DOCUMENT RESUME

ED 043 214 RM 008 240

Staats, Arthur W.; Carlson, Carl G. AUTHOR

Classical Conditioning of Fmotional Responses TITLE

(Meaning, Attitudes, Values, Interests) and Fffects on Social Behavior: A Bibliography.

Hawaii Univ., Honolulu. Dept. of Psychology. INSTITUTION SPONS AGENCY

Office of Naval Research, Washington, D.C. PEPORT NO TR-5

Apr 70 PUB DATE HOTE

21p.; Language, Personality, Social, and Cross-Cultural Study and Measurement of the Human

A-R-D (Notivational) System series

FDRS PRICE FDRS Price MP-\$0.25 HC-\$1.15

Affective Behavior, Attitudes, Behavior Fating D_SCRIPTORS

> Scales, Pehavior Theories, *Pibliographies, Conditioned Response, Emotional Adjustment, .

Emotional Pesponse, Interpersonal Relationship, *Iearning Theories, Reinforcers, Semantics, Social Adjustment, *Social Attitudes, *Social Rehavior,

*Verbal Operant Conditioning

A R D Theory, Attitudinal Reinforcing Discriminative IDENTIFIERS

Stimuli, *Staats (Arthur W)

ABSTRACT

This is a bibliography of 81 papers and books published in the years 1957-1970 relevant to the subject of verbally-elicited responses that are in accordance with principles of classical conditioning. Of these publications, 24 are by Staats-one of the bibliographers--and his associates. (MF)



OFFICE OF NAVAL RESEARCH NO0014-67-A-0387-0007



LANGUAGE, PERSONALITY, SOCIAL, AND CROSS-CULTURAL STUDY AND MEASUREMENT OF THE HUMAN A-R-D (MOTIVATIONAL) SYSTEM

DEPARTMENT OF PSYCHOLOGY UNIVERSITY OF HAWAII

HONOLULU, HAWA!I 95822

Classical Conditioning of Emotional Rasponsus (Meaning, Actitudes, Values, Interests) and Effects on Social Behavior: A Bibliography

Arthur W. Steate and Carl G. Carlson

Technical Report Number 5

April 1970

PRINCIPAL INVESTIGATOR: ARTHUR W. STAATS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS DECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IF. POINTS OF YIEW OR OPINIONS STATED BO NOT RECESSABILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Classical Conditioning of Emotional Responses (Meaning, Attitudes, Values, Interests) and Effects on Social Behavior: A Bibliography

Arthur W. Steets and Garl G. Carlson University of Hawaii

Technical Report Number 5

April 1970

Supported by: Personnel and Training Research Programs
Psychological Sciences Division
Office of Naval Research
Work Unit NR 154-290
Contract NO0014-67-A-0387-0007

Principal Investigator:

Arthur W. Stasts

This document has been approved for public release and sale; its distribution is unlimited. Reproduction in whole or in part is permitted for any purpose of the United States Government.



ABSTRACT

In 1955 Staats began experimental development of the hypothesis that words as conditioned stimuli come to elicit responses according to the principles of classical conditioning. Emotional responses— or evaluative responses, evaluative meaning, attitudes, values and so on—constitute an important type of response that can be classically conditioned to words. Many stimuli elicit emotional responses and the words that are contiguously paired with those stimuli also come to elicit an emotional response. Moreover, once a word comes to elicit an emotional response the word can serve to condition emotionality to any other stimulus with which it is paired. Many words have this function, and the processes involved constitute one of the powerful functions of language. Extensions of these principles have significance for many areas of psychology.

Following this analysis, Staats formulated a long-term project that included a series of studies to investigate both first-order classical conditioning of emotional responses as well as higher-order conditioning of responses to words.

This series was first supported by the Office of Naval Research under Contract Nonr-2305 (00), and continued under Contract Nonr-2794 (02).

Following this formulation a number of experiments were conducted by Staats and his associates that showed that emotional responses could be conditioned to words and that many words in our language elicit emotional responses that could be conditioned to other stimuli. This line of research has been elaborated by a number of other invertigators, and it has been criticized and supported by other studies. Staats has also developed the learning theory involved and extended it to various areas of study (1961, 1963, 1964a, 1964b, 1964c, 1966d, 1966, 1967, 1968a, 1968b). The theory and the various studies constitute a framework within which to consider significant aspects of human behavior. The present bibliography thus lists the various experimental studies and theoretical analyses to April of 1970. (Additional



extensions into social interaction and attraction have been made by Byrne and Lott and Lott. Studies not involving classical conditioning manipulations have not been included herein, however.)



