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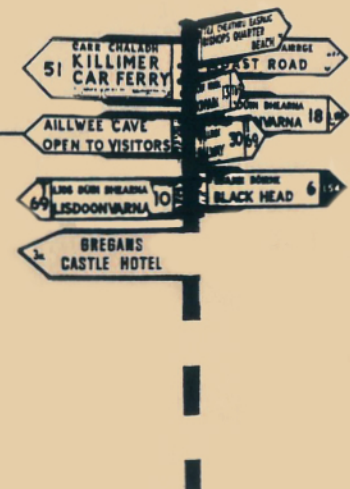


University of California  
Institute of Global Conflict  
and Cooperation

## Decoding Nuclear Winter; Has War Lost Its Name?

by

*Perti Joenniemi*



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Working Paper No. 11

*Series edited by James M. Skelly*

First Annual Conference on  
Discourse, Peace, Security and  
International Society

Ballyvaughn, Ireland

August 9-16, 1987



**Decoding Nuclear Winter;  
Has War Lost Its Name?**

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The conference held at Ballyvaughn, Ireland, in August 1987 was the beginning of an on-going international intellectual interchange on topics related to the discourse of peace and security and international society. It will include annual meetings, the second to be held in summer 1988, again in Ballyvaughn. Sponsored by the University of California Institute on Global Conflict and Cooperation, the conferences are intended to foster general inquiry into these scholarly topics and to stimulate research and teaching that incorporates these perspectives at University of California campuses. This year's series of working papers comprises the writings which seventeen authors submitted to their colleague-participants in preparation for the 1987 conference. Some have been updated somewhat before publication here. Some have been published elsewhere and are reissued here by permission. The Institute on Global Conflict and Cooperation hopes that these working papers will help to interest even more scholars in pursuing these lines of thought.

James M. Skelly  
Series Editor

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*The Institute on Global Conflict and Cooperation is an interdisciplinary Multicampus Research Unit of the University of California, established by the Regents in June 1983. The mission of the IGCC is to promote research and teaching on international conflict and cooperation, with particular emphasis on threats and avoidance of nuclear war. The IGCC Central Office is located at the University of California, San Diego.*

## Decoding Nuclear Winter; Has War Lost Its Name?

### 1. Change of Perspective

In viewing the effects of nuclear weapons the spotlight has for a long time been on the immediate. Nuclear war has been imagined as something instant, "brighter than a thousand suns," utterly hot and absolutely devastating.

Now the theory of nuclear winter has brought a considerable number of new elements into this picture. The traditional image has been drastically reversed. Instead of the instant effects of blast, heat and radioactivity the "secondary" effects have been brought to the forefront. It has been discovered that the synergisms of these aftereffects would be far more threatening and devastating than the immediate outcome. As a consequence, the discourse on nuclear war has taken a new turn. The image of a sudden flash is now competing with perceptions of something drawn-out, slow, dark and chilly. The unimaginable has given way to far more imaginable consequences such as flooding, massive fires, dust storms and mass starvation. With this change from the initial and the unknown -- indirectly acknowledging that these would not bring about a holocaust -- to the more cumulative and less unreal, it has become easier to grasp the perils of nuclear war.

Primarily the change of focus has taken place with scientists and their approach. For long the strategic community was occupied almost exclusively, so it seems, with the primary effects of nuclear detonations. Environmental effects such as the destruction of the stratospheric ozone layer were seen as a possibility but not taken to be a matter of grave concern compared to the devastating initial impact. This focusing on the immediate was not challenged in the scientific community, and the more familiar features of a detonation, among them fires and the smoke generated, were overlooked. These aspects of nuclear war belonged to the sphere of the ordinary and were therefore not among those aspects that gave nuclear weapons their very special flavour -- so it was then thought.

The change of perspective that has now occurred could plainly result from an accumulation of knowledge. This is, for example, the explanation offered by David Greene and his colleagues in their book endeavoring to serve as a guide to the phenomenon of nuclear winter. They argue that the key new factor was discovered by accident (Greene et al., 1985, p. 1). Two scientists, Paul Crutzen and John Birkes, were asked by the editors of *Ambio*, a journal of the Swedish Academy of Sciences, to investigate the effects of nuclear war. It occurred to them that smoke from the fires ignited by the heat of the nuclear fireball could affect this issue. It then turned out from their initial calculations that there could be enough smoke to blot out almost all sunlight from half of the Earth for weeks.

This argument of an accidental discovery is, however, unsatisfactory in several ways. Why had the "accident" not happened before, during the four decades of the nuclear era, and why precisely at the beginning of the eighties? Perhaps it would be more proper to speak of social and cultural barriers related to nuclear weapons and the use of these weapons, which have been difficult to surmount. Knowledge of the environmental impact of nuclear war has been available for some time. A three volume study on this subject by Professor Robert Ayres appeared as early as 1965. It failed, however, to generate any broader attention. The question why the climatic consequences had not been discovered before has been available for 20 years. But as reported by Anne Ehrlich the question has remained unanswered (Ehrlich 1984, p. 85).

Hence the origin of the nuclear winter theory does not lie exclusively in the accumulation of new scientific knowledge. It springs not so much from penetration into something previously unknown -- for example dust storms on the planet Mars -- as from a preparedness to give knowledge a more dramatic and compelling form. It is not the new knowledge generated but rather the way existing knowledge has been put to use that has made the difference.

