

Meetings

Sensory Deprivation

A "Symposium on Sensory Deprivation" was held at Harvard Medical School in Boston on 20 and 21 June 1958. The meeting was jointly sponsored by the Physiological Psychology Branch of the Office of Naval Research, the Harvard Medical School, and the Boston City Hospital. The meeting consisted of a working group of some 80 scientists working directly or indirectly with problems of sensory deprivation, isolation, and confinement.

An outstanding feature of the meeting was the fact that representatives of a wide variety of disciplines and interests, ranging from neurophysiology, psychiatry, psychoanalysis, and psychology to biochemistry, pharmacology, mathematics, and engineering, could meet together and communicate meaningfully about a problem of common interest.

Sensory deprivation is the term applied to various experimental techniques designed to isolate the subject from his natural environment through the elimination, reduction, or stereotyping of sensation from vision, hearing, and touch. The effects of sensory deprivation have long been known in the accounts of explorers and shipwrecked sailors, more recently in "brainwashed" prisoners-of-war. They are varied and include boredom, restlessness, oppression, mental inefficiency, and aberrations in thinking. The specific determinants and consequences of sensory deprivation have recently come in for increasing systematic study in the laboratory.

Findings were reported at the symposium relevant to the effects of deprived or restricted environments upon intellectual function, opinions and attitudes, perceptual performance, reaction time, electroencephalograms, and physiological reactivity, as well as upon personality and emotions. The relevance of sensory deprivation to a variety of practical situations was examined, including its role in the treatment of psychiatric disorders, its effects on the performance of aviators, and its special utility in the study of stress. The particular relevance of questions raised by research in sensory deprivation for concepts, techniques, and theory in psychoanalysis was also discussed.

The mental disturbances produced by sensory deprivation were thought to be explained best in terms of interference with previously little understood neural mechanisms essential to alertness and attentiveness. The mind does not seem to function efficiently without constant contact with changing stimuli from the outside world. On the other hand, effects similar to those seen with sensory deprivation have been observed in situations



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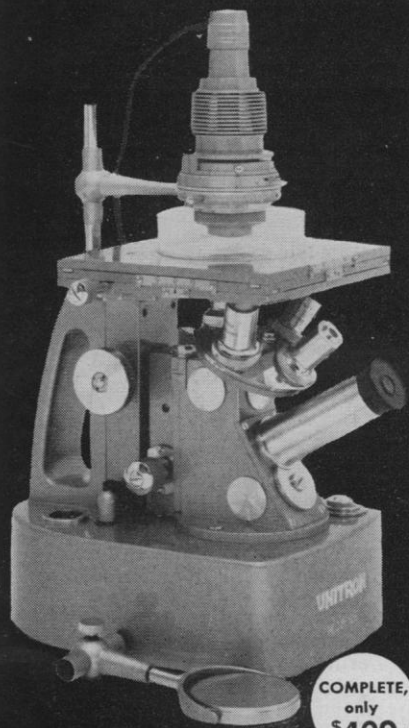
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in which this same neural mechanism is taxed through overloading.

On the behavioral level it was suggested that decrease in environmental input (in terms of either absolute reduction or absence of change) has the effect of modifying the learned model of the world which each individual acquires in the form of expectancies or "programs" for dealing with reality. The understanding of the results of sensory deprivation clearly requires a functional, rather than a structural, view of behavior and its instrumentalities.

The classical conception of the human nervous system as essentially a switching mechanism appears increasingly to be losing ground. In its place has emerged a view of the nervous system, as characterized by W. Gray Walter, as a "complex, probabilistic, nonlinear system." This change in perspective has produced new emphases in research. For example, the previous total input-output history of the experimental organism, hitherto ignored, has become an important variable to be controlled. The functional view also points to a search for the parameters of sensory input along "meaning" dimensions as well as along physical dimensions for understanding resultant output or behavior.

