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Approaches to the Taxonomy of Social Situations

Task or Situation

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INTRODUCTION

The organization of this symposium suggests four possible strategies or approaches to the dimensional structure of environmental variables that account for behavioral variance in social situations. My assignment is the task situation. I have endeavored to comply, at least minimally, with the obligation implied in the title. However, I have elected to follow the approach that I have been developing for the past several years and interpret the task situation broadly, in terms of a comprehensive taxonomy of all environmental variables involved in the ecologic transactions of organisms and environments.

This presentation is divided into two parts, theoretical and empirical. The theoretical section will attempt to justify a programmatic proposal for multivariate studies of species' behavior repertories and environmental habitats as a necessary step toward a systematic formulation of behavior theory in phylogenetic perspective. The implications of this position are

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believed to be far reaching. They apply to the immediate problems of social psychology, but are also relevant to the science of psychology in its broadest frame of reference. The empirical section will present the results of some current research carried out with the support of the Group Psychology Branch of the Office of Naval Research. These data are more directly related to my assigned topic.

PROPOSALS FOR A BEHAVIORAL ECOLOGY

The assumptions on which the following proposals for an ecologic conception of behavioral science are based have been expounded elsewhere (Sells, 1962, 1963a) and will be stated here as briefly as possible in summary form.

First is the principle of determinism, which implies lawfulness of behavioral phenomena and the requirement that scientific investigations be focused on the formulation of invariant, general functional relations for significant behaviors at all levels. Coupled with this assumption is the second, that behavior is multipally determined, implying that invariance can only be achieved in a multivariate, in fact omnivariate, frame of reference. Acceptance of these assumptions sets the task of the behavioral scientist clearly to seek to account for one hundred per cent of the variance of behavior. And to do so it seems imperative that multivariate models are required.

The third major assumption is the principle of interaction which conceives behavior as a function of the interplay of inner (organism) and outer (environment) forces, each presumed to represent a complex universe of interrelated variables. There are, as Murphy (1947) has clearly pointed out, many difficulties with this arbitrary dichotomy, particularly at the boundaries of organism and environment. Nevertheless, it is crucial to recognize a host of external factors which

structure the topography of the behavioral field with measurable effects analogous to up-hills, down-hills, headwinds, tail winds, cross currents, obstructions, one-way streets, maximum and minimum speeds, dead ends, and the like.

The justification for dimensional analysis of the environment as a major task for psychological research is strongly supported by the three foregoing assumptions. But environmental taxonomic research should not be considered as an alternative to the study of individual differences and interaction processes. The unfinished business of psychology is vast, indeed, and perhaps we are adding to it. If so, our position is that a taxonomy of environmental variables, in conjunction with a more complete taxonomy of individual differences than is now available (Guilford, 1959, Sells, 1962), would enrich the study of interaction processes, which is the principal concern of the science of psychology.

However, the argument in support of environmental research has another major aspect. It is not just an unspecified environment, "out there," that is of vital importance to psychology, but rather an organized and, hopefully, identifiable environment that has ecologic significance to each biological organism. Elsewhere (Sells, 1963b) the writer has expounded the view that the principle of interaction is an adaptive process, rather than a random encounter between inner and outer forces. Interaction involves a polarized accommodation of

organism to environment in all biological functioning, of which molar behavior is one manifestation.

Biological adaptation imposes a phylogenetic perspective on behavioral science, but is observable in non-hereditary mechanisms as well, such as immunities and tolerances, and also tribal customs and practices that have been maintained over many generations under environmental conditions favoring their continuation. The interaction process constantly goes on simultaneously and interrelatedly at several levels of organismic functioning and at higher phylogenetic levels may truly be called a biosocial process. This complex process has been elegantly and forcefully demonstrated in Piaget's monumental developmental research, which Hunt (1961) has systematically enhanced in his constructive review. Piaget's experimental observations indicate that the behavior and thought structures comprising intelligence change continually as a consequence of the accommodation and assimilation involved in the maturing child's encounters with the environment. Hunt interpreted these processes as showing that experience, defined as the organism's cumulative encounters with particular environments, continually builds into the developing organism a hierarchy of operations for processing information and for coping with new circumstances encountered.

Thus the environment plays another role in the determination of behavior, that of the treadmill on which it is performed. Variations of the environment, demanding accommodation, result in the progressive

modification, or programming, of inherited automic and behavioral structures that are internalized and can be identified in the universe of individual differences. The continuing stream of life, from the first primitive organism to the most recent and advanced, reflects a continuing transaction between organisms and environments. This process is characterized by both long-term trends, reflecting natural selection in the evolutionary and genetic aspects, and short-term adjustments, including ontogenetic adaptations, modifications by learning, and transient adjustments. All of these together collectively contribute to the identification of the particular patterns of environmental variables that define the ecologic niches of individuals and species.

The behavior repertoire of each individual and species thus reflects a cumulative development in which adaptation to the ecologic niche has been a historic determining feature. This behavior repertoire was not only fashioned in relation to a particular set of environmental variables, but has meaning historically only as a means of survival and earning a living in that particular environmental setting. Hence it appears appropriate to conclude that the behaviors related to survival and typical functioning in the ecologic niche are the behaviors with which psychology must be primarily concerned. In the frame of reference of this discussion, these are the <u>significant</u> behaviors defining the universe of individual difference variables to be specified in the multivariate behavioral

interaction equations. They are specific to each species and comparable across species only in relation to similarity of ecologic adaptation patterns.