BIBLIOGRAPHY

- Abell, A.T. Words functioning simultaneously as operant and respondent reinforcers:

 Preliminary atudy. <u>Psychological Reports</u>, 1969, <u>24</u>, 123-133. (a)
- Abell, A.T. Words functioning simultaneously as operant and respondent reinforcers:

 Replication. <u>Psychological Reports</u>, 1969, <u>25</u>, \$74. (b)
- Abell, A.T. A test of reinforcer forms with flaps. Perceptual and Motor Skills, 1969, 29, 984-986. (c)
- Brewer, B.A. and Gross, M.C. Conditioning of attitudes using a backward conditioning paradigm. <u>Technical Report No. 3</u>, University of Hawaii, Office of Naval
 Research Contract N 000 14-67-A-0387-0007, September, 1969.
- Brotsky, S.J. Classical conditioning of the galvanic skin response to verbal concepts. <u>Journal of Experimental Psychology</u>, 1968, 76, 244-253.
- Bugelski, B.R. and Hersen, M. Conditioning acceptance or rejection of information.

 <u>Journal of Experimental Psychology</u>, 1966, <u>71</u>, 619-623.
- Carriero, N.J. The conditioning of negative attitudes to unfamiliar items of information. <u>Journal of Verbal Learning and Verbal Behavior</u>, 1967, 6, 128-135.
- Cohen, B.H. Role of awareness in meaning established by classical conditioning.

 <u>Journal of Experimental Psychology</u>, 1964, 67, 372-378.
- Coleman, D.E. The classical conditioning of attitudes toward selected educational concepts. <u>Dissertation Abstracts</u>, 1967, <u>27</u>, 4125.
- Coles, G.J. and Leonard, T.B., III. Conditioned word meaning and the inter-stimulus interval. <u>Psychonomic Science</u>, 1969, <u>14</u>, 60-61.
- Costello, C.G. Extraversion, neuroticism and the classical conditioning of word meaning. <u>Psychonomic Science</u>, 1967, 8, 307-308.
- Das, J.P. and Manda, P.C. Hediated transfer of attitudes. <u>Journal of Abnormal and Social Psychology</u>, 1963, 66, 12-16.



- Di Vesta, F.J. Contrast effects in the verbal conditioning of meaning. <u>Journal</u> of <u>Experimental Psychology</u>, 1961, 62, 535-544.
- Di Vesta, P.J. and Stover, D.O. The semantic mediation of evaluative meaning.

 <u>Journal of Experimental Psychology</u>, 1962, 64, 467-475.
- Barly, C.J. Attitude learning in children. <u>Journal of Educational Psychology</u>, 1958, 59, 176-180.
- Ertel, S., Oldenberg, E., Siry, U., and Vormfelds, D. Classical conditioning of connotative meanings. Paper presented at the Conference on Human Learning with International Participation, Prague, Czechoslovakia, July 15-19, 1969.
- Finley, J.R., and Staats, A.W. Evaluative meaning words as reinforcing stimuli.

 Journal of Verbal Learning and Verbal Behavior, 1967, 6, 193-197.
- Franks, G.H. and Mantell, D. Introversion-extraversion and the verbal conditioning and generalization of meaning responses to nonsense syllables in normal and alcoholic subjects. British Journal of Social and Clinical Psychology, 1966, 5, 299-305.
- Freeman, N.C.G. and Suedfeld, P. Classical conditioning of verbal meaning: The roles of awareness, meaningfulness, and evaluative losding. <u>Psychological</u>
 Record, 1969, 19, 335-338.
- Geer, J.H. A teac of the classical conditioning model of emotion: The use of non-painful aversive stimuli as unconditioned stimuli in a conditioning procedure.

 <u>Journal of Personality and Social Psychology</u>, 1968, 10, 148-156.
- Gerstein, A.I. The effect of reinforcement schedules on meaning generalization and on awareness of the purpose of the experiment. <u>Journal of Personality</u> and <u>Social Psychology</u>, 1961, 29, 350-362.
- Gross, H.C. and Steats, A.W. Interest inventory items as attitude eliciting stimuli in classical conditioning: A test of the A-R-D theory. <u>Technical Report No. 4.</u> University of Hawaii, Office of Naval Research Contract N 000 14-67-A-0387-0007, September, 1969.