The symposium included six papers reporting completed work, three theoretical papers, and a round-table discussion. The experimental papers were as follows:

1) "Cognitive and physiological effects of perceptual isolation," by Woodburn Heron.

2) "Individual differences in reaction to experimental interference with reality contact," by Leo Goldberger and Robert R. Holt.

3) "The effect of human isolation upon some perceptual and motor skills," by Jack Vernon, Thomas E. McGill, Walter Gulick, and Douglas K. Candland.

4) "Sensory deprivation in aviation," by A. M. H. Bennett.

5) "Physiological and psychological aspects of sensory deprivation—a case analysis," by Jack H. Mendelson, Philip Kubzansky, P. Herbert Leiderman, Donald Wexler, and Philip Solomon.

6) "Observations of anaclitic therapy during sensory deprivation," by Hassan Azima, R. Vispo, and Fern J. Azima.

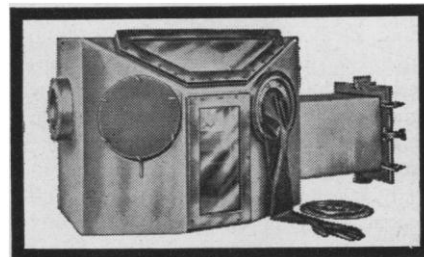
The theoretical papers discussed sensory deprivation from the point of view of psychoanalysis, neurophysiology, and cognitive psychology, as follows:

1) "Theoretical considerations," by Lawrence S. Kubie.

2) "Are there common factors in sensory deprivation, sensory distortion and sensory overload?" by Donald B. Lindsay.

3) "The cognitive consequences of early sensory deprivation," by Jerome Bruner.

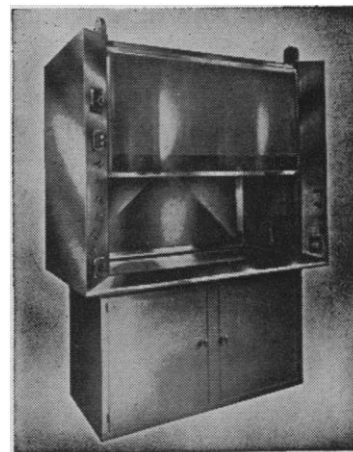
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A concluding round-table discussion was held, with the following participants: Donald O. Hebb, Jerome S. Bruner, Ernst Gellhorn, Lawrence S. Kubie, John C. Lilly, Erich Lindemann, Donald B. Lindsley, Horace G. Magoun, W. Gray Walter, Norbert Wiener, and Heinz Werner. Among others who contributed significantly to the general discussion were Grete Bibring, Edwin Boring, Enoch Callaway III, Sanford I. Cohen, Joel Elkes, Charles Fisher, Robert Grenell, George Klein, Warren McCulloch, Sydney Margolin, Austin Riesen, Norman Rosenzweig, George Ruff, and Richard Trumbull.

The proceedings of the meetings are to be published.

PHILIP SOLOMON, PHILIP KUBZANSKY,
P. HERBERT LEIDERMAN,
JACK H. MENDELSON, DONALD WEXLER
*Psychiatric Research Laboratory,
Boston City Hospital,
Boston, Massachusetts*

Forthcoming Events

February

23-27. American Concrete Inst., 55th annual, Los Angeles, Calif. (W. A. Maples, A.C.I., 18263 W. McNichols Rd., Detroit 19, Mich.)

25-26. Midwest Industrial Radioisotopes Conf., Manhattan, Kan. (J. Kitchens, Dept. of Continuing Education, Kansas State College, Manhattan.)

25-27. Biophysical Soc., annual, Pittsburgh, Pa. (G. Felsenfeld, Dept. of Biophysics, Univ. of Pittsburgh, 325 Clapp Hall, Pittsburgh 13.)

26-28. American Acad. of Forensic Sciences, annual, Chicago, Ill. (W. J. R. Camp, AAFS, 1853 W. Polk St., Chicago 12.)

