sturt University and the Australian National University. Visiting Researcher “Future technologies, dystopic futures and the precautionary principle” Ethics and Information Technology (2005) 7:121–12. http://www.springerlink.com/content/1647305164l10337/fulltext.pdf) MFR

New technology can and does lead to a variety of undesirable and unexpected consequences. Telephone systems crash, data base errors lead to over and under-billing by government agencies and bugs in software systems lead to accidents as well as deaths (Baase 1997: 114–129). With the beneﬁt of hindsight it is easy to see many circumstances in which it would have been better if we had been more cautious. Merely to argue for greater caution is not yet to advocate the precautionary principle. Advocates of the precautionary principle do not simply argue that we are liable to underestimate risks. Rather, they argue that we should not act on the basis of risk assessments, as such. Instead, it is argued that we should always err on the side of caution. It is, say the proponents of the precautionary principle, ‘‘better to be safe than sorry’’. The fact that there is a deﬁnite description in common usage – ‘‘the precautionary principle’’ – might seem to suggest that there is an agreed upon formulation of this principle. Nothing could be further from the truth. The precautionary principle is variously deﬁned and its critics are wont to complain about the lack of a clear deﬁnition of the principle (Bodansky 1991) and of its lack of apparent logical structure (Gray and Bewers 1996: 768). What diﬀerent versions of the precautionary principle have in common is that they stress that we should be willing to act to avoid bringing about a possible set of undesirable circumstances, **even when we lack ﬁrm evidence** to suggest that such an outcome is even possible.

## They Say: “Deaths Outweigh”

### Precautionary principle is not warranted or rooted in objective risk calculus – makes death and extinction inevitable

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

In these cases, what kind of guidance is provided by the precautionary principle? It is tempting to say, as is in fact standard, that the principle calls for strong controls on arsenic, on genetic engineering of food, on greenhouse gases, on threats to marine mammals, and on nuclear power.89 In all of these cases, there is a possibility of serious harms, and no authoritative scientific evidence suggests that the pos- sibility is close to zero. If the burden of proof is on the proponent of the activity or process in question, the precautionary principle would seem to impose a burden of proof that **cannot be met.** Put to one side the question of whether the precautionary principle, understood to compel stringent regulation in these cases, is sensible. Let us ask a more fundamental question: Is that more stringent regulation there- fore compelled by the precautionary principle? The answer is that it is not. In some of these cases, it should be easy to see that, in its own way, stringent regulation would actually run afoul of the precautionary principle. The simplest reason is that such regulation might well deprive society of significant benefits, and for that reason produce a large number of deaths that otherwise would not occur. In some cases, regulation eliminates the "opportunity benefits" of a process or activity, and thus causes preventable deaths.90 If this is so, regulation is hardly precautionary. The most familiar cases involve the "drug lag," produced by a highly precautionary ap- proach to the introduction of new medicines and drugs into the mar- ket.91 If a government takes such an approach, it might protect peo- ple against harms from inadequately tested drugs; but it will also prevent people from receiving potential benefits from those very drugs.2 Is it "precautionary" to require extensive premarketing test- ing, or to do the opposite?

### The precautionary principle requires spending on regulation – causes deaths due to rich/poor gaps

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

It is possible to go much further. A great deal of evidence suggests the possibility that an expensive regulation can have adverse effects on life and health."3 To be sure, both the phenomenon and the underlying mechanisms are disputed.14 It has been urged that a statistical life can be lost for every expenditure of $7.25 million,"5 and one study suggests a cutoff point, for a loss of life per regulatory expenditure, of $15 million.16 A striking paper suggests that poor peo- ple are especially vulnerable to this effect-that a regulation that reduces wealth for the poorest twenty percent of the population will have twice as large a mortality effect as a regulation that reduces wealth for the wealthiest twenty percent."7 I do not mean to accept any particular amount here, or even to suggest that there has been an unambiguous demonstration of an association between mortality and regulatory expenditures."l1 The only point is that reasonable people believe in that association. It follows that a multimillion-dollar ex- penditure for "precaution" has-as a worst case scenario-significant adverse health effects, with an expenditure of $200 million leading to perhaps as many as thirty lives lost. This point makes the precautionary principle hard to implement not merely where regulation removes "opportunity benefits" or intro- duces or increases substitute risks, but also in any case in which the regulation costs a significant amount. If this is so, the precautionary principle, for that very reason, seems to argue against many regula- tions. If the precautionary principle draws into doubt any action that carries a small risk of significant harm, then we should be reluctant to spend a lot of money to reduce risks, simply because those expendi- tures themselves carry risks. Here is the sense in which the precau- tionary principle, taken for all that it is worth, is paralyzing: it stands as an obstacle to regulation and nonregulation, and to everything in between.

## Economy—1NC

### Existential risk calculus increases arbitrary risk aversion – kills economic growth and innovation

Jones 11 (Charles I., Professor of Economics at the Stanford Graduate School of Business and a Research Associate of the National Bureau of Economic Research. Professor Jones has been honored as a National Fellow of the Hoover Institution, a John M. Olin Foundation Faculty Fellow, and an Alfred P. Sloan Foundation Research Fellow. His research has been supported by a series of grants from the National Science Foundation. “LIFE AND GROWTH” – NBER Working Paper 17094. <http://www.nber.org/papers/w17094>) MFR

In October 1962, the Cuban missile crisis brought the world to the brink of a nuclear holocaust. President John F. Kennedy put the chance of nuclear war at “somewhere between one out of three and even.” The historian Arthur Schlesinger, Jr., at the time an adviser of the President, later called this “the most dangerous moment in human history.”1 What if a substantial fraction of the world’s population had been killed in a nuclear holocaust in the 1960s? In some sense, the overall cost of the technological innovations of the preceding 30 years would then seem to have outweighed the benefits. While nuclear devastation represents a vivid example of the potential costs of technological change, it is by no means unique. The benefits from the internal combustion engine must be weighed against the costs associated with pollution and global warming. Biomedical advances have improved health substantially but made possible weaponized anthrax and lab-enhanced viruses. The potential benefits of nanotechnology stand beside the threat that a self-replicating machine could someday spin out of control. Experimental physics has brought us x-ray lithography techniques and superconductor technologies but also the remote possibility of devastating accidents as we smash particles together at ever higher energies. These and other technological dangers are detailed in a small but growing literature on socalled “existential risks”; Posner (2004) is likely themost familiar of these references, but see also Bostrom (2002), Joy (2000), Overbye (2008), and Rees (2003). Technologies need not pose risks to the existence of humanity in order to have costs worth considering. New technologies come with risks as well as benefits. A new pesticide may turn out to be harmful to children. New drugs may have unforeseen side effects. Marie Curie’s discovery of the new element radium led to many uses of the glow-in-the-dark material, including a medicinal additive to drinks and baths for supposed health benefits, wristwatches with luminous dials, and as makeup — at least until the dire health consequences of radioactivity were better understood. Other examples of new products that were intially thought to be safe or even healthy include thalidomide, lead paint, asbestos, and cigarettes. While some new technologies are dangerous, many others are devoted to saving lives. Lichtenberg (2005), for example, estimates that new pharmaceuticals accounted for perhaps 40 percent of the rise in life expectancy between 1986 and 2000. MRI machines, better diagnostic equipment, and new surgical techniques as well as anti-lock brakes, airbags, and pollution scrubbers are all examples of lifesaving technologies. How is growth theory altered when technologies involve life and death instead of just higher consumption? Consider what might be called a “Russian roulette” theory of economic growth. Suppose the overwhelming majority of new ideas are beneficial and lead to growth in consumption. However, there is a tiny chance that a new idea will be particularly dangerous and cause massive loss of life. Do discovery and economic growth continue forever in such a framework, or should society eventually decide that consumption is high enough and stop playing the game of Russian roulette? How is this conclusion affected if researchers can also develop life-saving technologies? The answers to these questions turn out to depend crucially on the shape of preferences. For a large class of conventional specifications, including log utility, safety eventually trumps economic growth. The optimal rate of growth may be substantially lower than what is feasible, **in some cases falling all the way to zero**.