- Hall, G.F. Association of neutral objects with rewards: Persistence of effect upon verbal evaluation. <u>Journal of Verbal Learning and Verbal Behavior</u>, 1967, <u>6</u>, 291-294.
- Harbin, S.P. and Williams, J.E. Conditioning of color connotations. <u>Perceptual</u>
 and <u>Motor Skills</u>, 1966, 22, 217-218.
- Hare, R.D. Cognitive factors in transfer of meaning. <u>Psychological Reports</u>, 1964, 15, 199-206.
- Hare, R.D. Replication report: Cognitive factors in transfer of meaning. <u>Psycho-logical Reports</u>, 1965, <u>17</u>, 590.
- Reise, D.R. Affectual dynamics in simple sentences. <u>Journal of Personality and Social Psychology</u>, 1969, 11, 204-213.
- Insko, C.A. and Cakes, W.F. Awareness and the conditioning of attitudes. <u>Journal</u>
 of <u>Personslity and Social Psychology</u>, 1966, 4, 487-496.
- LeNy, J.P. Conditioning of meaning, semantic generalization and evaluative ratings in a complex situation. <u>Journal of Verbal Learning and Verbal Bahavior</u>, 1966, 5, 268-274.
- Haltzman, I., Raskin, P.C., Gould, J. and Johnson, O. Individual differences in the orienting reflex and semantic conditioning and generalization under different UCS intensities. Paper presented at Western Psychological Association, Honolulu, Hawaii, 1965.
- Miller, A.W., Jr. Conditioning connotative meaning. <u>Journal of General Psychology</u>, 1966, <u>75</u>, 319-328. (a)
- Miller, A.W., Jr. Relationships of awareness to verbal learning efficiency and meaning change. <u>Psychological Rejorts</u>, 1966, <u>19</u>, 875-883. (b)
- Miller, A.W., Jr. Awareness, verbal conditioning, and meaning conditioning.

 Psychological Reports, 1967, 21, 681-691.
- Miller, A.W., Jr. Heaning change and personality structurs. <u>Journal of General</u>

 <u>Psychology</u>, 1968, <u>79</u>, 271-277.



- Miller, A.W., Jr. and Baraness, W.D. Extinction, atimulus generalization and partial reinforcement for higher-order meaning conditioning. <u>Psychological Reports</u>, 1969, <u>24</u>, 288-290.
- Miller, A. and Clark, N. Counter conditioning, neutral conditioning, and extinction effects for the meaning of nonsense syllables. <u>Psychonomic Science</u>, 1969, <u>16</u>, 297-298.
- Miller, A., Gimpl, M., and McCrimmon, R. Extinction versus counterconditioning for the meaning of words and nonsense syllables. <u>Psychonomic Science</u>, 1969, 15, 92-93.
- Miller, A. and Kirwan, K. Word associates and meaning conditioning. <u>Psychological</u>
 <u>Reports</u>, 1966, <u>18</u>, 944-946.
- Minke, K.A. and Stalling, R.B. Long-term retention of conditioned attitudes.

 Technical Report No. 6, University of Hawaii, Office of Naval Research Contract, N 000 14-67-A-0387-0007, April 1970.
- Montmollin, G. de, and LeNy,, J.F. Conditionment d'attitude et conditionment verbal.

 Paychologie Francaise, 1962, 7, 67-74.
- Nunnally, J.C., Duchnowski, A.C., and Parker, R.K. Association of neutral objects with rewards: Effect on verbal evaluation and eye movements. <u>Journal of Experimental Child Psychology</u>, 1965, 2, 44-57.
- Osipow, S.N. The effects of veroal mediation on the modification of children's attitudes. <u>Journal of Educational Psychology</u>, 1960, <u>51</u>, 199-207.
- Page, N.M. Social psychology of a classical conditioning of attitudes experiment.

 <u>Journal of Personality and Social Psychology</u>, 1969, 11, 177-186.
- Pavio, A. Generalization of verbally conditioned meaning from symbol to referent.

 Canadian Journal of Psychology, 1964, 18, 146-155.
- Pecjak, V. and Smith, S. Influence of induced evaluations and of codability upon the cognitive interaction of colors and forms. In pimeo.