For modern science the nuclear winter theory represents an attempt to redefine its relationship to its own key products, to one of its successes. To name, or in this case to rename, is to define and give a role in society. The nuclear winter theory is a form of scientific denouncement and distancing. It implies a recognition, albeit somewhat indirect, that the rationality of the modern natural sciences has produced something that threatens to turn into ultimate irrationality, into mankind's genocide. With this in mind it is understandable that natural scientists have not been pioneers but rather latecomers in imagining and recognizing the possibility of human extinction in connection with nuclear war.

But now the "accident" has occurred and researchers close to the strategic community have put forward the hypothesis of an environmental doomsday, the possibility that we may so impair our habitat, the Earth, that it can no longer sustain human or other forms of life. When the ecological consequences due to the fragility of the ecosystem are taken into account, it turns out that in a nuclear war the aggressor would not only destroy the opponent but with all probability also himself and this even if there was no retaliation. The consequences would be so widespread that third countries would also be affected -- they would not be restricted to the Northern Hemisphere but would spread to the South as well. There would be survivors but not much to survive for.

Although the nuclear winter theory contains new aspects, the basic message has previously been echoed by the scientific community. It is basically a repetition of the "One World or None" thesis articulated for the first time in the late forties, with some temporary impact. The theory could thus be merely part of the latest convulsion in a long cyclical process of oscillation between cultural attention and cultural neglect of the perils embodied in the nuclear arms race. It could be one of those efforts to denounce nuclear weapons that are soon replaced by a return to the

laboratories (Boyer 1985, p. 365). Whatever the outcome, it is of importance to realize that the argumentation connected with the nuclear winter image has a certain prehistory that might be of help in judging its performance, its success and failures.

It seems obvious that there are social developments coinciding with the genesis of the nuclear winter theory. The change of perspective overlaps with widespread public concern for and a heightened consciousness of the dangers of nuclear developments and environmental hazards. It reflects a revival of nuclear awareness. The nuclear winter theory is part of a sense of urgency that developed in the early eighties. No doubt these broader societal developments also caused natural scientists, a group central to nuclear culture, to confront more fully than hitherto the promises of health, prosperity and security embodied in the nuclear era. The ever more frightful and evil prospects of this era have been brought to the forefront. In this sense the emergency of the nuclear winter theory was no accident but part of more general revolt and unlocking of the nuclear memory and evasion of certain social and cultural barriers. A core group has become prepared to confirm the apocalyptic visions that have been part of popular culture for decades and to challenge the enormous prestige embodied in the nuclear arsenals. This is one way of interpreting the genesis of the theory.

But what follows if nuclear winter is seen not merely as a matter of new scientific knowledge but rather as a literal and social product? After all, nuclear weapons are particularly invisible and protected by much secrecy and therefore depend more than any other weapons on images and utopias. Instead of something strictly factual it is proper to approach nuclear war as something that has never occurred, that does not exist, that is doomed to be a non-event, is unheard of and can thus be approached only as a possibility at the level of fantasy, imagination, myth, vision and language. The nuclear winter is above all a cultural product, cultural in its origin and in its consequences. It is an image that operates at the level of structures of meaning. It is a contradiction in terms in the sense that it has to be imagined not to be experienced.

But what sort of textual tradition does it follow, what are the hidden existential messages and how does this new imaginative resource function in societal discussion at large? How is this stereotype of nuclear apocalypse constructed as to its form and contents? This is the line of inquiry that will be pursued here in a more general exploration of the state of the nuclear debate.

## **2. An Anti-Bomb**

The concept of nuclear winter has an inborn tendency to rearrange the discourse on security. It brings forth many such "false" issues that are usually repressed by the nuke-speak in use.

The new theory does not, for example contain connotations that tend to irrationalize and diminish the opponent. Instead it departs from assumptions that do not have any in-built perceptions of an opponent at all. It does not split and divide but brings forth the total and



collective vulnerability that the nuclear monster has caused. Security has to be common security. The theory implies that in a fundamental sense we are our own security as it is seen to depend on our own attitudes, our knowledge and capabilities of problem-solving. Security does not originate from being against somebody but for something. It is survival common to all, not "them or us."

The nuclear winter theory contains a worst-case analysis and it is rich of Manichean pessimism. Deep down it aspires to restoring a tolerable, familiar order of things, including the harmony with nature that has been broken down by technological progress. It aspires for post-nuclear solutions to security, solutions based on the universal oneness that the nuclear evil has created. In this sense the term is an abstraction that goes beyond empirical facts and the concept should therefore also be treated separately from its mere scientific logic. Nuclear winter combines logic with intuition, outer and inner perceptions into a broader consciousness. On the surface it deals with the material real world but penetrates also into the nonmaterial, that is the deep-structures and the existential implications that nuclear weapons have for us as individuals and as civilization. It clearly deviates from the usual power-dominated discourse loaded with concepts such as balance or deterrence and goes in general against the fundamental idea that under present conditions international security rests on establishing a counterthreat (Øberg 1985, p. 56).

Nuclear winter is a societal concept and not a state-oriented one, as the usual emphasis on the state, the nation and "national" security disappears. This tendency has been strengthened by efforts to discuss the nuclear winter theory over the cold war barriers. It has had advocates among natural scientists from both East and West. The image created makes it abundantly clear that instead of national security the nuclear arms race has brought global insecurity.