26-28. Genetics and Cancer, 13th annual symp. on fundamental cancer research, Houston, Tex. (Editorial Office, Univ. of Texas, M. D. Anderson Hospital and Tumor Inst., Texas Medical Center, Houston 25.)

27-1. National Wildlife Federation, 23rd annual convention, New York, N.Y. (NWF, 232 Carroll St., NW, Washington 12.)

March

1-2. Pennsylvania Acad. of Sciences, Gettysburg. (K. Dearolf, Public Museum and Art Gallery, Reading, Pa.)

1-5. Gas Turbine Power Conf., Cincinnati, Ohio. (O. B. Schier, ASME, 29 W. 39 St., New York, N.Y.)

7. American Chemical Soc., Oklahoma Div., tetrasectional meeting, Tulsa. (J. W. Conant, ACS, Grand River Chemical Div. of Deere and Co., Pryor, Okla.)

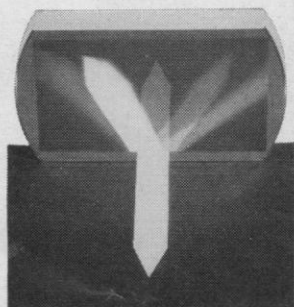
8-9. American Broncho-Esophagological Assoc., Hot Springs, Va. (F. J. Putney, 1712 Locust St., Philadelphia, Pa.)

8-9. American Laryngological Assoc., Hot Springs, Va. (J. H. Maxwell, University Hospital, Ann Arbor, Mich.)

8-12. Aviation Conf., Los Angeles, Calif. (O. B. Schier, ASME, 29 W. 39 St., New York, N.Y.)

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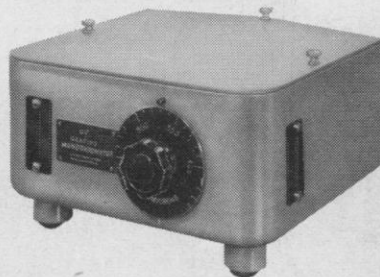
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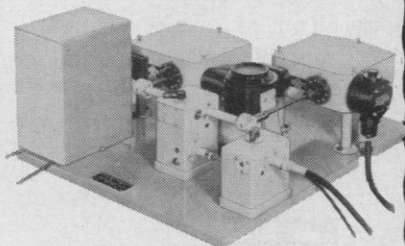
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10-12. American Laryngological, Rhinological and Otolological Soc., Hot Springs, Va. (C. S. Nash, 708 Medical Arts Bldg., Rochester 7, N.Y.)

13-14. American Otolological Soc., Hot Springs, Va. (L. R. Boies, University Hospital, Minneapolis 14, Minn.)

13-15. Alabama Acad. of Sciences, Auburn, (H. M. Kaylor, Dept. of Physics, Birmingham-Southern College, Birmingham, Ala.)

14-15. Southwestern Soc. of Nuclear Medicine, 4th annual, New Orleans, La. (S. B. Nadler, SSNM, 1520 Louisiana Ave., New Orleans 15, La.)

15-20. American College of Allergists,

San Francisco, Calif. (M. C. Harris, 450 Sutter St., San Francisco.)

16-19. American Assoc. of Petroleum Geologists, Soc. of Economic Paleontologists and Mineralogists, 44th annual, Dallas, Tex. (W. A. Waldschmidt, AAPG, 311 Leggett Building, Midland, Tex.)

16-20. American Inst. of Chemical Engineers, Atlantic City, N.J. (F. J. Van Antwerpen, AICE, 25 W. 45 St., New York 36.)

16-20. National Assoc. of Corrosion Engineers, 15th annual conf., Chicago, Ill. (NACE, Southern Standard Bldg., Houston, Tex.)

16-20. Western Metal Exposition and

Cong., 11th, Los Angeles, Calif. (R. T. Bayless, 7301 Euclid Ave., Cleveland 3.

17-19. National Health Council, Chicago, Ill. (P. E. Ryan, 1790 Broadway, New York, 19.)