### Global nuclear war

Mead 9 [2/4, Walter Russell, Henry A. Kissinger Senior Fellow in U.S. Foreign Policy at the Council on Foreign Relations, Only Makes You Stronger: Why the recession bolstered America, The New Republic]

None of which means that we can just sit back and enjoy the recession. History may suggest that financial crises actually help capitalist great powers maintain their leads--but it has other, less reassuring messages as well. If financial crises have been a normal part of life during the 300-year rise of the liberal capitalist system under the Anglophone powers, so has war. The wars of the League of Augsburg and the Spanish Succession; the Seven Years War; the American Revolution; the Napoleonic Wars; the two World Wars; the cold war: The list of wars is almost as long as the list of financial crises. **Bad economic times** can **breed wars**. Europe was a pretty peaceful place in 1928, but the Depression poisoned German public opinion and helped bring Adolf Hitler to power. If the current crisis turns into a depression, what rough beasts might start slouching toward Moscow, Karachi, Beijing, or New Delhi to be born? The United States may not, yet, decline, but, if we can't get the world economy back on track, we may still have to fight.

## ---- A2: “But Extinction!”

### Innovations solve, benefits outweigh the costs – scientific consensus and statistics prove

Jones 11 (Charles I., Professor of Economics at the Stanford Graduate School of Business and a Research Associate of the National Bureau of Economic Research. Professor Jones has been honored as a National Fellow of the Hoover Institution, a John M. Olin Foundation Faculty Fellow, and an Alfred P. Sloan Foundation Research Fellow. His research has been supported by a series of grants from the National Science Foundation. “LIFE AND GROWTH” – NBER Working Paper 17094. <http://www.nber.org/papers/w17094>) MFR

This project builds on a diverse collection of papers. Murphy and Topel (2003), Nordhaus (2003), and Becker, Philipson and Soares (2005) emphasize a range of economic consequences of the high value attached to life. Murphy and Topel (2006) extend this work to show that the economic value of future innovations that reduce mortality **is enormous**. Weisbrod (1991) early on emphasized that the nature of health spending surely influences the direction and rate of technical change. Hall and Jones (2007)—building on Grossman (1972) and Ehrlich and Chuma (1990)— is a direct precursor to the present paper, in ways that will be discussed in detail below. Other related papers take these ideas in different directions. Acemoglu and Johnson (2007) estimate the causal impact of changes in life expectancy on income. Malani and Philipson (2011) provide a careful analysis of the differences between medical research and research in other sectors.

### Constant focus on existential risk forces a destruction of exponential growth – innovation solves the risk of extinction significantly which flips your framework

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The simple model in the previous section is elegant and delivers clean results for the interaction between safety and growth. However, the way in which faster growth raisesbmortality is mechanical, and it is simply assumed that the economy can pick whatever growth rate it desires. In this section, we address these concerns by adding safety considerations to a standard growth model based on the discovery of newideas. The result deepens our understanding of the interactions between safety and growth. For example, in this richer model, concerns for safety can slow the rate of exponential growth from 4% to 1%, for example, but will never lead to a steady-state level of consumption. While supporting the basic spirit of the simple model, then, the richer model illustrates some important ways in which the simple model may be misleading. Themodel belowcan be viewed as combining the “direction of technical change” work by Acemoglu (2002) with the health-spending model of Hall and Jones (2007). That is, we posit a standard idea-based growth model where there are two types of ideas instead of one: ideas that enhance consumption and ideas that save lives. The key allocative decisions in the economy are (i) how many scientists to put into the consumption versus life-saving sectors, and (ii) howmanyworkers to put into using these ideas tomanufacture goods. A looser interpretation of the model goes like this. New technologies have consumption properties and life-related properties. Researchers must decide how much effort to put into each dimension. For instance, a new automobile engine can be made to be more powerful or to pollute less. Or researchers can spend their time making a new insulating material either safer or easier to manufacture.

## Biotechnology—1NC

### The precautionary principle is an invocation of absurdity – kills the biotech industry

van den Belt 3 (Henk, Assistant Professor of Applied Philosophy at the University of Wageningen “Debating the Precautionary Principle: "Guilty until Proven Innocent" or "Innocent until Proven Guilty"?” Plant Physiology 132:1122-1126 (2003) http://www.plantphysiol.org/content/132/3/1122) MFR

The PP is an outgrowth of increased environmentalist awareness since the 1970s. The conviction took hold that humanity finds itself in a historically unprecedented situation in which our technological capacity and the potential scale of our actions far exceed our predictive knowledge. According to the German philosopher Hans Jonas, this discrepancy between the ability to foresee and the power to act itself assumes ethical importance and asks for humility and responsible restraint on our part. Jonas maintains that it is possible to extract from this situation of profound scientific uncertainty a rule or principle of decision making that is itself not uncertain at all, namely the rule "to give in matters of a certain magnitude—those with apocalyptic potential—greater weight to the prognosis of doom than to that of bliss" (Jonas, 1984). The supreme moral imperative in the new age, Jonas holds, is that humankind may not put its own existence and survival at stake in the wager of technological progress. If we want to find a philosophical basis for the PP, we must look for it in Jonas' book on the imperative of responsibility (although he himself did not use the expression PP). Environmentalists often hold that modern biotechnology has "apocalyptic potential" because it tampers with the basic processes of life. If we release GMOs into the environment, the ultimate consequences for the natural flora and fauna are extremely hard to predict but may well be irreversible. However, many environmentalists, just like Jonas, believe that we possess a decision rule or principle for dealing with fundamental scientific uncertainty that is itself not the least uncertain. That rule is the PP. Thus, in almost any debate, it seems that the PP can be brought in as a trump card to override all other considerations and arguments. But what exactly is the PP? Proponents of the PP assert that the principle is already "enshrined" in such international agreements as the Convention on Biological Diversity and the Cartagena Protocol on Biosafety, but existing definitions of it are at best partial and incomplete. In the context of dealing with environmental hazards, the Rio Declaration of 1992 presented the following formulation of what a precautionary approach entails: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." A well-known definition of the PP was spelled out in a January 1998 meeting at Wingspread in Racine, Wisconsin. The Wingspread Statement summarized the principle thus: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically" (Raffensberger and Tickner, 1999). Definitions such as these beg many questions. Is there ever full scientific certainty? Do we need a minimal threshold of scientific certainty or plausibility before we may (or should) undertake preventative action? And do we really know how to prevent harm if we are so much ignorant about the underlying cause-effect relationships? The definitions that are currently on offer fail to spell out the precise conditions that have to be fulfilled before the PP may be invoked or the nature of the preventative action that has to be taken. The types of action suggested range from implementing a ban, imposing a moratorium while further research is conducted, allowing the potentially harmful activity to proceed while closely monitoring its effects, to just conducting more research. **The PP does not have a very precise meaning as long as such crucial aspects are left largely unanswered.** In practice, however, the PP is often given a more definite meaning by **reducing it to an absurdity**. Normally, no minimal threshold of plausibility is specified as a "triggering" condition, so that even the slightest indication that a particular product or activity might possibly produce some harm to human health or the environment will suffice to invoke the principle. And just as often no other preventative action is contemplated than an outright ban on the incriminated product or activity. The intervention of Greenpeace in the monarch butterfly case seems to fit this pattern. Closely linked to various versions of the PP is the idea of reversing the onus of proof. Thus, the adherents of the Wingspread Statement declare that "the applicant or proponent of an activity or process or chemical needs to demonstrate that the environment and public health will be safe. The proof must shift to the party or entity that will benefit from the activity and that is most likely to have the information" (Raffensberger and Tickner, 1999). Greenpeace also holds that effective implementation of the PP requires a shift in the burden of proof (Greenpeace, 2001). Shifting the burden of proof seems a fairly straightforward way to ensure, as Jonas demanded, that greater weight will be given to the "prognosis of doom" than to the "prognosis of bliss."