The perspective introduced brings the security of society and the human race in relation to the environment. The image of a state versus another state or nation versus nation is substituted by a vision of a man versus the environment. Also the categorization into "we" and "they" vanishes and is overruled by an interest in survival common to all, a concept of planetary security. But "we" tends to become a problematic category. The infinite power of nuclear weapons, the power to destroy the world, has certain psychosocial consequences. For the individual it is increasingly difficult to face or conceive one's boundaries and limits. It blurs the concept of self and the interaction of the self with other groups and the world. This infinite power has prompted Rita R. Rogers, a specialist in psychiatry, to ponder what it means for our "we" concept. Does "we" include a world we can destroy? How can we be on the side of both the victimizers and the victims (Rogers 1982, p. 15)? The blurring of the established boundaries may produce confusion and cause lack of identity.

The nuclear winter theory tends to reinterpret many of the issues at stake in the nuclear arms race. Instead of confirming the ends-means rationale that is inbuilt in the concept of war, the theory hints at a conversion of war into genocide, destruction without purpose. "Clearly, society

can never again view the prospects of nuclear war as it did before. Any possibility of meaningful survival has been removed, and no place on Earth is safe from nuclear winter," says Anne Ehrlich, a biologist and author of several articles on the theme of nuclear winter (Ehrlich 1984, p. 13).

The fundamental question posed by the new theory on the consequences of nuclear war has precisely to do with the overall purpose and aims of such war. For the national security elite nuclear arms tend to make sense in terms of superiority, power and security. The gains achieved are seen to outweigh the risks. In the view of critics promoting the nuclear winter theory it is the other way around. For them the nuclear arms race is irrational almost from the outset. They do not stress security and the promises of endless life-power but the risks and the utmost insecurity. The critics argue that nothing of value to anyone alive is likely to survive the catastrophe of nuclear war. "No national rivalry or ideological confrontation justifies putting the human species at risk," says Carl Sagan, a professor of space science and a major advocate of the nuclear winter theory (Sagan 1984, p. 292).

Besides casting doubt upon the overall rationality of nuclear policies, and above all any idea of meaningful survival after nuclear war, the nuclear winter metaphor aims at dispelling a "we didn't know" attitude among the public at large. The effort is to make clear the risks inherent in nuclear weapons and to stress that extensive nuclear preparations must bring mankind to the brink of the abyss. This emphasis, of course, considerably reduces the euphemistic aspects of the nuclear discourse.

The nuclear winter theory has clearly contributed to bringing issues pertaining to nuclear war back onto the public agenda. The images produced have generated a broad debate in the media. It has become increasingly difficult to escape the issues at stake and avoid taking a stand. But awareness is one thing; the ability to translate it into action that decreases the danger of nuclear war is another.

Some essential steps have evidently been taken although the task itself is difficult from the very outset. In explaining some of the more successful aspects of the new image perhaps an analogy could be drawn to the treatment of death in modern hospitals. In such institutions it is not too unusual that dying patients are deprived of full information as to the seriousness of their condition. It is more convenient for the hospital -- and it is also assumed to be in the interest of the patient -- to proceed in this way. The images that come with consciousness of approaching death are so painful and difficult to handle that information is already blocked within the institution and not passed from the staff to the patient. The medical staff have an interest in preserving their position as semi-priests and avoiding emotions that would endanger such a position. As a consequence death tends to come as a surprise to the patient. In being deprived of information the patient is also deprived of the power to influence the very important last moments of life.

The theory of nuclear winter aims at informing. Death is never an easy or pleasant matter to cope with and death in nuclear war is a particularly horrendous thought. But precisely for the quality of death, and quality of life, it should be discussed and reflected upon. With increased discussion and the new images provided there are now reduced chances of dying in nuclear war, should such a war take place, altogether unaware of its potential occurrence and the consequences it would have. We, the public, are thus not only offered information but also an opportunity to master our fate at least in regard to the quality of our death. There is no death so alienating as dying *en masse* in nuclear war. The information offered in the context of nuclear winter, if reflected upon, prevents those informed from being reduced to mere objects of developments. The message encourages to take a stand on issues that after all are not matters of expertise or belong exclusively to the sphere of government. They are purported to be matters of human choice and issues of common interest. As to the values and circumstances connected to death in nuclear war we are as concerned to pass judgement as anybody else. Thus in the case of nuclear winter some of the semi-priests of our modern technoscientific society seek to inform us and make us comprehend. This is done even at the risk of the upheavals and unrest that such information might cause in essential security issues if nuclear weapons, as a consequence, are deprived of their legitimacy and the nuclear arms race thus rolls less easily than before. This would have quite profound societal consequences. The discussion provoked by the high-level meeting in Reykjavik is one indication of this.

But are we really able to comprehend and handle the information that is passed to us? The metaphors associated with nuclear war in the nuclear winter theory are perhaps somewhat more familiar and easy to imagine than many of those used in previous efforts to grasp the unthinkable. However, also an unnatural winter -- a contradiction in terms as the concept invented combines two quite different frame-works -- is difficult to imagine.

Another difficulty is that also in the case of nuclear winter the various emotional defense systems are at work. To think of the perils of nuclear war is so painful and demanding that the emotions associated with it are easily blocked. If there were no outlet the consequence would be that after some initial movement in the discourse the numbing phenomenon that has dominated most of the post-war period would continue. If fear and psychic pressure are increased they should also be provided with a constructive outlet. Fear does not by itself promote peace and nuclear disarmament. It can also mount into hatred, animosity and blind rage once the fear is given a target. Instead of the repentance called for by the nuclear winter thesis the response could be one of increased irrationalism, orgies and debauchery or, again subordination to authority.