18-25. International Social Science Council, 4th general assembly (by invitation), Paris, France. (C. Levi-Strauss, Secretary-General, International Social Science Council 19, avenue Kleber, Paris.)

19-21. Society for Research in Child Development, NIH, Bethesda, Md. (Miss N. Bayley, Laboratory of Psychology, National Inst. of Mental Health, Bethesda 14, Md.)

23-26. Institute of Radio Engineers, natl. conv., New York, N.Y. (G. L. Haller, IRE, 1 E. 79 St., New York 21.)

24-27. American Meteorological Soc., general, Chicago, Ill. (K. C. Spengler, AMS, 3 Joy Street, Boston, Mass.)

27-28. Michigan Acad. of Sciences, East Lansing. (D. A. Rings, Univ. of Michigan, Dept. of Engineering, Ann Arbor.)

28. South Carolina Acad. of Sciences, Columbia. (H. W. Freeman, Dept. of Biology, Winthrop College, Rock Hill, S.C.)

29-3. Latin American Congress of Chemistry, 7th, Mexico D.F., Mexico. (R. I. Frisbie, Calle Ciprés No. 176, Zone 4, Mexico, D.F.)

30-1. American Orthopsychiatric Assoc., San Francisco, Calif. (M. F. Langer, 1790 Broadway, New York 19.)

30-12. Bahamas Medical Conf., 7th, Nassau. (B. L. Frank, 1290 Pine Ave., W. Montreal, Canada.)

31-2. American Power Conf., 21st annual, Chicago, Ill. (N. S. Hibshman, AIEE, 33 W. 39 St., New York 18.)

31-2. Symposium on Millimeter Waves, 9th, New York, N.Y. (H. J. Carlin, Microwave Research Inst., 55 Johnson St., Brooklyn 1, N.Y.)

31-5. International Committee of Military Medicine and Pharmacy, 21st session, Paris, France. (Comité International de Médecine et de Pharmacie Militaires, Hôpital Militaire, 79, rue Saint Laurent, Liège, Belgium.)

April

1-3. American Assoc. of Anatomists, Seattle, Wash. (B. Flexner, Univ. of Pennsylvania Medical School, Philadelphia 4.)

1-4. National Council of Teachers of Mathematics, Dallas, Tex. (H. T. Karnes, Dept. of Mathematics, Louisiana State Univ., Baton Rouge 3.)

1-4. National Science Teachers Assoc., 7th natl. conv., Atlantic City, N.J. (R. H. Carlton, NSTA, 1201 16 St., NW, Washington 6.)

1-4. Neurosurgical Soc. of America, Hot Springs, Va. (F. P. Smith, 260 Crittenden Blvd., Rochester 20, N.Y.)

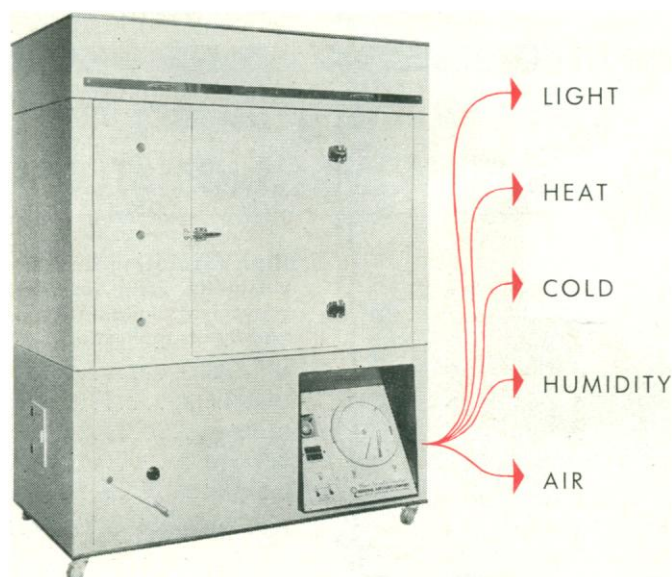
1-29. World Meteorological Organization, 3rd session of congress, Geneva, Switzerland. (WMO, Campagne Rigot, 1, avenue de la Paix, Geneva.)