- Phelan, J.G. Hekmat, H., & Tang, T. Transfer of verbal conditioning to non-verbal behavior. Psychological Reports, 1967, 20, 979-986.
- Pihl, R.O. The reversal of the reinforcement value of a verbal stimulus. <u>Psycho-logical Record</u>, 1966, 16, 529-533.
- Pihl, R.O., & Greenspoon, J. The effect of amount of reinforcement on the formation of the reinforcing value of a verbal stimulus. <u>Canadian Journal of Psychology</u>, 1969, 23, 219-226.
- Pollio, H.R. Hord associations as a function of conditioned meaning. <u>Journal of Experimental Psychology</u>, 1963, <u>66</u>, 454-460.
- Rozelle, R.M. Meaning established by classical conditioning. <u>Psychological Reports</u>, 1968, 22, 889-895.
- Schutz, R.B. & Naumoff, H. An application of Mowrer's sentence conditioning peradigms in developing evaluative meaning. <u>Journal of Verbal Learning and Verbal</u> <u>Behavior</u>, 1964, 1, 459-462.
- Stasts, A.W. Verbal habit-families, concepts, and the operant conditioning of word classes. <u>Psychological Review</u>, 1961, <u>68</u>, 190-204.
- Stants, A.W. (with contributions by C.K. Steats) <u>Complex Human Behavior</u>. New York:

 Holt, Rinehart, and Winston, 1963.
- Stsats, A.W. (Ed.) Ruman learning. New York: Holt, Rinehart, and Winston, 1964a.
- Staate, A.W. Conditioned stimuli, conditioned reinforcers, and word meaning. In A.W. Staate (Ed.), <u>Human learning</u>. New York: Holt, Rinehart, and Winston, 1964, Pp. 205-213. (b)
- Staats, A.W. Attitude learning and human motivation. In A.W. Staats (Ed.), <u>Human</u>

 <u>learning</u>. New York: Holt, Rinehart, and Winston, 1964, Pp. 291-295. (c)
- Staats, A.W. Social interaction, attitude function, group cohesiveness, and social power. In A.W. Staats (Ed.), <u>Hur in learning</u>. New York: Holt, Rinehatt, and Winston, 1964, Pp. 329-36. (d)



- Staats, A.W. Emotions and images in language: A learning analysis of their acquisition and function. In K. Salzinger & S. Salzinger (Eds.), Research in verbal behavior and some neurophysiological implications. New York: Academic Press, 1967, Pp. 123-145. (a)
- Staats, A.W. Outline of an integrated learning theory of attitude formation and function. In M. Fishbein (Ed.), Readings in attitude theory and measurement.

 New York: Wiley, 1967, Pp. 373-376. (b)
- Staats, A.W. <u>Learning</u>, <u>language</u>, <u>and cognition</u>. New York: Holt, Rinehart, and Winston, 1968. (a)
- Steats, A.W. Social behaviorism and human motivation: Principles of the A R-D system. In A.G. Greenwald, T.C. Brock, & T.M. Ostrom (Eds.), <u>Psychological</u> foundations of attitudes. New York: Academic Press, 1968, Pp. 33-66. (b)
- Staats, A.W. Experimental dumand characteristics and the classical conditioning of attitudes. <u>Journal of Personality and Social Psychology</u>, 1969, <u>11</u>, 187-192.
- Stoats, A.W. Linguistic-mentalistic theory versus an explanatory S-R learning theory of language development. In D.T. Slobin (Ed.), The ontogenesis of grammer: Facts and theories. New York: Academic Press, in press.
- Staats, A.W. & Staats, C.K. Attitudes established by classical conditioning.

 <u>Journal of Abnormal and Social Psychology</u>, 1958, <u>57</u>, 37-40.
- Steats, A.W. & Steats, C.K. Effect of number of trials on the language conditioning of meaning. <u>Journal of General Psychology</u>, 1959, <u>61</u>, 211-223. (a)
- Staats, A.W. & Staats, C.K. Meaning and m: Correlated but separate. <u>Psychological</u>

 <u>Review</u>, 1959, 66, 136-144. (b)
- Steats, A.W., Steats, C.K. & Biggs, D.A. Meaning of verbal stimuli changed by conditioning. <u>American Journal of Psychology</u>, 1958, 71, 429-431.
- Stasts, A.W., Stasts, C.K. & Crawford, H.L. First order conditioning of meaning and the parallel conditioning of a GSR. <u>Journal of General Psychology</u>, 1962, 67 159-167.