But some aspects of the nuclear winter theory might reduce these risks and give cause for more optimistic notions. One essential feature of the theory is that it focuses mainly on the environmental impact. The bomb becomes the Evil and the environment is painted as its main

victim. The societal effects and the consequences for human beings are presented as belonging to the sequelae further down in the chain in the aftermath of nuclear war. This somewhat indirect approach may provide a better outlet for emotions otherwise blocked if the environment is seen to take the first blow. The audience in the nuclear winter theatre offered a messianic role, that of saving the environment and re-establishing harmony. It is well known that indirection is one of the ways of dealing with matters that are terrible but true. Such a mechanism might also be at work in the case of the nuclear winter theory.

### **3. Reducing and Escaping the Problem**

However, before passing further judgement it might be appropriate to penetrate still deeper into the way the nuclear winter theory approaches the issue of death. The images produced are different from those which deal with battle and death in traditional wars, and this difference might be crucial.

The nuclear winter theory makes it painfully clear that the prospects of survival in nuclear war and its aftermath are quite small. Death may be sudden or drawn-out, but altogether there is a considerable probability that it will strike most of mankind. Although indirectly phrased and in rather impersonal terms the basic message is unequivocal.

Nuclear winter is thus something of a counterconcept. It challenges the ordinary way of approaching and treating the dangers inherent in the nuclear arms race. It is known that among the Jews in concentration camps the crematoria might be called "bakeries" and killing by lethal gases could be referred to as taking a refreshing "shower." Relevant information was denied and expelled from the consciousness to circumvent mortality and the finality of death. This is nothing unique or particular to the conditions that prevailed in the concentration camps. The same defenses are at work in the nuclear era. In present-day culture and dominant structures of meaning nuclear weapons are familiarized, domesticated and tamed in various ways. The fears of extermination are sanitized by applying an impersonal strategic vocabulary. For example, in naming weapon systems references are made to something superior, Gods in classical mythology, or the names given have associations with stars. With these powers on one's own side it is almost impossible to lose, that is the feeling created. But these are also the bakeries and showers of our nuclear existence.

The escapes that can be found are numerous. The mushroom-shaped cloud, the logos of this era, has become increasingly unreal, a visual cliché. Its emotional impact is marginal and the signs of danger so theoretical and cosmic that the image has lost most of its power. It has become something remote, a product of the mass media and the television screen. We prefer to think of ourselves as spectators, not as potential victims. This is one of the ways of refusing to face the prospect of the self disappearing into nothingness, a thought impossible to cope with. The five-

minute deaths in peace demonstrations grasp the issue symbolically but tend to remain pale and too ritualistic really to convey the extremity of the message.

For several reasons a nuclear catastrophe is something too overwhelming and uncontrolled to be fully understood. It is easily given the features of a spectacle. It has to be reduced to proportions that are more easy to handle: to a limited nuclear war for limited aims, a problem of survival, something accidental or a security issue to be solved with the help of exotic technology such as SDI. It is easier to understand nuclear devices as means for some particular purpose, as "weapons" which also entail some "use," than to think of them as having no rational purpose at all. However, as the "use" would have horrendous consequences, the discrepancy between "weapons" and "use" has somehow to be solved. One way of doing this is to resort to the concept of deterrence, with the implication that the "use" is only potential. Thus nuclear weapons are good "weapons" in the sense they are not really to be used except in generating a threat for the avoidance of war.

But the concept of deterrence is a very sophisticated construct and sometimes an easier way out is taken, namely by assuming that nuclear devices also can be "weapons." That is the approach in those strategic doctrines that do not make too sharp a distinction between nuclear weapons and conventional weapons. They tend to contain the idea that nuclear weapons, perhaps as a demonstration of resolution, really could be used to achieve some goals. Doctrines of limited nuclear war have several important functions. They do not deny the significance of war but preserve it. Room is made on the popular level for fantasies of war and omnipotence expressed for example in slogans such as "Nuke the Ajatollahs." These doctrines fill the mental gap that has been created by the notion that nuclear weapons are somehow qualitatively different and not useable. They allow us to think about the unthinkable, as the use of nuclear weapons would, according to the doctrine, result in controlled and limited war, not catastrophe and annihilation (Rechardt 1986).

In the nuclear parlance the nuclear winter theory represents a combination of its own, as it does not neglect the "use" aspect but refuses at the same time to regard nuclear devices as "weapons." The theory holds nuclear war to be void of any meaning and purpose and therefore confronts the individual with a number of questions difficult to handle. It destroys many of the usual escapes and ways of reducing the nuclear issue. Peace becomes the only navigable route for continuing to be part of history.

But on the other hand there are also limits to the picture of the nuclear winter. The post-nuclear situation is presented in a rather mechanistic way, in terms of environmental processes. Seen as a natural disaster it is void of the traditional logic and culture of war. It thus becomes imaginable and reconceptualized. It can be approached and given linguistic articulation. Although the nuclear winter theory is rather scientific as to its origin, it is at the same time rather dramatic and literary in its

appearance. The conventions used to describe the unfamiliar are in themselves quite familiar. In breaking the limits of the traditional picture it broadens the view but still preserves some limits. Due to its measure of familiarity it invites discussion and leaves room for fantasy. This is perhaps why the nuclear winter theory has taken root in the discourse. Although the image created is rather depressing and gloomy as to its basic features it does not merely provoke denial, helplessness and feelings of futility. It has certain qualities that allow the basic issues to be addressed.