## Biotechnology—2NC/1NR

### Van den Belt says the precautionary principle is an absurdity that stifles innovation in the biotech industry – greater weight is given to the prognosis of doom than the prognosis of bliss justifying regulations that undermine competition and scientific growth even if the risks are not certain or rooted in objective scientific calculation

### The precautionary principle puts a burden of proof on innovative processes that are near impossible to resolve – stifles the biotech industry and scientific progress

van den Belt 3 (Henk, Assistant Professor of Applied Philosophy at the University of Wageningen “Debating the Precautionary Principle: "Guilty until Proven Innocent" or "Innocent until Proven Guilty"?” Plant Physiology 132:1122-1126 (2003) http://www.plantphysiol.org/content/132/3/1122) MFR

Therefore, the strong version of the PP is untenable. But what about the proposed shifting of the onus of proof toward those who advocate a new technology or activity? Reversing the burden of proof would amount to substituting the maxim "guilty until proven innocent" for the age-old legal principle "innocent until proven guilty." Biotech enthusiasts and antiregulationists resent this departure from what they consider time-honored legal sanity (Miller and Conko, 2000). They are prone to counter the frequent invocation of the PP with an equally insistent demand of "sound science." The same opposition is also at the center of the present World Trade Organization trade disputes between the United States and the European Union and their disagreement on the regulation of GM crops. One side claims the moral high ground, whereas the other side attempts to seize the scientific high ground. The situation is highly polarized because various economic and political interests are at stake (Fig. 1). The critics of the PP assert that the burden that environmentalists and regulators want to impose on the proponents of new technologies tends to be unbearable (Miller and Conko, 2000). In the name of absolute safety, the latter are asked nothing less than to demonstrate conclusively that the new technologies they advocate offer no possible harm. This is a formidable, perhaps even logically impossible, task. You cannot prove a negative (compare with Wildavsky, 1995). Moreover, a risk-free world is not a real option. Thus, a consistent application of the PP would in the final analysis **stifle all innovation**. A closer analysis of what is involved in applying the classical principle "innocent until proven guilty," however, reveals that the situation need not be as black and white as it seems at first sight. Take the paradigm case of criminal justice. There are two main ways in which a miscarriage of justice can come about. Either the suspect did not commit the crime, but the verdict found him guilty; or the suspect did commit the crime, but the verdict found him not guilty. In a civilized system of justice, the risks of the first type of error are minimized as far as possible. That is what is meant by the phrase "innocent until proven guilty." The system contains safeguards and precautions in the form of high standards of proof so as to ensure that a suspect will be condemned for a certain criminal offense only if it has been established "beyond reasonable doubt" that he in fact committed the alleged offense. Alas, there is a price to be paid for this cautious and civilized approach, namely the possibly large number of wrongdoers who have to be acquitted due to "lack of sufficient proof." To a certain extent, the risks of the two types of error are inversely related. We may try to reduce the risk of condemning an innocent person by demanding ever more exacting standards of proof but only at the expense of increasing the risk of acquitting culpable offenders. Therefore, we must recognize that there is an inevitable trade-off involved in the design of our system of criminal justice. We may attempt to set our standards as high as we can, but somewhere a balance must be struck, lest the system will become unworkable by making it too difficult to pass sentence on the majority of wrongful offenders. (In statistical testing, there is a similar trade-off to be made between the chances of committing a type I or a type II error, i.e. rejecting the null hypothesis of "no effect" when it is in fact true or failing to reject the null hypothesis when in fact it is false. By selecting a significance level, we implicitly strike a particular balance. Ideally, this balance should depend on our estimation of the costs—economic and other—associated with either of the two types of error.) The above analysis shows that the matter at issue is not just where to place "the" burden of proof. As soon as we allow for more or less exacting standards of proof, an extra dimension of variation immediately becomes visible. In other words, the burden we want to put on the shoulders of one or the other party becomes more or less heavy depending on whether we set our standards of proof more or less highly. This consideration may help us to escape from the unduly polarized opposition of PP versus sound science. In most countries, companies aiming to commercialize GM crops have to submit their products to scrutiny for health effects and environmental impacts. This scrutiny can be more or less searching. The ideal of those who swear by "sound science" is a fully quantified risk assessment. However, it is only possible to meet this objective in more limited contexts, where direct and short-term hazards such as toxicity or pathogenicity are at issue. Even then the expression "sound science" is disingenuous because it obscures the extra-scientific value judgments that necessarily enter into the whole exercise (e.g. identification of hazard types, baselines of acceptability, and trade-offs between type I and type II errors). In other contexts, where indirect, cumulative, or more subtle ecological effects are at issue, the format of the fully quantified risk assessment is unattainable. Adherents of "sound science" will be tempted to down-play such less straightforward hazards as purely hypothetical, conjectural, or theoretical risks that can safely be ignored. However, as the proponents of the PP are never tired in pointing out, lack of evidence of harm is not evidence of lack of harm. If we are really concerned about such hazards, we can put in additional investigative effort to learn more about their plausibility or likelihood. It would be absurd to halt our inquiries with an appeal to "sound science."

### The precautionary principle fails when utilized under a weak framework, and when utilized under a strong framework, it stifles innovation and technological progress

Cranor 3 (Carl F., Professor of Philosophy Faculty Member of the Environmental Toxicology Graduate Program “How Should Society Approach the Real and Potential Risks Posed by New Technologies?” Plant Physiology 133:3-9 (2003) <http://www.plantphysiol.org/content/133/1/3.full>) MFR

Because the precautionary principle has been vaguely formulated, it has been possible for some of its proponents to employ it as a component of an argument for the conclusion that we should ban or restrict research into certain areas of technological development, in virtue of the possibility of a catastrophic scenario being realised. Once we gain a better understanding of the precautionary principle, we can see that these particular arguments are unsustainable. Versions of the precautionary principle that may appear strong enough to support such responses actually lead to contradictory policy recommendations. Versions of the precautionary principle that do not lead to such contradictory policy recommendations are not strong enough to support such extreme policy recommendations.

### The precautionary principle stifles innovation and growth – undermines the biotech industry

van den Belt 3 (Henk, Assistant Professor of Applied Philosophy at the University of Wageningen “Debating the Precautionary Principle: "Guilty until Proven Innocent" or "Innocent until Proven Guilty"?” Plant Physiology 132:1122-1126 (2003) http://www.plantphysiol.org/content/132/3/1122) MFR