- Staats, A.W., Staats, C.K., Finley, J.R. & Heard, W.G. Independent manipulation of meaning and m. <u>Journal of General Psychology</u>, 1963, <u>69</u>, 253-260.
- Steats, A.W., Steats, C.K., Finley, J.R. & Minke, K.A. Meaning established by classical conditioning controlling associates to the UCS. <u>Journal of General Psychology</u>, 1963, 69, 247-252.
- Staats, A.W., Staats, C.K. & Heard, W.G. Language conditioning of meaning to meaning using a semantic generalization paradigm. <u>Journal of Experimental Psychology</u>, 1959, <u>57</u>, 187-192.
- Staats, A.W., Staats, C.K. & Heard, W.G. Denotative meaning established by classical conditioning. <u>Journal of Experimental Psychology</u>, 1961, <u>61</u>, 300-303.
- Staats, A.W., Staats, C.K., Heard, W.G. & Nims, L.P. Replication report: Meaning established by classical conditioning. <u>Journal of Experimental Psychology</u>, 1959, <u>57</u>, 64.
- Staats, C.K. & Staats, A.W. Meaning established by classical conditioning.

 <u>Journal of Experimental Psychology</u>, 1957, 54, 74-80.
 - Staats, C.K., Staats, A.W. & Heard, W.G. Attitude development and ratio of reinforcement. Socionetry, 1960, 23, 338-350.
 - Stalling, R.B. Personality similarity and evaluative meaning as conditioners of attraction. <u>Journal of Personality and Social Psychology</u>, 1970, 14, 77-82.
 - Weiss, R.F., Chalupa, L.M., Gorman, B.S. & Goodman, N.H. Classical conditioning of attitudes as a function of number of persuasion trials and argument (UCS) strength. <u>Psychonomic Science</u>, 1968, <u>11</u>, 59-60.
 - Williams, J.E. Connotations of racial concepts and color names. <u>Journal of Personality and Social Psychology</u>, 1966, 3, 531-540.
 - Yavuz, H.S. & Bousfield, W.A. Recall of connotative meaning. <u>Psychological</u>
 <u>Reports</u>, 1959, <u>5</u>, 319-320.



1

- Yelen, D.R. Identification: The acquisition of evaluative connotations. <u>Journal</u>
 of <u>Personality and Social Psychology</u>, 1969, <u>12</u>, 328-332.
- Zanna, M.P., Kiesler, C.A. & Pilkonis, P.A. Positive and negative attitudinal affect established by classical conditioning, <u>Journal of Personslity and Social Psychology</u>, 1970, 14, 321-328.

ADDENDUM

Das, J.P. & Mitra, A.R. Persistence of acquired meaning in semantic conditioning.

<u>Psychonomic Science</u>, 1965, 3, 83-84.



DISTRIBUTION LIST

NAVY

Chief of Naval Research Code 453 Department of the Navy Washington, D. C. 20360

Director ONR Branch Office 495 Summer Street Boston, Massachusetts 02210

Director ONR Branch Office 219 South Dearborn Street Chicago, Illinois 60604

Director ONR Branch Office 1030 East Green Street Pasadena, California 91101

Contract Administrator Southeastern Area Office of Naval Research 2110 G Street, N.W. Washington, D. G. 20037

Director Naval Research Laboratory Attn: Library Code 2029 (ONRL) Washington, D. C. 20390

Office of Naval Research Area Office 207 West Summer Street New York, New York 10011

Office of Naval Research Area Office 1076 Mission Street San Francisco, California 94103

Director
Naval Research Laboratory
Washington, D. C. 20390
Attn: Technical Information
Division

Defense Documentation Center Cameron Station, Building 5 5010 Duke Street Alexandria, Virginia 22314 Superintendent Naval Postgraduate School Monterey, California 93940 Attn: Code 2124

Head, Psychology Branch Neuropsychiatric Service U. S. Naval Hospital Oakland, California 94627

Commanding Officer Service School Command U. S. Naval Training Center San Diego, California 92133

Commanding Officer Naval Personnel Research Activity San Diego, California 92152

Officer in Charge Naval Medical Neuropsychiatric Research Unit San Diego, Californic 92152

Commanding Officer Naval Air Technical Training Center Jacksonville, Florida 32213

Dr. James J. Regen Naval Training Device Center Orlando, Florida 32813

Chief, Aviation Psychology Division Naval Aerospace Medical Institute Naval Aerospace Medical Center Pensacola, Florida 32512

