

Office Memorandum • UNITED STATES GOVERNMENT *red*

TO : Dr. C. L. Dunham, Director  
Division of Biology and Medicine

DATE: January 4, 1957

FROM : Paul S. Henshaw, Biophysicist *PSK*  
Division of Biology and Medicine

SUBJECT: POSSIBLE BIOLOGIC CONSEQUENCES OF NUCLEAR WARFARE

Perhaps you will recall the brief conversation we had in your office just before Christmas regarding the attached note on "Future Work." On the basis of my impression that you concurred on the view that a special study is desirable, I prepared the attached statement "Biologic Consequences of Nuclear War" (Proposed Study). This then was used as background in an exploratory conversation with John L. Magee, WSEG, who had raised questions about this problem.

There is a strong desire on the part of WSEG to have as much information as possible about the effects of ionizing radiation on population groups.

At the present time, there is question as to whether AEC should initiate action establishing a study or whether it would be better to have WSEG submit a formal request.

Your advice would be appreciated.

Enclosures:

As indicated above

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MILITARY REGISTRATION & ID

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## Biologic Consequences of Nuclear War

(Proposed study)

### The Problem:

To evaluate the effect of biologic changes induced in human and other populations by nuclear war. In particular:

1. To obtain from WSEG four or five hypothetical, but nevertheless tangible and possible patterns of nuclear attack on the United States or on a presumed enemy.
2. After taking into account the loss of life caused by blast, burn and acute irradiation damage together with the effects these may have on subsequent human behavior, to go as far as possible in estimating the magnitude of genetic and somatic damage due to be manifest subsequent to attacks.

### Significance:

Defense planning involving atomic bombs has included very limited consideration of the aftermath of nuclear war. Geneticists are calling attention to racial deterioration that may follow increases in the load of deleterious mutations. In the case of full scale nuclear war, doubling, trebling or even quadrupling of deleterious mutations may well occur in millions of people scattered throughout the world. Thus, while military objectives are being achieved, a biological condition conceivably could be produced which would result in precipitous racial degradation and possible species disaster. Very little attention has been given thus far to the possible effects of world-wide distribution of a powerful mutagen. Actually, questions should be asked about the use of mutagens as a weapon for defense and about potentialities of their use for offense.

### Approach:

Analyze every possible kind of data on population group behavior following application of mutagens of different kinds (radiation, heat, chemical agents) taking into account length of life, physical and mental fitness, developmental anomalies and reproductive capacity. Consult selected people (on-site and off-site) causing them to analyze existing data with new points in mind. Influence the planning of experiments being designed for the use of large animals. Develop meaningful models using microorganisms.

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