On May 20, 1999, Nature published a brief report on an experiment performed by researchers at Cornell University that indicated that pollen from genetically modified (GM) Bt corn (Zea mays) could kill the larvae of monarch butterflies (Danaus plexippus). In laboratory tests, caterpillars fed milkweed (Asclepias curassavica) leaves dusted with pollen from a Bt corn hybrid showed retarded growth and increased mortality. "These results," the authors stated, "have potentially profound implications for the conservation of monarch butterflies" (Losey et al., 1999). In a press release announcing the publication in Nature, the principal investigator on the Cornell study, John Losey, had expressed due caution: "Pollen from Bt-corn could represent a serious risk to populations of monarchs and other butterflies, but we can't predict how serious the risk is until we have a lot more data. And we can't forget that Bt-corn and other transgenic crops have a huge potential for reducing pesticide use and increasing yields. This study is just the first step, we need to do more research and then objectively weigh the risks versus the benefits of this new technology" (Cornell News, 1999). Such caution was wasted on Greenpeace International. The day the findings of the Cornell study were published it already demanded that authorities in the United States, Argentina, Canada, and the European Union take immediate action and prohibit the growing of genetically engineered maize crops. The environmentalist nongovernmental organization (NGO) reiterated its earlier call for a ban on all releases of genetically modified organisms (GMOs). Less than a month later, in a media-oriented action, members of Greenpeace dressed up as butterflies confronted a meeting of European Union environment ministers held in Luxembourg, carrying banners demanding "Give butterflies a chance." In Europe, their campaign apparently found resonance among the authorities: The European Commission decided to freeze the approval process for new Bt maize varieties. The Cornell study did not show that monarch butterfly populations in the wild were actually endangered by Bt corn. However, when Monsanto and Novartis, the companies that sold Bt corn at that time, correctly pointed out that the detrimental effects had so far only been shown in the laboratory, Greenpeace branded them as irresponsible. A spokesperson declared: "Such reactions are the precise opposite to precaution and follow the same pattern of denial these companies have employed for decades, when health and environmental effects of their chemical pesticides were exposed. However, in the case of these GMOs we are talking about living toxins that can reproduce in nature and transmit their dangerous traits to wild species. We cannot consider GMOs harmless until harmful effects are fully proven (sic)" (Greenpeace, 1999a). (The last sentence is obviously a—Freudian?—slip of the tongue and should be read: "We cannot consider GMOs harmless until the absence of harmful effects is fully proven.") For Greenpeace, not just monarchs were supposed to be endangered. The NGO drew up a list of over 100 species of butterflies that it believed could be harmed by GM maize. It accused biotech companies and regulatory authorities of fully ignoring these risks (Greenpeace, 1999b). More recent field research performed in the American Midwest, however, seems to indicate that monarch butterfly populations are hardly affected, if at all, by the large-scale cultivation of Bt maize in this region (Ortman et al., 2001). The monarch butterfly case is only one among many occasions in which the so-called Precautionary Principle (PP) has been invoked to advocate preventative action to forestall possible harm even before the likelihood or the possible extent of the latter has been scientifically well established. This principle is highly contested. With many other environmentalist NGOs, Greenpeace champions its adoption as a central principle of international law against tenacious opposition from the United States, Canada, and Australia (Greenpeace, 2002). The principle is also at issue in recent World Trade Organization trade disputes between the United States and the European Union. But why does the PP play such a central role?

## ---- A2: “Biotech Regulations Good”

### Regulations fail – they result in regulatory paralysis that encourages legal battles that overcome regulations and incentivize faulty data to circumvent stringency

Cranor 3 (Carl F., Professor of Philosophy Faculty Member of the Environmental Toxicology Graduate Program “How Should Society Approach the Real and Potential Risks Posed by New Technologies?” Plant Physiology 133:3-9 (2003) <http://www.plantphysiol.org/content/133/1/3.full>) MFR

Scientific procedures and burdens of proof reinforce regulatory burdens of proof. Substances are assumed to have no properties whatever until established by data and theories. Scientific standards of proof and burdens of proof can be interpreted so stringently that it becomes very difficult to satisfy them. Moreover, some scientists assume that substances have no adverse effects until proven otherwise by overwhelming evidence. Even if standards of proof are not so stringently interpreted, conducting the tests, interpreting them, and coming to sufficiently firm conclusions to satisfy scientific advisory panels, regulatory bodies, and appellate courts (that review the regulatory actions) are costly and time consuming (Cranor, 1993). All this analysis **can easily result in "regulatory paralysis,"** which further encourages firms not to test, to fight the regulations legally, and even to conduct misleading studies likely to yield contrary results (Markowitz and Rosner, 2002). Substantial ignorance about the toxicity properties of substances is of course the expected result of postmarket regulatory schemes. This problem has now reached such proportions in Europe that the European Union has moved to require testing of 30,000 substances in commerce and to severely restrict 1,500 of the most hazardous substances (Loewenberg, 2003). Premarket statutes would address this issue better, but even here there are problems. Premarket screening statutes that require substantial testing ensure that there is no or very little health and environmental exposure to substances until an agency is satisfied that there is no legally specified level of risk from them and permits them into production and commerce. With sufficient agency review and approval authority, there is an independent body to assess the quality of health and environmental data and to help assure that the substance does not enter commerce if it presents unreasonable risks to health or the environment. However, premarket screening laws, such as U.S. statutes for the approval for new drugs, do not always function well. Sometimes firms deliberately or negligently withhold information from the Food and Drug Administration (but at least this opens them to liability). In 1984, there were no toxicity data for one-fourth to one-third of all drugs and pesticides (both subject to premarket laws; NRC, 1984). A more serious structural problem, however, is that even double-blind small clinical trials are inadequate to identify all adverse effects from longer term exposures in large biologically heterogeneous populations. Somewhat more than 50% of the drugs approved in the decade from 1976 to 1985 "had serious post-approval risks that went undetected" in the premarket testing period but were discovered when more diverse and larger populations were exposed (Green, 2000). Thus, there is a need for substantial postmarket follow up by the firm to monitor and report adverse effects from widespread exposure.

## Biotech Good – Biodiversity

### Disruption of the Biotech industry as a result of a focus on the precautionary principle destroys critical agricultural processes that can feed the world – solves food shortages and biodiversity

van den Belt 3 (Henk, Assistant Professor of Applied Philosophy at the University of Wageningen “Debating the Precautionary Principle: "Guilty until Proven Innocent" or "Innocent until Proven Guilty"?” Plant Physiology 132:1122-1126 (2003) http://www.plantphysiol.org/content/132/3/1122) MFR

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A recent European directive on the deliberate release of GMOs into the environment lays down that any company that wants to introduce or commercialize a transgenic crop should carry out a "full" environmental risk assessment taking into account "direct, indirect, immediate and delayed effects" (EC, 2001). This new regulation of GM crops goes much further than current US registration requirements, although some American biologists also argue for a more comprehensive approach (Obrycki et al., 2001). The new European Directive surely places a heavy burden of proof on biotech companies intending to introduce GMOs. Whether or not they are able to take that burden on their shoulders will partly depend on the definition of a standard protocol or methodology for conducting environmental risk assessments. The danger to be avoided is that the obligations imposed on these companies will become "open-ended," putting them entirely at the mercy of regulatory agencies and NGOs asking for ever-escalating assurances of environmental safety. This suspicion will be enhanced by the fact that the drafting of the Directive has avowedly been informed by the PP and that regulatory authorities may give consent to the introduction of GMOs only after they have been satisfied that the release will be safe for human health and the environment. The fairly comprehensive scope of the required environmental risk assessment need not be offensive in itself, if rules of fair play for the regulation of GM crops can be developed. More clarity is also needed about the societal values that have to be taken into account in evaluating risks. The outcome of the assessment is clearly contingent, for instance, on whether or not chemical-intensive methods in agriculture are taken as a normative baseline or whether or not a strong commitment to organic agriculture as a viable option is maintained (Levidow, 2001). The pros and cons of a Bt maize hybrid or any other transgenic crop might be quite different in Europe than in the United States. Europeans are usually strongly attached to farmland because their countries lack vast tracts of national parks and other "wilderness" areas. Willy de Greef, head of regulatory affairs at Syngenta Seeds, holds that the debate in Europe on GM foods is not fundamentally about safety, but is in fact a proxy for a larger debate on how farming should be done (Hileman, 2001). GM crops have become a symbol for all that Europeans don't like in modern agriculture. Although a passion for organic farming and a rejection of agricultural biotechnology perhaps may be tolerated as a European indulgence, the prospect hardly makes sense on a global scale. Yet, this is precisely what Greenpeace International offers us as a worldwide "solution." I think the NGO owes us a deadly serious answer to the difficult question of how to **feed a growing world population and sustain natural biodiversity** without using the tools of modern biotechnology (compare with Trewavas, 1999). We can even press the environmentalist organization by invoking the PP! Thus, it appears that the polarized debate on the PP is just a proxy for a larger debate on the future of world agriculture.