Chief, Naval Air Reserve Training Naval Air Station Box 1 Glenview, Illinois 60026

Dr. Gregory J. Mann Naval Science Department U. S. Naval Academy Annapolis, Maryland 21402

Technical Services Division National Library of Medicine 8600 Rockville Pike Bethesda, Maryland 20014



Behavioral Sciences Department Naval Medical Research Institute National Naval Medical Center Bethesda, Maryland 20014 Attn: Dr. W. W. Kaythorn, Director

Commanding Officer
Naval Medical Field Research
Laboratory
Camp Lejeune, North Carolina 28542

Director
Aerospace Crew Equiptment Department
Naval Air Development Center,
Johnsville
Warminster, Pennsylvania 13974

Chief, Naval Air Technical Training Naval Air Station Memphis, Tennessee 38115

Commander
Operational Test and Evaluation
Force
U. S. Naval Base
Norfolk, Virginia 23511

Office of Civilian Manpower Management Department of the Navy Washington, D. C. 20350 Attn: Code 023

Chief of Naval Operations, Op-37 Fleet Readiness & Training Division Washington, D. C. 20350

Chief of Naval Operations, Op-07TL Department of the Navy Washington, D C. 20350

CAPT. J. E. Rasmussen, MSC, USN Chief of Naval Material (MAT 031M) Room 1323, Main Navy Building Washington, D. C. 20360

Chief Bureau of Medicine and Surgery Code 513 washington, D. C. 20360 Technical Library
Bureau of Naval Personnel (Pers-11b)
Department of the Navy
Washington, D. C. 20370

Director Personnel Research Laboratory Washington Navy Yard, Building 200 Washington, D. C. 20390 Attn: Library

Commander, Naval Air Systems Command Navy Department ATR-4133 Washington, D. C. 20360

ARMY

Human Resources Research Office Division #6, Aviation Post Office Box 428 Fort Rucker, Alabama 36360

Human Resources Research Office Division #3, Recruit Training Post Office Box 5787 Presidio of Monterey, California Attn: Library 93940

Human Resources Research Office Division #4, Infantry Post Office Box 2086 Fort Benning, Georgia 31905

Department of the Army
U. S. Army Adjutant General School
Fort Benjamin Harrison, Indiana
Att: AGCS-EA 46216

Director of Research U. S. Army Armor Human Research Unit Fort Knox, Kentucky 40121 Attn: Library

Dr. George S. Harker
Director, Experimental Psychology
Division
U. S. Army Medical Research Lab
Fort Knox, Kentucky 40121

Research Analysis Corporation McLean, Virginia 22101 Attn: Library



Human Resources Research Office Division #5, Air Defense Post Office Box 6021 Fort Bliss, Texas 79916

1.45

Human Resources Research Office Division #1, Systems Operations 300 North Washington Street Alexandria, Virginia 22314

Director Human Resources Research Office The George Washington University 300 North Washington Street Alexandria, Virginia 22314

Chief Training and Development Division Office of Civilian Personnel Department of the Army Washington, D. C 20310

U. S. Army Behavioral Science Research Laboratory Washington, D. C. 20315

Walter Reed Army Institute of Research Walter Reed Army Medical Center Washington, D. C. 20012

Behavioral Sciences Division Office of Chief of Research and Development Department of the Army Washington, D. C. 20310

AIR FORCE

Director Air University Library Maxwell Air Force Base Alabama 36112 Attn: AUL-8110

Cadet Registrar (CRE) U. S. Air Force Academy Colorado 80340

Headquarters, ESD ESVPT L. G. Hanscom Field Bedford, Masaachusetts 01731 Attn: Dr. Mayer AFHRL (HRT/Dr. G A. Eckstrand) Wright-Patterson Air Force Base Ohio 45433

Commandant
U. S. Air Force School of Aerospace
Medicine
Brooks Air Force Base, Texas 78235
Attn: Aeromedical Library (SMSDL)

6570th Personnel Research Laboratory Aerospace Medical Division Lackland Air Force Base San Antonio, Texas -73236

AFOSR (SRLB) 1400 Wilson Boulevard Arlington, Virginia 22209

Headquarters, U. S. Air: Force Chief, Analysis Division (AFPDPL) Washington, D. C. 20330