#### **4. The Issue of Death**

One of the difficult issues is the issue of death. The nuclear winter theory brings it to the surface quite openly in stressing that there is no hiding or escape from the consequences of nuclear war. Potentially this could also be a stumbling block for any dialogue to occur. However, this seems not to be the case. The approach to death appears to be such that emotions are not blocked, as there is also some indirection and avoidance in the picture.

People attach hopes and wishes to the way they die. The quality of death is taken to be an important aspect of life. Death stripped of anything personal and particular to the individual dying is a source of great anxiety. To be left totally to the mercy of the irreversible without any personal note breeds horror. This is not primarily caused by death itself, which is expected to occur in any case at some point in time. What frightens are the circumstances that deprive the self of the possibility of being at least in some way in charge of developments to be able to colonize the future as its extension. In a way the feeling has to be created that the self is transcending death. For this to happen there has, among other things, to be some individuality present.

The prospect, embodied in nuclear war, of death for millions, is therefore an extremely unpleasant vision. It would mean standardized and collective death lacking all identity, special features and uniqueness. There would be drama and dramatic events but without the significance and glory that has usually been attached to wars and dying in war. It would be destruction and demolition rather than death in any human sense. Such a vision has an unequivocally negative impact on the quality of life if one dares to bring it to consciousness.

These aspects of nuclear war, however, are not usually brought out into the open. The approach tends to be a different one. There are some ways, although not many, for the individual to transcend the finality of death. One of the most important is the extension of life through children, family and name, by heritage or by partnership in humanity at large. If humanity survives, if it has a future, and death of the individual is not equal to the death of humanity as such, then the self may reconstitute itself with the help of a reference outside the individual and thus overcome death. If humanity continues to aspire to something meaningful there is something that carries on and continues in spite of the death of the individual. Human consciousness continues to function

in time, as to both past and future. The present functions as a moderator between these two. Pre-life, death and post-death have always been interwoven. Now, with the nuclear threat, the *present* glares out, uncushioned by memories of the past and devoid of future (Rogers 1982, p. 15.) Culture, the symbolic and the social memory are crucial in muting the reality of death. Mourning, remembering, obituaries, eulogies, graves and graveyards, in the extreme case graves of unknown soldiers, are all necessary in limiting and coping with the reality of individual death. Nuclear war endangers all this.

In a traditional perspective death in war may also be meaningful, perhaps even more meaningful than dying in civilian life of old age or cancer. Although death in war tends to be a violent death, it nevertheless leaves the self in control of events as violence in war comes as no surprise. It is an essential aspect of war, one of its traditional regularities. It may be argued that dying in war is one of the very few ways in which the individual is provided with a possibility, in a societally acceptable way, to choose the time and place of death. War is in this regard not the opposite of life but one of its highlights. This mode of apprehension is usually repressed and not brought out, but it is nevertheless there. War is sufficiently dramatic, it contains speed, movement and intensity far more than ordinary life. It is a relationship that gives identity in regard to the other. Death in war places the individual in the very centre of events, in its mainstream, not severed from it. Circumstances are at hand that are rarely around for a meaningful death, for the fulfilment of our "existing to die," as Heidegger puts it. Dying on the battlefield may be regarded as a choice in full awareness and sufficient maturity. It has connotations of active death if compared with ordinary civilian dying at the mercy of hospital bureaucracy and medical experts, withering away rather than dying, often unconscious.

Death in war has all the ingredients of a significant death, while dying in hospital leaves considerable doubt. The name of war, the cause for which it is being fought, its very purpose is perceived to be worth more than the individual. Therefore, the necessary sacrifices are taken to be worthwhile. In war the self is provided with ample opportunities to transcend death. The soldiers that die in a war that has a name and purpose are called heroes. They will become part of history and will be remembered with their names engraved in stone (Derida 1984, p. 28). Even the language used offers escapes. On the battlefield one does not die, one falls. This euphemistic notion implies that death in battle is something temporary, aiming at decreasing the finality of the event.

In regard to this type of conceptualization of death in war the nuclear winter is something of an antidote to the traditional concept. It brings out that there is no individuality, no choice, higher purpose or heroism present in nuclear war. There would only be massive and faceless death. There would no longer be groupings to identify with, groupings that are needed to safeguard a presence in the world. As nuclear war would encompass at least the Northern Hemisphere and

perhaps the whole world there would be no prospects of enjoying it from the sidelines. Even in relation to death nuclear war would not be a war in a traditional sense. It is thus obvious that new words are needed to manifest this change.

In the process of total annihilation there would, in the end, be no mourning, no monumentalization, no graves or other acts symbolizing immortality to transcend the finality of individual death. Nuclear war would put an end to historical connectedness by erasing the past. It would endanger civilization and the social memory, which are needed to come to terms with one's own personal death. Atomic annihilation would deprive the individual of those few ways hitherto available to overcome and accept the reality of death. The prospect of death in atomic warfare leaves an unimaginable void. It introduced the perspective of total extinction and conflagration with death as senseless disappearance into emptiness and desolation.