## Biotech Good – Disease

### Biotechnology solves disease and food shortages

Cranor 3 (Carl F., Professor of Philosophy Faculty Member of the Environmental Toxicology Graduate Program “How Should Society Approach the Real and Potential Risks Posed by New Technologies?” Plant Physiology 133:3-9 (2003) <http://www.plantphysiol.org/content/133/1/3.full>) MFR

As the 21st century opens, two new technologies raise the promise of benefits for humankind—biotechnology and nanotechnology. Crop biotechnology promises new and improved foods, e.g. vitamin A-enhanced rice (Oryza sativa), more food at lower cost from highly productive plants, plants that will grow under adverse—highly saline or drought—conditions, plants that will reduce reliance on potentially poisonous pesticides, or even plants that will produce pharmaceuticals. Human biotechnology promises cures for genetic diseases in somatic cells, diagnoses of diseases before they manifest themselves into deadly or irreversible conditions, e.g. breast cancer, perhaps even the prevention of inheritable genetic conditions that could be corrected by genetic engineering of the germ cells. Biotechnology is well begun; nanotechnology has yet to penetrate public awareness or even university awareness beyond the major research universities. Nanotechnology, the science of the almost vanishingly small, is concerned with chemical products one-billionth of a meter in diameter. Yet, it, too, promises treatments for disease, innovative products to clean water supplies and protect the environment, and ultrasmall electronic switching mechanisms and components.

## Biotech Good – Agriculture

### Biotechnology solves food shortages – drought tolerate and degraded soil plants

Cranor 3 (Carl F., Professor of Philosophy Faculty Member of the Environmental Toxicology Graduate Program “How Should Society Approach the Real and Potential Risks Posed by New Technologies?” Plant Physiology 133:3-9 (2003) <http://www.plantphysiol.org/content/133/1/3.full>) MFR

In the context into which new technologies will be introduced, what effect is it reasonable to suppose that technology will have on it? Might it ameliorate, exacerbate, or have more neutral effects on existing problems? Transgenic plants might successfully address some of the food shortages and shortage of adequate agricultural land in the future (e.g. transgenic plants might be created that would grow on degraded soils) and even the shortage of water (with the development of drought tolerate plants), although not the underlying problem of a population that may be too large for the world's resources.

## Nanotechnology—1NC

### The precautionary principle disrupts new innovations regarding nanotechnology

Clarke 6 (Steve, Centre for Applied Philosophy and Public Ethics, Canberra Division, Charles Sturt University and the Australian National University. Visiting Researcher “Future technologies, dystopic futures and the precautionary principle” Ethics and Information Technology (2005) 7:121–12. http://www.springerlink.com/content/1647305164l10337/fulltext.pdf) MFR

It seems that under the ﬁrst two versions of the precautionary principle that we have considered, the precautionary principle could be used to mount a straightforward argument for a moratorium, or at least for the placement of severe restrictions, on nanotechnology research, in light of the grey goo problem. However, on the third version, it would seem to be very hard to justify a moratorium, or such restrictions. Once the possible beneﬁts of research and the low probability of the grey goo problem occurring are taken into account, the inﬂuence of this low probability catastrophic scenario on policy is correspondingly lessened

### Nanotech solves and turns everything – key to technological innovation, solving warming, food shortages, water shortages, agriculture, disease, poverty, democracy, and the economy

Center For Responsible Nanotechnology No Date Cited (“Benefits of Molecular Manufacturing” <http://www.crnano.org/benefits.htm>) MFR