Headquarters, U. S. Air Force Washington, D. C. 20330 Attn: AFPTRTB

Research Psychologist SCBB, Headquarters Air Force Systems Command Andrews Air Force Base Washington, D. C. 20331

MISCELLANEOUS

Mr. Joseph J. Cowan Chief, Personnel Research Branch U. S. Coast Guard Headquarters PO - 1, Station 3-12 1300 E Street, N. W. Washington, D. C. 20226

Executive Officer American Psychological Association 1200 Seventeenth Street, N. W. Washington, D. C. 20036

Dr. Lee J. Cronbach School of Education Stanford University Stanford, California 94305



į

Dr. Phillip H. DuBois Department of Psychology Washington University Lindell and Skinker Boulevards St. Louis, Missouri 63130

3.

Dr. John C. Flanagan American Institutes for Research Post Office Box 1113 Palo Alto, California 94302

Dr. Frank Friedlander
Division of Organizational
Sciences
Case Institute of Technology
Cleveland, Ohio 10900

Dr. Robert Glaser
Learning Research and Development
Center
University of Pittsburgh
Pittsburgh, Pennsylvania 15213

Dr. Bert Green
Department of Psychology
Carnegie-Mellon University
Pittsburgh, Pennsylvania 15213

Dr. J. P. Guilford University of Southern California 3551 University Avenue Los Angeles, California 90007

Dr. Harold Gullikson Department of Psychology Princeton University Princeton, New Jersey 00540

Dr. M. D. Havron Human Sciences Research, Inc. Westgate Industrial Park 7710 Old Springhouse Road McLean, Virginia 22101

Dr. Albert E. Hickey
Entelek, Incorporated
42 Pleasant Street
Newburyport, Massachusetts 01950

Dr. Howard H. Kendler Department of Psychology University of California Santa Barbara, California 93106 Dr. Robert R. Mackie Human Factors Research, Inc. 6700 Cortona Drive Santa Barbara Research Park Goleta, California 93107

Dr. Henry S. Odbert National Science Foundation 1300 G Street, N. W. Washington, D. C. 20550

Dr. Leo J. Postman Institute of Human Learning University of California 22/1 College Avenue Berkeley, California 94720

Dr. Joseph W. Rigney Electronics Personnel Research Group University of Southern California University Park Los Angeles, California 90007

Dr. Arthur I. Siegel Applied Psychological Services Science Center 404 East Lancaster Avenue Wayne, Pennsylvania 19007

Dr. Arthur W. Staats Department of Psychology University of Hawaii Honolulu, Hawaii 96822

Dr. Lawrence M. Stolurow Harvard Computing Center & Appian Way Cambridge, Massachusetts 02138

Dr. Edward D. Lambe, Director Instructional Resources Center State University of New York Stony Brook, New York 11790

Dr. Ledyard R. Tucker Department of Psychology University of Illinois Urbana, Illinois 61801

Dr. Benton J. Underwood Department of Psychology Northwestern University Evanston, Illinois 60201



POOR ORIGINAL COPY-BEST AVAILABLE AT TIME FILMED

Mr. Halim Onkaptan, Chief Human Factors Martin Company Orlando, Florida 32 09

Dr. Alvin E. Goins, Executive
Secretary
Personality and Cognition
Research Review Committee
Behavioral Sciences Research Branch
National Institute of Mental Health
5/5/4 Wisconsin Avenue, Room 10A11
Chevy Chase, Maryland 20203

Headquarters USAF (AFPTRD)
Training Devices and Instructional
Technology Division
Washington, D. C. 20230

Education and Training Sciences
Department
Naval Medical Research Institute
Building 142
National Naval Medical Center
Bethesda, Maryland 2001/

Dr. Mats Bjorkman University of Umea Department of Psychology Umea 6, Sweden

Dr. Marshall J Farr
Assistant Director, Engineering
Psychology Program
Office of Naval Research (Code 455)
Washington, D. C. 20360

Mr. Joseph B. Blankenheim NAVELEX 0474 Munitions Building, Rm. 3721 Washington, D. C. 203(0

Technical Information Exchange Center for Computor Sciences and Technology National Bureau of Standards Washington, D. C. 20234

Technical Library
U. S. Naval Weapons Laboratory
Dahlgren, Virginia 2244

Technical Library Naval Training Device Center Orlando, Florida 32213 Technical Library Naval Ship Systems Command Main Mavy Building, Rm. 1532 Washington, D. C. 20360