Nuclear winter brings into the discourse the image of a world becoming "a republic of insects and grass," i.e., a world void of human life (Schell 1982, p. 18). It implies a situation in which the war itself would be the only winner and mankind the loser. Compared to what is meant by war in general the advent of nuclear war would be a non-war and an event without precedent. Already the image, penetrating into consciousness, overturns several paradigms of our being in the world. From the point of the individual it holds the prospect that individual death overlaps with collective death. Nuclear winter thus becomes a claustrophobic image of being deprived of the possibility to penetrate into the future, a symbol of profound discontinuity.

Without the prospect of survivors, civilization, social memory and an archive enduring war, the reality of death becomes too irreversible. The nuclear holocaust and its aftermath threaten to cut the link between us and the future and throws doubt into our sense of moving safely through ordinary steps in the life cycle (Lifton 1986, p. 91). In such a way the perspective of time, usually linear, tends to become circular.

Obviously the image of nuclear winter contains some emancipatory aspects in clarifying certain essential features in our existential situation and dispelling some illusions. It aims, as one author puts it, at "a thoughtful, not panicky fear" (Erikson 1986, p. 65). It brings out with all clarity that for a human future to be preserved we must remain in bondage to nuclear weapons. If nuclear war occurred there would be no winners, no shelters for protection and only slim prospects of recovery. It goads our thinking into a quite painful direction which it is necessary to explore to grasp our predicament.

But how does the notion of nuclear winter operate from an existential point of view? Is it a sufficiently creative concept to bring new symbols of human continuity into the nuclear discourse?

In this respect there is much to be desired. Nuclear winter seems to be a negation and destroyer of meanings rather than a creator. It not only augurs death but paints hellfire. It further narrows down and presents peace as a necessity and an obligation but not as a choice. It



resembles a number of other modern concepts that erase old borders without providing anything reassuring in their place. It offers knowledge and awareness but very few tools to cope with the situation. It puts us in touch with the intolerable but does not add to the emotional, symbolic or moral capacities needed to remain psychologically whole in the face of the challenge formulated.

In a way, this is a problem of oneness. Nuclear winter deals with connectedness in regard to nature but does not bring out issues related to psychological and existential connectedness, the destruction of the symbolic. Nuclear war fosters disidentification and disconnectedness and so does the image of nuclear winter. It does not repress death in such a deep-rooted way as is traditionally done in connection with war and heroism. Although only dealing with the biological and not the symbolic side of death, nuclear winter nevertheless permeates our every-day existence with death, eroding important barriers so that life and death become almost indistinguishable. The fear caused, organized and directed is not necessarily only "thoughtful" fear but intolerable fear and horror. The door to the abyss is opened without sufficient light to show the way. In this regard other, more holistic images and conceptualizations pertaining also to the cultural and the symbolic would be needed to add to the efficacy of the nuclear political argument.

## 5. The Brush of Nature and Ecology

A complaint may be levelled that the nuclear winter theory does not take sufficiently into account that it deals with something that can only be grasped literally and which operates primarily on the level of the symbolic and mental structures. These aspects determine the discourse at least as much as whether the factual background turns out to be valid in its every detail.

But sometimes the matter-of-fact tone is broken. The narrative nature of the nuclear winter conception is occasionally revealed when words like "picture" and "painting" are used to describe its essence. The vision has a frame and it is selective. Sometimes the concept of "frozen summer" is used instead of nuclear winter to stress the unnatural aspects of the event. However, the endeavour to pinpoint it as something solid and factual prevents the narrative from being brought to the foreground and exploited.

It is, of course, understandable that natural scientists focus on the consequences of a potential nuclear war for climate, animals, earth, nature and environment. This is where they have factual expertise. But in this naturalization there is the danger that the picture provided becomes distorted and reduced to some of its aspects only. Most of the references used are chemical, biological, genetic, or physical in their nature. This is the mode of painting nuclear war as something measurable and objective, a development in the processes of nature. This contains the danger of making it on one hand familiar but something that can only be observed, not interfered with. Even *homo sapiens* is attached to the picture as part of nature.

The descriptions of nuclear winter do not as such neglect the human aspect. It is included, but the references are mostly to biological man rather than man as a social actor or citizen. This biological man is painted as an object of the wrath of nature responding to disturbances in its balance caused by nuclear war. Man is not seen as a conscious, wilful actor, a subject influencing developments and capable of liberating himself from the dictates of technological domination. Rather the picture is that of a victim at the mercy of the forces of nature. Paul Crutzen, a biologist, speaks for example "of human beings and other parts of the biosphere" (Crutzen 1985, p. 7).

The descriptions used create the image of a furious outburst of cosmic forces; forces that violate the normal mechanisms of nature and thereby various forms of life. These forms comprise plants, animals and humans alike. The relationship between man and nature is described as dichotomous in its essence. Man is either seen as part of nature or something outside nature, contrary to it. A dialectic view whereby man is primarily seen as a social being but one that is simultaneously in contact with nature, is missing from the discourse.

It seems that the nuclear winter image fails to make it sufficiently clear that it deals with a social and man-made, not a natural phenomenon. Nuclear war would cause, true enough, utter destruction to nature, and thereby also to humanity. However, it is not a natural phenomenon in its origins but profoundly social and cultural. The "enemy" is not nature that rebels because mankind has penetrated too deep into its secrets. Rather it is the consequence of the modern technocratic state proceeding with too much automatism and lack of consciousness. Instead of focusing the blame on nature it would be of importance to ask, for example, what is the role played by the secret, compartmentalized and narrowly technological features of the modern natural sciences themselves in creating the present situation fraught with dangers.

