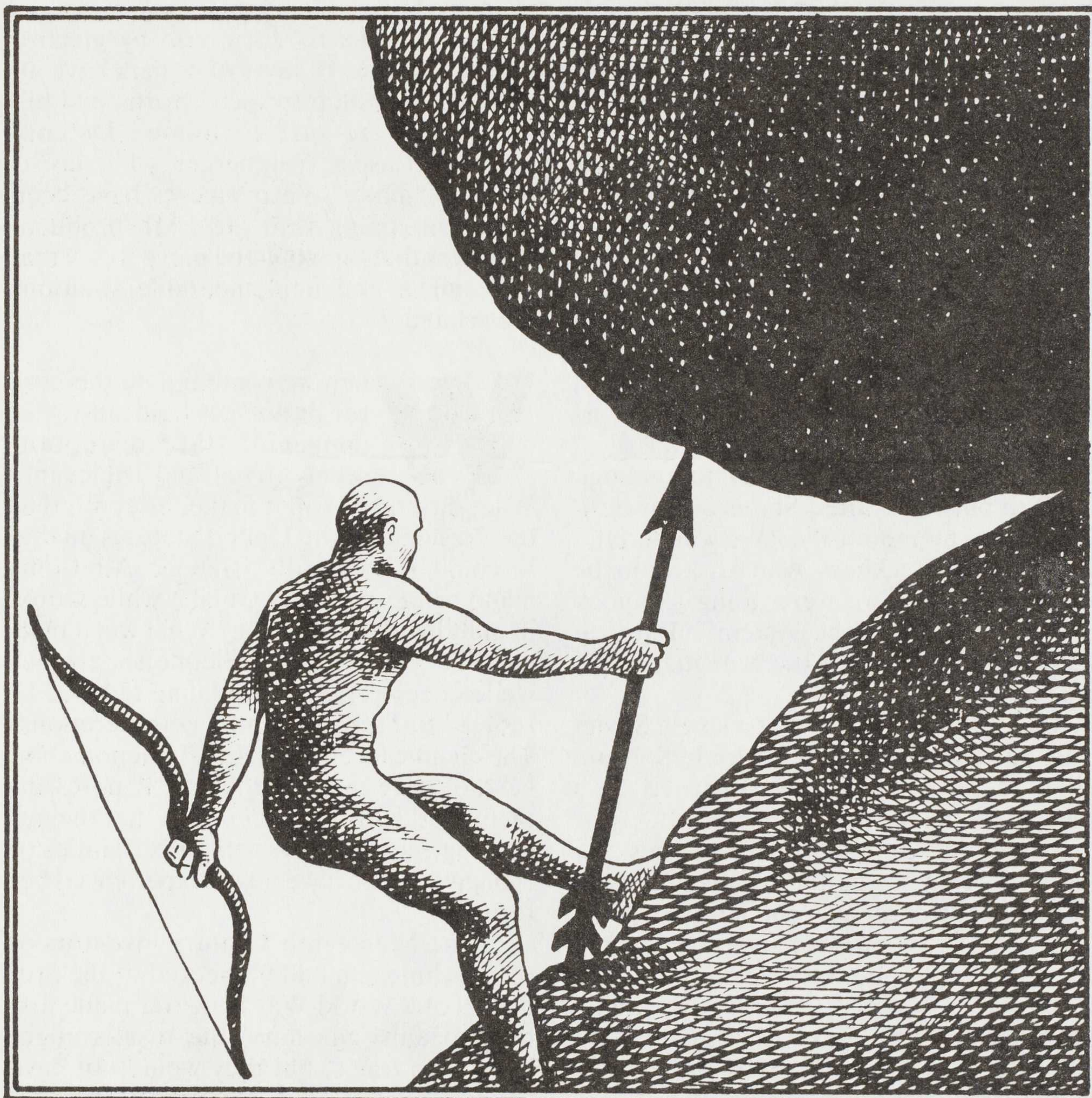




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war would seriously damage the ozone layer that protects the Earth from ultraviolet radiation. Were it not for this ozone shield, "life as currently known could not exist except possibly in the ocean," scientists Samuel Glasstone and Philip J. Dolan wrote in a study for the Pentagon entitled *The Effects of Nuclear Weapons*. In a nuclear exchange of 10,000 megatons, they concluded, ozone depletion could reach 70 per cent in the Northern Hemisphere and 40 per cent in the Southern Hemisphere.

Just four years later, in 1979, the National Academy of Sciences took a much more sanguine view of the potential danger to the ozone shield, concluding that it would take 1,000 or more one-megaton warheads detonated at an altitude of at least

fifteen miles to deplete the ozone to a serious degree; "otherwise, ozone depletion is not believed to be likely." In a summary of the new findings, however, the Congressional Office of Technology Assessment cautioned that while "these changes cast doubt on the likelihood of a serious ozone depletion as a consequence of nuclear war . . . they by no means demonstrate that ozone depletion is impossible, and even slight depletion could cause an increase in the incidence of skin cancer. This is an area where research continues, and further changes should not be surprising."

What is surprising is how little we know. In addition to the consequences of EMP and the possible threat to the ozone shield, there are vast areas of ignorance about the

potential effects of nuclear war on the planet's ecosystems, on the gene pool of humans and other species, on the very habitability of the Earth. It is simply impossible to calculate the immediate and long-range consequences of nuclear war. The tendency since 1945 (when the U.S. military underestimated by a factor of ten the number of casualties that would be claimed by the atomic bomb dropped on Hiroshima) has been to minimize the scope of the damage that could be inflicted. Almost every projection has later been discredited.

The governments of the United States and the Soviet Union have subjected humanity to risks that are not only unreasonable but unfathomable. It cannot rationally be argued that such risks are worth taking to ensure (or at least increase the likelihood of) survival, when the risks themselves make it more likely that neither side will survive.

As if matters weren't bad enough, each superpower is steadily raising the level of risk. What is so instructive about EMP is that it totally confounds official plans for "limited" or "protracted" nuclear war, which depend on the maintenance of fool-proof communications. Now the Reagan Administration has proposed to elevate the arms race to a new level—outer space—about which we know even less than we do about earthbound warfare.

In a recent article for *The New Republic*, the imperturbable Charles Krauthammer airily dismissed the apocalyptic alarm of those who believe the nuclear arms race could culminate in the end of civilization on this planet. Are we in an "emergency"? "Yes, but no more than other civilizations, since all are susceptible to destruction."

Such equanimity would be admirable were it not so willfully misplaced. Even in 1945, Secretary of War Henry L. Stimson understood that the atom was not merely another tool that puts us in harm's way—like fire or bullets or poison gas. It represented, he said, "a revolutionary change in the relations of man and the universe."

It is the failure to recognize that revolutionary change that makes the governments of the superpowers the most irresponsible in history. ■