Technical Library
Naval Ordnance Station
Indian Head, Maryland 20040

Haval Ship Engineering Center Philadelphia Division Technical Library Philadelphia, Pennsylvania 19112

Library, Code 0212 Naval Postgraduate School Monterey, California 939/0

Technical Reference Library Naval Medical Research Institute National Naval Medical Center Bethesda, Maryland 2001

Technical Library Naval Ordinance Station Louisville, Kentucky 4021/

Library Naval Electronics Laboratory Center San Diego, California 92152

Technical Library Naval Undersea Warfare Center 1202 E. Foothill Boulevard Pasadena, California 91107

AFHRL (HRTT/Dr. Ross L. Morgan) Wright-Patterson Air Force Base Ohio 45423

AFHRL (HRO/Dr. Meyer) Brooks Air Force Base Texas 70235

Mr. Michael MacDonald-Ross International Training and Education Company Limited ITEC House 29-20 Ely Place London ECl, ENGLAND

CDR H. J. Connery, USN Scientific Advisory Team (Code 71) Staff, COMASWFORLANT Norfolk, Virginia 23511



ERIC Clearinghouse Vocational and Technical Education Ohio State University Columbus, Ohio 43212 ERIC Clearinghouse Educational Media and Technology Stanford University Stanford, California



Security Classification DOCUMENT CONTR	ROL DATA - R	k D			
Security classification of title, body of abstract and indexing a	nnotetion must be e				
GIGHATING ACTIVITY (Corporate author)		Unclassified			
Dr. Arthur W. Staats					
Department of Psychology, University of Hawaii		Zb. GROUP			
Classical Conditioning of Emotional Respondent Effects on Social Behavior: A Biblio		ng, Attitud	les, Values, Interests)		
4. DESCRIPTIVE NOTES (Type of report and inclusive dates)					
Arthur W. Staats and Carl G. Carlson					
April 1970	70. TOTAL NO. 01	PAGES	NO OF REFS		
N 00014-67-A-0387-0007	98. ORIGINATOR'S REPORT NUMBER(5)				
b. PROJECT NO. NR 154-290	Technical	Report Num	aber 5		
c. '	9b. OTHER REPORT NOISI (Any other numbers that may be assigned				
	this repost)				
10. DISTRIBUTION STATEMENT This document has been					
purpose of the United States Government.	Personnel & Training Research Programs Psychological Sciences Division, Office of Naval Research, Washington, D.C. 20360				
12. ABSTRACT In 1955 Staats began experimental	1 .	•			
al responses or evaluative responses, evaluative responses, evaluative responses that many stimuli elicit emotional responses and those stimuli also come to elicit an emotion elicit an emotional response the word can sestimulus with which it is paired. Following project that included a series of studies to ditioning of emotional responses as well as words. A number of experiments were conducted that emotional responses could be conditioned age elicit emotional responses that could be of research has been elaborated by a number criticized and supported by other studies. Sinvolved and extended it to various areas of constitute a framework within which to consitint a framework within which to consitint present bibliography thus lists the varianalyses to April 1970. (Additional extension have been mide by Byrne and Lott and Lott. ing manipulations have not been included her	ative meaning to can be classed to condition of other instants has a study. The der significant into socious experiments experiments into socious experiments experiments into socious experiments experiments experiments experiments experiments exp	ng, attitudes is a cally of a condition and his as and that maked to other theory and theory and all interactions of the conditions and the cantal studical interactions of the contal studical interactions of the contact interactions of th	les, values and so on- conditioned to words. Itiguously paired with once a word comes to conality to any other formulated a long-term it-order classical con- ing of responses to isociates that showed my words in our lang- stimuli. This line s, and it has been led the learning theory ithe various studies is of human behavior. les and theoretical etion and attraction		

Security Classification						
14. XEY WORDS	ROLE	K A WT	ROLE	∢,B ₩T	ROLE	WT
A-R-D theory						
attitude rating						
attitudes			i I	•		,
classical conditioning						
emotional response			l			
evaluative meaning						, I
human learning and conditioning						
interpersonal attraction						
pleasant-unpleasant scale						İ
reinforcing stimuli						
reinforcing value						
semantic component		ļ				
social interaction			'			
social learning						
			ł			
			;			
÷						
1						
•						
						}
•						
				<i>!</i>		
]			
		<u> </u>			_	L

FORM 1473 (BACK)
ERIC 2)

(2) Security Classification