2-3. Electrically Exploded Wires, conf., Boston, Mass. (W. G. Chace, Thermal Radiation Laboratory, CRZCM, Geophysics Research Directorate, Air Force Cambridge Research Center, Bedford, Mass.)

2-4. Association of American Geogra-

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phers, 55th annual, Pittsburgh, Pa. (J. E. Guernsey, 9707 Parkwood Dr., Bethesda, Md.)

2-4. Association for Computing Machinery, Cleveland, Ohio. (J. Moshman, Corporation for Economic and Industrial Research, 1200 Jefferson Davis Highway, Arlington 2, Va.)

2-4. Optical Soc. of America, New York, N.Y. (S. S. Ballard, Dept. of Physics, Univ. of Florida, Gainesville.)

3-4. Eastern Psychological Assoc., Atlantic City, N.J. (C. H. Rush, Standard Oil Co. of New Jersey, Rockefeller Plaza, New York, N.Y.)

3-5. American Soc. for the Study of Sterility, Atlantic City, N.J. (H. H. Thomas, 920 S. 19 St., Birmingham 5, Ala.)

3-5. Cooper Ornithological Soc., Berkeley, Calif. (J. Davis, Univ. of California, Hastings Reservation, Jamesburg Route, Carmel Valley.)

5-9. American College of Obstetricians and Gynecologists, Atlantic City, N.J. (J. C. Ullery, 15 S. Clark St., Chicago 3, Ill.)

5-10. American Chemical Soc., 135th, Boston, Mass. (M. A. H. Emery, 18th and K St., NW, Washington, D.C.)

5-10. Nuclear Congress, Cleveland, Ohio. (S. Baron, Burns & Roe, Inc., 160 West Broadway, New York 13.)

6. Paleontological Research Institution, Ithaca, N.Y. (R. Harris, 109 Dearborn Rd., Ithaca.)

6-7. Chemical and Petroleum Instrumentation, 2nd natl. symp., St Louis, Mo. (H. S. Kindler, Director of Technical and Educational Services, ISA, 313 Sixth Ave., Pittsburgh 22, Pa.)

6-8. American Radium Soc., Hot Springs, Va. (R. L. Brown, Robert Winship Clinic, Emory Univ., Atlanta 22, Ga.)

6-8. Astronautics, AFOSR 3rd annual symp., Washington, D.C. (Headquarters, Air Force Office of Scientific Research, Washington 25.)

6-8. National Open Hearth Steel Furnace, Coke Oven and Raw Materials Conf., St. Louis, Mo. (E. O. Kirkendall, AIME, 29 W. 39 St., New York 18.)

6-9. American Acad. of General Practice, San Francisco, Calif. (M. F. Cahal, Volker Blvd. at Brookside, Kansas City 12, Mo.)

6-11. Coordination Chemistry, intern. conf., London, England. (Chemical Soc., Burlington House, London, W.1.)

12-13. American Soc. for Artificial Internal Organs, Atlantic City, N.J. (C. K. Kirby, ASAIO, 110 Maloney Bldg., University Hospital, 3600 Spruce St., Philadelphia 4, Pa.)

12-16. American Physiological Soc., Atlantic City, N.J. (R. C. Dags, 9650 Wisconsin Ave., Washington, D.C.)

12-16. Fracture, intern. conf., Cambridge and Dedham, Mass. (Headquarters, Air Force Office of Scientific Research, Washington 25.)

13. Biochemical Cytology of Liver (Histochemical Soc.), symp., Atlantic City, N.J. (A. B. Novikoff, Dept. of Pathology, Albert Einstein College of Medicine, Yeshiva Univ., Eastchester Rd. and Morris Ave., New York 61.)

(See issue of 16 January for comprehensive list)

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