These aspects are not articulated explicitly enough. Nuclear war should be approached as something generated societally, as a process that causes destruction to nature but also to human culture. The prevailing view deprives war of its cultural aspects. The consequences may well be analyzed in terms of consequences in nature, but in creating the imaginative resources needed to evoke counteraction the subjectivity of culture should prevail over the objectivity of nature. The threat should not rob us of our human calendar, it should be given a societal outlet, personalized and not depersonalized. There should be flesh and blood in the picture of nuclear rivalry to mobilize our senses and rage and it should not be presented as distant and unaccessible competition between such shadow actors as "man" and "nature."

## **6. An Elite Image?**

The discourse established might also have the weakness that it only indirectly calls for concrete countermeasures and action to stop the nuclear arms race. The image of nuclear winter rebels against the dominant forms of conceptualizing essential security matters, but is societally very mild

and sophisticated in its consequences. It results in appeals rather than demands. The descriptions of nuclear winter, developments that might render Earth uninhabitable, no doubt frighten the public. But this does not as such impel people to take a stand against nuclear weapons and dominant strategic thinking. The net result could also be one of inactivity, staying aside and observing the rather sophisticated debate of the experts and their cautious advice to the decision-makers.

Nuclear winter, being a product of the scientific community, takes the form of expert knowledge. It has already from the beginning been connected with an effort to increase the understanding of the public of the various physical, biological and medical consequences of the large scale use of nuclear weapons. It stands for an endeavor to inform, but also to inform in a particular and selective way. The view put forward on Nature tends to be orgasmic and mechanistic. This is what all the map-making and model-building is about. There is an emphasis on the rational and the calculable with complicated computer models seen as the final, decisive proof. This way of presentation splits and divides rather than opens and invites for a broad and comprehensive dialogue in issues that require unifying understanding. The abstraction of nuclear winter and the nuclear winter theory are therefore two different things working in different ways.

This narrowness of the theory also comes out in the way of reporting results. In preparing a study on the environmental consequences of nuclear war the International Council of Scientific Unions stressed the need for a report that "would be unemotional, non-political, authoritative and readily understandable" (Crutzen 1985, p. 7). The terms established for informing about the nuclear theory are quite selective. They divide rather than unify. The approach chosen is an explicitly reductionist one openly acknowledging that the way of presentation is fragmented.

This mode of presentation might have its merit if seen strictly from a scientific point of view. But there is more to it, more than logic and physics. There is also metaphysical dimension, that is the images, visions and symbols and not only the logical propositions. As these metaphysical aspects are laid aside in the presentations, the discourse becomes narrow and elite-oriented. It adds to the alienation among the public rather than reduces it. Also, values, emotions and human feelings are by and large excluded from the discourse, not to speak of judgement on moral or ethical issues. It excludes a number of qualities and aspects that would be quite familiar to the public. War, with its social and cultural aspects, is reduced to a natural catastrophe to make it more approachable. With the stress on authoritative presentations, backed by the prestige of the natural sciences and scientists, a dialogue is created that easily places the public in the position of a listener, an object rather than subject, and participant in an exchange of views and judgements. The dialogue with its stress on instrumentality is reduced to those aspects that are particularly favorable to the natural scientists.

For example, the issue of human life is approached in the following way:

Recent studies projecting the consequences of nuclear war estimate that from 750 million to 1.1 billion humans in the Northern Hemisphere could die from blast, thermal, and radiation effects of large-scale nuclear war. In addition, the number of individuals suffering serious injury and trauma, many of whom would not recover, could reach hundreds of millions.

This text (Grover 1984, p. 7) resembles to some extent those of strategists and nuclear planners. It refers in its narrative to entities rather than human beings, persons, citizens and individuals. Also the strategic parlance is devoid of values, human feelings and ethics. In a similar vein it aspires to the unemotional, nonpolitical and authoritative. In the above text there is no reference to imply that it would speak about "us." Death is presented as something happening to others, not to us. The victims have no specific characteristics or personality. This tends to leave the reader outside uninvolved in regard to the issue described. It makes him an object and bystander rather than a subject with deep concern for what is being described. The text does not bring home its human dimension strongly enough. Consequently, it is not easy for the reader to identify with millions and to be a part of the picture. The holistic approach and the communal ideology underlying the nuclear winter discourse turns easily into an anti-individualistic stance.

The text above is perhaps not too different from those that sometimes use the deeply dehumanizing concept of "megabodies" in describing the potential effects of nuclear war. This is a measure equal to a million human deaths. By using this measure strategists and researchers in nuclear policies may approach the subject unemotionally, without too much risk of identification and attachment of feelings. "Megadeath," like nuclear winter, allows the discourse to stay unemotional and authoritative. By its very essence it deprives the audience of opportunities for intense moral reactions of *ought* and *ought not*. As nuclear issues are not classified into good or bad they offer few opportunities for linkages with our group feelings. We can extend our "we" feelings to our parents, ancestors and children, and in this way gain an increased sense of security and certainty. But nuclear issues are nebulous, and reduce our perceptions of life, the world, and our boundaries, as has been observed by Rita R. Rogers. Linkages to ancestors and progeny are nonexistent. "Our lives possibly become more "now" oriented, more hedonistic, more frantic and also more diminished in feelings. The nuclear threat creates only feelings of bland, non-participatory aloofness" (Rogers 1982, p. 18). The image of nuclear winter does not even strive to meet and mobilize our emotional capacities. It aspires to the unemotional and gives in general the impression that it is something particularly for top politicians, not ordinary people, to worry about.