Overview: Molecular manufacturing (MM) can solve many of the world's current problems. For example, water shortage is a serious and growing problem. Most water is used for industry and agriculture; both of these requirements would be greatly reduced by products made by molecular manufacturing. Infectious disease is a continuing scourge in many parts of the world. Simple products like pipes, filters, and mosquito nets can greatly reduce this problem. Information and communication are valuable, but lacking in many places. Computers and display devices would become stunningly cheap. Electrical power is still not available in many areas. The efficient, cheap building of light, strong structures, electrical equipment, and power storage devices would allow the use of solar thermal power as a primary and abundant energy source. Environmental degradation is a serious problem worldwide. High-tech products can allow people to live with much less environmental impact. Many areas of the world cannot rapidly bootstrap a 20th century manufacturing infrastructure. Molecular manufacturing technology can be self-contained and clean; a single packing crate or suitcase could contain all equipment required for a village-scale industrial revolution. Finally, MM will provide cheap and advanced equipment for medical research and health care, making improved medicine widely available. Much social unrest can be traced directly to material poverty, ill health, and ignorance. MM can contribute to great reductions in all of these problems, and in the associated human suffering. Technology is not a panacea. However, it can be extremely useful in solving many kinds of problems. Improved housing and plumbing will increase health. More efficient agriculture and industry save water, land, materials, and labor, and reduce pollution. Access to information, education, and communication provides many opportunities for self improvement, economic efficiency, and participatory government. Cheap, reliable power is vital for the use of other technologies and provides many conveniences. Today, technology relies on distributed manufacturing, which requires many specialized materials and machines and highly trained labor. It is a difficult and slow process to develop an adequate technology base in an impoverished area. However, molecular manufacturing does not require skilled labor or a large supporting infrastructure; a single personal nanofactory (PN) with a single chemical supply and power supply can produce a wide range of useful, reliable products, including copies of itself to double the manufacturing infrastructure in hours, if desired. Thus PNs, and many of their products, are "appropriate technology" for almost any setting. A few basic problems create vast amounts of suffering and tragedy. According to a World Bank document, water is a major concern of the U.N. Almost half the world's population lacks access to basic sanitation, and almost 1.5 billion have no access to clean water. Of the water used in the world, 67% is used for agriculture, and another 19% for industry. Residential use accounts for less than 9%. Much industry can be directly replaced by molecular manufacturing. Agriculture can be moved into greenhouses. Residential water can be treated and recycled. Adoption of these steps could reduce water consumption by at least 50%, and probably 90%. Water-related diseases kill thousands, perhaps tens of thousands, of children each day. This is entirely preventable with basic technology, cheap to manufacture—if the factories are cheap and portable. MNT can provide similar opportunities in many other areas. Much water today is wasted because it is almost but not entirely pure. Simple, reliable mechanical and electrical treatment technologies can recover brackish or tainted water for agricultural or even domestic use. These technologies require only initial manufacturing and a modest power supply. Physical filters with nanometer-scale pores can remove 100% of bacteria, viruses, and even prions. An electrical separation technology that attracts ions to supercapacitor plates can remove salts and heavy metals. The ability to recycle water from any source for any use can save huge amounts of water, and allow the use of presently unusable water resources. It can also eliminate downstream pollution; a completely effective water filter also permits the generation of quite "dirty" waste streams from agricultural and industrial operations. As long as the waste is contained, it can be filtered, concentrated, and perhaps even purified and used profitably. As with anything built by molecular nanotechnology, initial manufacturing costs for a water treatment system would be extremely low. Power will be cheap (see below). Well-structured filter materials and smaller actuators will allow even the smallest filter elements to be self-monitoring and self-cleaning. Self-contained, small, completely automated filter units can be integrated in systems scalable over a wide range. Moving agriculture into greenhouses can recover most of the water used, by dehumidifying the exhaust air and treating and re-using runoff. Additionally, greenhouse agriculture requires less labor and far less land area than open-field agriculture, and provides greater independence from weather conditions including seasonal variations and droughts. Greenhouses, with or without thermal insulation, would be extremely cheap to build with nanotechnology. A large-scale move to greenhouse agriculture would reduce water use, land use, and weather-related food shortages. The main source of power today is the burning of carbon-containing fuels. This is generally inefficient, frequently non-renewable, and dumps carbon dioxide and other waste products (including radioactive substances from coal) into the atmosphere. Solar energy would be feasible in most areas of the globe if manufacturing and land were sufficiently cheap and energy storage were sufficiently effective. Solar electricity generation depends on either photovoltaic conversion, or concentrating direct sunlight. The former works, although with reduced efficiency, on cloudy days; the latter can be accomplished without semiconductors. In either case, not much material is required, and mechanical designs can be made simple and fairly easy to maintain. Sun-tracking designs can benefit from cheap computers and compact actuators. Energy can be stored efficiently for several days in relatively large flywheels built of thin diamond and weighted with water. Smaller energy storage systems can be built with diamond springs, providing a power density similar to chemical fuel storage and much higher than today's batteries. Water electrolysis and recombination provide scalable, storable, transportable energy. However, there is some cost in efficiency and in complexity of technology to deal safely with large-scale hydrogen storage or transportation. Solar solutions can be implemented on an individual, village, or national scale. The energy of direct sunlight is approximately 1 kW per square meter. Dividing that by 10 to account for nighttime, cloudy days, and system inefficiencies, present-day American power demands (about 10 kW per person) would require about 100 square meters of collector surface per person. Multiplying this figure by a population of 325 million (estimated by the US Census Bureau for 2020) yields a requirement for approximately 12,500 square miles of area to be covered with solar collectors. This represents 0.35% of total US land surface area. Much of this could be implemented on rooftops, and conceivably even on road surfaces. A person's living space has a significant effect on their quality of life. The ability to exclude insects will greatly reduce certain diseases. Thermal insulation can increase comfort and often reduce energy consumption. Water and sewage piping and fixtures increase sanitation and decrease disease. House styles are as varied as cultures, and living spaces cannot and should not be standardized worldwide. However, building supplies and home systems (e.g. power, plumbing) require less diversity, and useful components may be built from predesigned plans. In many areas of the world, something as simple as a water filter or a mosquito net can save many lives. Such small, simple products would cost almost nothing to produce. In areas that already use rectilinear apartment construction, including most inner cities, double-layer, vacuum-insulated wall panels can greatly decrease noise transmission between adjacent living spaces as well as providing excellent thermal insulation. Living space reform cannot be approached as a single problem with an easy solution, but the worst problems can easily be addressed piecemeal. Molecular manufacturing can create computer logic gates a few nanometers on a side, and efficient enough to be stacked in 3D. An entire supercomputer can fit into a cubic millimeter, and cost a small fraction of a cent. With actuators smaller than a bacterium, a thin, high-resolution computer display will be easy (and cheap) to build. With GHz mechanical frequencies, a mostly-mechanical device can sense and produce radio waves. Thus computation, communication, and display are all feasible with pure diamondoid technology. Computers, PDAs, and cell phones can be cheap enough for even the poorest people on earth to own one, and contain more than enough processing capability for a voice interface for illiterate people. Distributed networking hardware can likewise be very cheap, and distributed networking software, though not trivial, is already being developed. The whole world could get "wired" within a year. Environmental degradation is a serious problem with many sources and causes. One of the biggest causes is farming. Greenhouses can greatly reduce water use, land use, runoff, and topsoil loss. Mining is another serious problem. When most structure and function can be built out of carbon and hydrogen, there will be far less use for minerals, and mining operations can be mostly shut down. Manufacturing technologies that pollute can also be scaled back. In general, improved technology allows operations that pollute to be more compact and contained, and cheap manufacturing allows improvements to be deployed rapidly at low cost. Storable solar energy will reduce ash, soot, hydrocarbon, NOx, and CO2 emissions, as well as oil spills. In most cases, there will be strong economic incentives to adopt newer, more efficient technologies as rapidly as possible. Even in areas that currently do not have a technological infrastructure, self-contained molecular manufacturing will allow the rapid deployment of environment-friendly technology. Molecular manufacturing will impact the practice of medicine in many ways. Medicine is highly complex, so it will take some time for the full benefits to be achieved, but many benefits will occur almost immediately. The tools of medicine will become cheaper and more powerful. Research and diagnosis will be far more efficient, allowing rapid response to new diseases, including engineered diseases. Small, cheap, numerous sensors, computers, and other implantable devices may allow continuous health monitoring and semi-automated treatment. Several new kinds of treatment will become possible. As the practice of medicine becomes cheaper and less uncertain, it can become available to more people. Much social unrest can be traced directly to material poverty, ill health, and ignorance. Molecular manufacturing can eliminate material poverty—at least by today's standards; post-MM standards may be considerably higher. Products of molecular manufacturing can greatly improve health by eliminating conditions that cause disease, including poor sanitation, insects, and malnutrition. Widespread availability of computers and communication devices can provide exposure to other cultures and diverse points of view, and create an understanding of a broader social context in which to evaluate actions and beliefs. (Unfortunately, mass communication also gives demagogues a wider audience, which may undo some of this benefit.) MM certainly will not cure or prevent social unrest, but it will remove many tangible causes of distress.

## ---- A2: “Grey Goo DA”

### The Grey Goo argument is in a double bind when utilizing the precautionary principle

Cranor 3 (Carl F., Professor of Philosophy Faculty Member of the Environmental Toxicology Graduate Program “How Should Society Approach the Real and Potential Risks Posed by New Technologies?” Plant Physiology 133:3-9 (2003) <http://www.plantphysiol.org/content/133/1/3.full>) MFR

Manson (2002: 270–274) and Sunstein (2002: 102–104) both argue that stronger versions of the precautionary principle entail a paradox and lead to contradictory policy recommendations. To appreciate the paradox, consider again the grey goo problem. It is possible, as Drexler (1986: 172–173) argues, that our eﬀorts to conduct research in nanotechnology will cause the grey goo problem. However, it is also possible that our failure to conduct research in nanotechnology will lead indirectly to the grey goo problem, or some other catastrophic scenario. For example, it seems possible that research in nanotechnology that we did not conduct might have led to us ﬁnding a way to prevent the grey goo problem and it seems possible that on another planet in the universe a civilization ﬂourishes that conducts research into nanotechnology that leads to the creation of self-assemblers that begin to convert everything into themselves. If we fail to conduct research that leads us to ﬁnd a way to prevent the grey goo problem and if the alien civilization in our example does conduct research that leads to the creation of self-assemblers that begin to convert everything into themselves, then our failure to conduct research in nanotechnology will have contributed to causing a catastrophe, because we will be unable to prevent the grey goo problem. So the precautionary principle leads us to conclude both that we should conduct research into nanotechnology and that we should not conduct research into nanotechnology.

### No sufficient evidence for grey goo, and definitely not enough to warrant the precautionary principle

Cranor 3 (Carl F., Professor of Philosophy Faculty Member of the Environmental Toxicology Graduate Program “How Should Society Approach the Real and Potential Risks Posed by New Technologies?” Plant Physiology 133:3-9 (2003) <http://www.plantphysiol.org/content/133/1/3.full>) MFR

The problem with this line of defence is that it is exceedingly unclear how to go about diﬀerentiating between situations where there is less than full scientiﬁc certainty and situations where there is no evidence of a possible hazard. Into which category are we to place the grey goo problem, for example? Is there evidence of its possibility? There are currently no selfassemblers, so one might argue that there is no evidence of its possibility. However, the grey goo problem appears to be a logically coherent scenario and technological advances in nanotechnology make it seem to be a realisable scenario. Indeed, there are attempts to specify solutions to the grey goo problem, surely a good indication of its possibility. The defence of the precautionary principle that Sandin et al. (2002) are trying to run requires that we ﬁnd there is no evidence of catastrophic scenarios such as the grey goo problem. However, they do not do nearly enough to specify what would count as acceptable evidence to be able to rule that such possibilities lack a suitable evidential basis.

