

The ability of human beings to make judgments about space is a combination of inherited, learned, and cultural factors and is directly related to human performance in the context of modern weapon systems.

An understanding of the role of various sense modalities under normal (terrestrial) conditions is essential before it is possible to study spatial abilities under unusual environmental circumstances.

Under the condition of weightlessness, as encountered in spacecraft, all information from the vestibular system will be canceled out. This is a most important element in spatial judgment. Kinaesthetic information under conditions of weightlessness will be distorted at least until the subject becomes acclimated to the condition of weightlessness, which may or may not occur.

Under the influence of certain military environments, the operator is exposed to environmental factors which can cause disorientation of visual cues in regard to spatial relationships. These environments include long vigilance, radar scope and instrument monitoring, arctic and undersea environments, and space environments.

It may be a matter of concern why the self-image of body space was chosen as the object for this research. This choice was made because body space is familiar to all persons from birth and it is the one object of perception on which all the various sense modes can converge.

The research also concerns judgments regarding spatial relations of objects within the subject's reach, or his work area.

Another reason why it is appropriate to deal with the body-image is that one's self-conception is very closely affected by abnormal mental status. Mistakes in judgment of external environment can be rechecked against new information and corrections can be made.

Changed conceptions of the self are more difficult to correct and can become the critical elements in creating a sense of psychological disorientation. It may be possible, in the long run, to develop perceptual tests that will be suitable for the selection of military personnel for space vehicles and for other more frequent but equally taxing military operating environments.

The advantages of having valid and reliable test criteria for personnel selection are obvious in the area of performance capability. It would also be of extreme importance if tests were developed which could estimate tolerance for the physical and psychological stresses of unusual environments.

There is a possibility that research in this area may throw light on the subject's susceptibility to various trance states, disorientation due to sleeplessness and to various perceptual aberrations related to hallucinatory experiences caused by extended vigilance and sensory deprivation.

Dr. Robert Davidon is an able experimental psychologist. He received his A.B. in 1940 and his M.A. in 1946 from the University of Illinois, and his Ph. D. in 1951 from the University of Pennsylvania.

He is well regarded by other psychologists in his field. He has become thoroughly identified with this field of investigation and has developed unique and imaginatively conceived instrumentation to measure the phenomena which he is studying.

The investigator was given a grant by the Fund for the Advancement of Education (Ford Foundation) in 1953, a research grant from the American Philosophical Society in 1955, and a special research fellowship from the National Institute of Mental Health in 1960, which provided support for a 10-month visiting fellowship at the Applied Psychology Research Unit, Medical Research Council, Cambridge, England. During this fellowship, Dr. Davidon was engaged continuously in studies and research related to his AFOSR grant.

Bryn Mawr College has a graduate training and research program in psychology and grants a Ph. D. degree in this field. Male students are admitted to the graduate departments. There are 12 members of the American Psychological Association listed at Bryn Mawr College (including the president, Dr. Katherine E. McBride).

The school has good laboratory facilities and an instrument shop. It is accessible to Philadelphia and research subjects of any desired type can be located within easy reach of the college.

There are only four or five intellectual centers in the United States that would rank with or above the Philadelphia area in the field of psychology.

Bryn Mawr has cooperative teaching and research arrangements with two neighboring colleges, Swarthmore (coeducational) and Haverford (men's college).