This is not as things should be. Far too often the nuclear winter parlance is devoid of emotions and human feelings. It deliberately strives for expressions that are technical in their essence and tend to preserve a distance from what is discussed. It approaches the receiver in an exact, rational

and distinctively informative way. Thus it avoids approaching the mental structures that for the individual are decisive for a stand to be taken. The nuclear threat, in spite of its existence and our cognitive awareness of it, does not fully penetrate our human fantasy. It remains there and we here. We tend to see it as another realm. Nuclear winter further adds to this awareness but does not sufficiently increase the psychological and cultural armament to deal with the issue.

It seems that the theory of nuclear winter goes some way in preparing ground. It is something of a counterconcept initiated by a scientific community that has thus far not very strongly engaged itself in matters of security and nuclear war. It is as such an important sign of resistance and rethinking within this community. However, as to society at large no real breakthrough has taken place.

## **7. Other Belligerent Words**

Also, within the scientific community doubts still prevail. The nuclear winter theory is seen by many as opening perspectives for serious consideration. However, the theory is yet unproven. There has been a constant demand for additional research and more detailed results. Testing is still going on, and on a larger scale than before, but already now it seems that the arguments for revising and softening the policy implications of the results are becoming stronger in the debate. Two of the revisionists, Starley L. Thompson and Stephen H. Schneider, agree, on the basis of their research, that the consequences of nuclear war would be grave enough. However, in their view the nuclear winter theory is too apocalyptic. "While it is possible that a human race reduced to isolated bands of "hunter-gatherers" would eventually become extinct, we believe that even the worst plausible nuclear winter would not decimate our species to such an extent that this scenario would become valid. We stand by our assertion that the question of human extinction can now be relegated to a vanishingly low level of probability" (Thompson and Schneider 1986, p. 173). They suggest that "nuclear fall" would be a more proper characterization of the consequences than nuclear winter.

It is in a way understandable that the nuclear winter protagonists have difficulties in making concrete political recommendations about the reductions needed in the nuclear stockpiles. It is hard to translate basic problems that involve essential symbolic meanings into something dominantly quantitative. Rather, these measures must be metaphysical and qualitative. And originally the nuclear winter thesis was combined with the understanding that nuclear weapons should be dismissed altogether. With time and pressures from the establishment, these demands have become more moderate and based on ideas of minimal deterrence. There have been recommendations for modernizing strategic forces by equipping them with smaller and more accurate warheads, to avoid the bombing of cities, and to pursue the Strategic Defense Initiative (SDI). This initiative has very much become a competitor to the nuclear winter thesis. It is

something of a nostalgic, pre-nuclear solution to the same dilemmas that the nuclear winter image tries to address. SDI promises to solve the problem of total vulnerability with the help of new technology whereas nuclear winter departs from the understanding that there are no technological solutions to that problem. The two themes are competing with each other, not that much politically but because both are loaded with metaphysics and symbolic meanings. SDI has the benefit that this is understood on the highest level while nuclear winter is often locked into a narrow scientific logic (Smith 1987, p. 25).

The discussion has become a sophisticated debate among the specialists, natural scientists, strategists, game theorists, with some participation from the side of the US administration. "The appropriate policy is neither to ignore nor exaggerate the effects of nuclear winter," said Joseph S. Nye in an effort to summarize the discussion and its conclusions (Nye 1986, p. 126).

But perhaps it is still premature to pass any final judgement. Although its features of social engineering have become stronger with time, the concept of nuclear winter is still in its ascendancy. And although it appears to have some deficiencies, the emergence of a new concept has had some impact in restructuring, organizing and directing the nuclear discourse during the eighties. It adds new perspectives to the debate, stores important and necessary information in the social archive and reshapes the mental structures underlying the nuclear issue. It reconstructs chains of meaning that have been broken for decades in the nuclear era and creates new ones that have never before existed but which are necessary for human survival. It adds, although not strongly enough, to the unique human capacity to symbolize, a power that is needed in adjusting perceptions and behaviour to the avoidance of disasters.

The nuclear winter image penetrates into the previously unsaid and unspoken, hence breaking some limits of thought and consciousness. Like words in general, "nuclear winter," too, is open to new and different interpretations, and this despite the fact that its aspiration to authority easily implies that the chain of meaning attached to it is closed and open only for experts to elaborate. As a matter of fact it is open to those who are interested in entering the discourse -- as it has been done here. The image of nuclear winter is a product of the natural sciences, a sign of dissidence and reconsideration perhaps. It intervenes in the long business of dying that must precede nuclear war before such a war can take place and is part of its preparatory work. It sets an example for other fields of science, indicating that also social scientists, philosophers or linguists can approach the unsaid, open new and more comprehensive chains of meaning, and participate in the creation of those counterimages and belligerent words that are needed in the field of the symbolic for humanity to prevail in the nuclear age. Nuclear winter is only one example of what can be done and there is evidently plenty of room for other efforts of a similar kind.

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