## Free Trade—1NC

### The precautionary principle kills trade – creates an incentive to utilize protectionist measures against efficient imports

Goldstein and Carruth 4 (Bernard, PhD in Medicine, occupational health. Russellyn S. “The Precautionary Principle and/or Risk Assessment in World Trade Organization Decisions: A Possible Role for Risk Perception” Risk Analysis Volume 24, Issue 2, pages 491–499, April 2004) MFR

The importance of the precautionary principle in U.S./European relations was highlighted in a recent speech of European Union Environmental Commissioner Margot Wallstrom.(13) She listed the use of the precautionary principle as the first of two areas of recent friction with the United States, the second being climate change. Commissioner Wallstrom stated that there was a U.S. perception that Europe uses the precautionary principle as a way of evading international obligations arising in particular from World Trade Organization (WTO) agreements, which she denied.4 Her speech in essence reacted to what might be called the Cynical American Definition of the precautionary principle: The Precautionary Principle is a nebulous doctrine invented by Europeans as a means to erect a trade barrier against any item produced more efficiently elsewhere. Note that it is not just the United States or other developed countries that are concerned about the European Union's possible use of the precautionary principle as a trade barrier. World Bank economists estimated that there would be almost a two-thirds decrease in the import of cereals and nuts from some of the poorest African countries if a newly proposed aflatoxin standard was adopted by the EU. This standard, more stringent than those of other major importing nations or of the Codex Alimentarius Commission, was justified by invoking the precautionary principle.(15)

### Extinction

Copley News Service 99 (December 1, L/N)

For decades, many children in America and other countries went to bed fearing annihilation by nuclear war. The specter of nuclear winter freezing the life out of planet Earth seemed very real. Activists protesting the World Trade Organization's meeting in Seattle apparently have forgotten that threat. The truth is that nations join together in groups like the WTO not just to further their own prosperity, but also to forestall conflict with other nations. In a way, our planet has traded in the threat of a worldwide nuclear war for the benefit of cooperative global economics. Some Seattle protesters clearly fancy themselves to be in the mold of nuclear disarmament or anti-Vietnam War protesters of decades past. But they're not. They're special-interest activists, whether the cause is environmental, labor or paranoia about global government. Actually, most of the demonstrators in Seattle are very much unlike yesterday's peace activists, such as Beatle John Lennon or philosopher Bertrand Russell, the father of the nuclear disarmament movement, both of whom urged people and nations to work together rather than strive against each other. These and other war protesters would probably approve of 135 WTO nations sitting down peacefully to discuss economic issues that in the past might have been settled by bullets and bombs. As long as nations are trading peacefully, and their economies are built on exports to other countries, they have a major disincentive to wage war. That's why bringing China, a budding superpower, into the WTO is so important. As exports to the United States and the rest of the world feed Chinese prosperity, and that prosperity increases demand for the goods we produce, the threat of hostility diminishes. Many anti-trade protesters in Seattle claim that only multinational corporations benefit from global trade, and that it's the everyday wage earners who get hurt. That's just plain wrong. First of all, it's not the military-industrial complex benefiting. It's U.S. companies that make high-tech goods. And those companies provide a growing number of jobs for Americans. In San Diego, many people have good jobs at Qualcomm, Solar Turbines and other companies for whom overseas markets are essential. In Seattle, many of the 100,000 people who work at Boeing would lose their livelihoods without world trade. Foreign trade today accounts for 30 percent of our gross domestic product. That's a lot of jobs for everyday workers. Growing global prosperity has helped counter the specter of nuclear winter.

## Free Trade—2NC/1NR

### Goldstein and Carruth say that the precautionary principle was utilized by European nations and certain countries within the WTO to justify protectionist measures in the face of “safety concerns” that do not outweigh domestic products – that undermines free trade and means any protectionist action can be justified in the name of weak evidence over health, environmental, and economic effects.

### Precautionary principle puts arbitrary restrictions on external imports even if they’re just as efficient as homegrown products

Goldstein and Carruth 4 (Bernard, PhD in Medicine, occupational health. Russellyn S. “The Precautionary Principle and/or Risk Assessment in World Trade Organization Decisions: A Possible Role for Risk Perception” Risk Analysis Volume 24, Issue 2, pages 491–499, April 2004) MFR

WTO dispute resolution is discussed extensively in other articles in the current volume. For present purposes, we are interested in two WTO Appellate Body decisions that bear on the applicability of the precautionary principle in evaluating internal health-protective laws, which affect international trade.5 The January 1998 decision in the beef hormone case seemed to explicitly reject the precautionary principle as a basis for trade-restrictive sanitary measures.(22) But the more recent decision by the WTO Appellate Body in the asbestos case, although not referring to it by name, appears to give new weight to the precautionary principle as a justification for at least some trade-restrictive measures.(23) By emphasizing the importance of consumer protection in the context of health risk, the Appellate Body seems to be signaling in the asbestos decision that risk perception is an appropriate factor in setting trade barriers, in keeping with the primary precautionary approach. The precautionary principle was considered in depth and seemingly rejected by the WTO Panel and the Appellate Body in an earlier case concerning beef from hormone-treated cattle.(22,24)6 In this case, the United States, joined subsequently by Canada, brought a complaint against the European Communities (EC) for its exclusion of beef and beef products derived from cattle to which certain natural or synthetic hormones had been administered for growth-promotion purposes. The EC took the position that the precautionary principle, which was a basis for their trade ban, was “already … a general customary rule of international law or at least a general principle of law.”(25) The EC further asserted that the precautionary principle applies to risk assessment as well as risk management. This legal argument was disputed by the United States and Canada.7 On this key legal dispute, the WTO Appellate Body held that the precautionary principle is not an established rule or principle of law, and that it is not an acceptable alternative basis for actions that are supposed to be based on scientific risk assessment. Based on that legal holding, and on the factual findings of the WTO Panel, the Appellate Body concluded that the EC ban was **arbitrarily and unjustifiably discriminatory** in violation of the SPS Agreement. A key factual finding that persuaded the Appellate Body was that the carcinogenic risk from banned hormone-treated beef was no greater than the carcinogenic risk from the EC's homegrown antibiotic-treated pork, which was not banned.8 The EC argued that “scientific” factors are not the only relevant factors, perception of risk must also be considered, and that Europeans perceived hormone-treated beef to be a greater health risk than antibiotic-treated pork. But in rejecting the precautionary principle as an adequate basis for discrimination, the Appellate Body implicitly rejected the EC's argument that risk perception can substitute for or overcome objective evidence of risk.

## Nuclear Power—1NC

### The precautionary principle destroys incentives to utilize nuclear power – solves global warming

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

4. Many people fear nuclear power on the grounds that nuclear power plants raise various health and safety issues, including some possibility of catastrophe.85 But if a nation does not rely on nuclear power, it might well rely instead on fossil fuels, and in particular on coal-fired power plants.86 Such plants create risks of their own, includ- ing risks associated with global warming. China, for example, has re- lied on nuclear energy in part as a way of reducing greenhouse gases and in part as a way of reducing other air pollution problems.87

### 100% risk of extinction

Tickell 8 [Oliver, “On a planet 4C hotter, all we can prepare for is extinction]

We need to get prepared for four degrees of global warming, *Bob Watson told the Gurdian last week. At first sight this looks like wise counsel from the climate science adviser to Defra*. But the idea that we could adapt to a 4C rise is absurd and dangerous. Global warming on this scale would be a catastrophe that would mean*, in the immortal words that Chief Seattle probably never spoke, "the end of living and the beginning of survival" for humankind. Or perhaps the beginning of our* extinction. The collapse of the polar ice caps would become inevitable, bringing long-term sea level rises of 70-80 metres. All the world's coastal plains would be lost, complete with ports, cities, transport and industrial infrastructure, and much of the world's most productive farmland. *The world's geography would be transformed much as it was at the end of the last ice age, when sea levels rose by about 120 metres to create the Channel, the North Sea and Cardigan Bay out of dry land.* Weather would become extreme and unpredictable, with more frequent and severe droughts, floods and hurricanes. The Earth's carrying capacity would be hugely reduced. **Billions would undoubtedly die.**

## Sea Power—1NC

### Precautionary principle crushes sea power – focuses on externalities at the expense of preparedness

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

5. There is a possible conflict between the protection of marine mammals and military exercises. The United States Navy, for exam- ple, engages in many such exercises, and it is possible that marine mammals will be threatened as a result. Military activities in the oceans might well cause significant harm, but a decision to suspend those activities, in cases involving potential harm, **might also endanger military preparedness**.8

### U.S. seapower solves all scenarios for nuclear war

Conway et al. 7 [James T., General, U.S. Marine Corps, Gary Roughead, Admiral, U.S. Navy, Thad W. Allen, Admiral, U.S. Coast Guard, “A Cooperative Strategy for 21st Century Seapower,” October, [http://www.navy.mil/maritime/MaritimeStrategy.pdf](http://www.navy.mil/maritime/MaritimeStrategy.pdf" \t "_blank))]

 This strategy reaffirms the use of seapower to influence actions and activities at sea and ashore. The expeditionary character and versatility of maritime forces provide the U.S. the asymmetric advantage of enlarging or contracting its military footprint in areas where access is denied or limited.Permanent or prolonged basing of our military forces overseas often has unintended economic, social or political repercussions. The sea is a vast maneuver space, where the presence of maritime forces can be adjusted as conditions dictate to enable flexible approaches to escalation,  de-escalation and deterrence of conflicts. The speed, flexibility, agility and scalability of maritime forces provide  joint or combined force commanders a range of options for responding to  crises. Additionally, integrated maritime operations, either within formal alliance structures (such as the North Atlantic Treaty Organization) or more informal arrangements (such as the Global Maritime Partnership initiative),send powerful messages to would-be aggressors that we will act with others to ensure collective security and prosperity. United States seapower will be globally postured to secure our homeland and citizens from direct attack and to advance our interests around the world. As our security and prosperity are inextricably linked with those of others, U.S. maritime forces will be deployed to protect and sustain the peaceful global system comprised of interdependent networks of trade, finance, information, law, people and governance. We will employ the global reach, persistent presence, and operational flexibility inherent in U.S. seapower to accomplish six key tasks, or strategic imperatives. Where tensions are high or where we wish to demonstrate to our friends and allies our commitment to security and stability, U.S. maritime forces will be characterized by regionally concentrated, forward-deployed task forces with the combat power to limit regional conflict, deter major power war, and should deterrence fail, win our Nation’s wars as part of a joint or combined campaign. In addition, persistent, mission-tailored maritime forces will be globally distributed in order to contribute to homeland defense-in-depth, foster and sustain cooperative relationships with an expanding set of international partners, and prevent or mitigate disruptions and crises. Credible combat power will be continuously postured in the Western Pacific and the Arabian Gulf/Indian Ocean to protect our vital interests, assure our friends and allies of our continuing commitment to regional security, and deter and dissuade potential adversaries and peer competitors. This combat power can be selectively and rapidly repositioned to meet contingencies that may arise elsewhere. These forces will be sized and postured to fulfill the following strategic imperatives: Limit regional conflict with forward deployed, decisive maritime power. Today regional conflict has ramifications far beyond the area of conflict. Humanitarian crises, violence spreading across borders, pandemics, and the interruption of vital resources are all possible when regional crises erupt. While this strategy advocates a wide dispersal of networked maritime forces, we cannot be everywhere, and we cannot act to mitigate all regional conflict. Where conflict threatens the global system and our national interests, maritime forces will be ready to respond alongside other elements of national and multi-national power, to give political leaders a range of options for deterrence, escalation and de-escalation.  Maritime forces that are persistently present and combat-ready provide the Nation’s primary forcible entry option in an era of declining access, even as they provide the means for this Nation to respond quickly to other crises. Whether over the horizon or powerfully arrayed in plain sight, maritime forces can deter the ambitions of regional aggressors, assure friends and allies, gain and maintain access, and protect our citizens while working to sustain the global order. Critical to this notion is the maintenance of a powerful fleet—ships, aircraft, Marine forces, and shore-based fleet activities—capable of selectively controlling the seas, projecting power ashore, and protecting friendly forces and civilian populations from attack.

## Pharmaceutical Industry—1NC

### The precautionary principle results in imposition of strict regulations to Pharma – disrupts their industry

Sunstein 3 (CASS R., Distinguished Service Professor of Jurisprudence, Law School and Department of Political Science, University of Chicago. “BEYOND THE PRECAUTIONARY PRINCIPLE” University of Pennsylvania Law Review – Vol. 151, No. 3, Jan., 2003, Jstor) MFR

In these cases, what kind of guidance is provided by the precautionary principle? It is tempting to say, as is in fact standard, that the principle calls for strong controls on arsenic, on genetic engineering of food, on greenhouse gases, on threats to marine mammals, and on nuclear power.89 In all of these cases, there is a possibility of serious harms, and no authoritative scientific evidence suggests that the pos- sibility is close to zero. If the burden of proof is on the proponent of the activity or process in question, the precautionary principle would seem to impose a burden of proof that **cannot be met.** Put to one side the question of whether the precautionary principle, understood to compel stringent regulation in these cases, is sensible. Let us ask a more fundamental question: Is that more stringent regulation there- fore compelled by the precautionary principle? The answer is that it is not. In some of these cases, it should be easy to see that, in its own way, stringent regulation would actually run afoul of the precautionary principle. The simplest reason is that such regulation might well deprive society of significant benefits, and for that reason produce a large number of deaths that otherwise would not occur. In some cases, regulation eliminates the "opportunity benefits" of a process or activity, and thus causes preventable deaths.90 If this is so, regulation is hardly precautionary. The most familiar cases involve the "drug lag," produced by a highly precautionary ap- proach to the introduction of new medicines and drugs into the mar- ket.91 If a government takes such an approach, it might protect peo- ple against harms from inadequately tested drugs; but it will also prevent people from receiving potential benefits from those very drugs.2 Is it "precautionary" to require extensive premarketing test- ing, or to do the opposite?

## Pharmaceutical Industry—2NC/1NR

### Big pharma is key to the economy – jobs and internal revenue

Christ 10 (Scott, staffwriter for eHow “The Benefits of the Pharmaceutical Industry” <http://www.ehow.com/list_6710523_benefits-pharmaceutical-industry.html>) MFR

Pharmaceutical companies employed nearly 300,000 people in the United States in 2008, according to the Bureau of Labor Statistics, and nearly 87 percent of the companies in the pharmaceutical industry employed more than 100 workers in 2008. The tax benefits to the United States are substantial as well. Pfizer alone posted $44 billion worth of revenue in 2008, according to Contract Pharma. The economic climate impacts the pharmaceutical industry, but profitable companies result in more taxable revenue for the U.S. People may criticize this amount of profit from one company, but consider this: The underlying goal of every single business is to make money. People single out pharmaceutical companies for making profits, but it's important to remember that they also create products that save millions of lives.