For every species of living organisms the particular set of environmental variables identifying the ecologic niche and, to use Hunt's (1961) facile phraseology, which represents the naturally selected match between circumstances and species schema, similarly identifies the universes of environmental variables that are of primary scientific interest.

The implications of this discussion for the definition and tasks of the science of psychology could be elaborated at some length. However, with reference to our present task, a rationale and certain methodological principles for the taxonomic study of the environment of man can be indicated.

The rationale does not appear to require further elaboration, although it has been expressed succinctly in Keller Breland's remark, that a psychological experiment should always be an ecologic surrogate. Since man is not a homogeneous species, but reflects an extensive geographic distribution with infinite variation in morphology, culture, and social organization, the analysis of human ecology and the taxonomy of his particular environmental universe must be infinitely more complex than ever for some of his lower mammalian forebears. Nevertheless, the strategic importance of the dimensionalization of the universe of environmental variables accounting for variance in behavior appears to be established.

With regard to methodological principles, the following are suggested:

1. Ecologic, historic frame of reference. The initial strategy in approaching the problem is to understand how the species developed, including the problems encountered and solutions achieved in coping with its particular pattern of environmental conditions. In infrahuman forms, this historical survey should reveal the phylogenetic position of the species and thus permit an understanding of the old and new components of the behavior repertoire. A general appreciation of both behavior repertoire and environmental pattern is thus prescribed, with an indication of salient aspects determined by the ecologic exchange.

2. Formulation of environmental variables by behavioral effects. Environmental factors have little behavioral interest except in terms of their behavioral effects, as facilitators, inhibitors, and influencing agents. It is essential that environmental variables be described and measured objectively rather than subjectively (either anthropomorphically or phenomenologically). For example, threatening bosses or harsh parents should be recorded in terms of their behavior rather than in terms of the subjective impressions of a subordinate or child. Similarly, temperatures should be recorded by thermometer readings rather than in terms of subjective impressions of heat. With this qualification of objectivity, I would attempt a Lewinian mapping of the behavior field, seeking to cluster or represent factorially environmental objects, conditions,

persons, symbols, and the like, which have, individually or in configural patterns, predictable consequences for behavior. The types of consequences that appear most meaningful would be dependent on those behaviors recognized in a survey of the genetic and adaptive history of the species or human group studied. In human studies variation may be expected by age, sex, climate, culture, and perhaps other factors.

3. Initial formulation of the universe of environmental variables. It is assumed that the environment is composed of a myriad of physical and social stimuli that influence behavior. Regardless of the specific aspects selected as most relevant in any single study, it is methodologically important to formulate a universe of environmental variables as a point of departure. An example of such a universe has been presented elsewhere by the writer (1963 a, p. 9) and is shown here in the Appendix. The items listed here are not in measurement form; this is an important next step that needs to be worked out and presents problems of varying difficulty in different parts of the list. However, a list of this kind is believed to be a necessary point of departure. With reference to the items in the list, three additional points must also be emphasized:

a. No item should be prejudged as to its relevance. It is entirely possible that exploratory empirical studies will reveal significant environmental influences that even experienced observers may have overlocked. Notwithstanding the initial hypotheses concerning the salience of one or another sample of variables in the approach to

a particular group, it may be desirable to think of including virtually the entire list, except those items that obviously do not apply, as long as a goal for accounting for the entire variance is accepted.

b. Individual items should be regarded as analogous to items on dimensional scales, with factor loadings indicating their salience; the significant environmental variables will be the factors. Items loaded on various factors may be regarded as reflecting organization of environmental influences on behavior.

c. In order to interpret cluster and factor structure in behavioral terms, criterion variables, representing dependent behaviors in the experimental design, must be included in the correlation matrices.

The research program implied by this discussion is monumental, to say the least. Nevertheless it is believed that the direction of psychological research indicated is sound and that this formulation of the task is realistic.

RESEARCH TOWARD A TAXONOMY OF SITUATIONAL VARIABLES

The research to be reported briefly at this time is frankly exploratory and methodological. Before undertaking any work on the grand scale implied in the taxonomic outline, we have attempted several modest pilot studies, one of which is the subject of the following report.

This research involves a survey of family background social and demographic variables and items, based on the outline, which reflect personal, religious, educational, recreational, and general living arrangements and college activities of a sample of 286 undergraduate students of both sexes at a university in north central Texas which draws a majority of its students from Texas and the Southwest. These items were coded and included in a correlation matrix along with scores on personality and interest tests and data reflecting academic achievement, career choice, and group affiliation and participation. There were 186 variables in the matrix.

At this time we have completed only a cluster analysis of 120 non-linearly dependent variables of the original 186. Further analysis is in progress, but the results are not available to report. Twenty-two per cent of the correlation coefficients in the total matrix were significant at the .05 level or higher, but many of the coefficients were below .2. Nevertheless, 23 more or less meaningful clusters of 3 or more variables were obtained. I propose to present 12 of these, which are composed primarily of situational variables, for the purpose of illustrating this methodological approach.

It may be noted that different combinations of background, living arrangements, school and social status, and the like identify particular patterns of environmental constraint and influence within a social group. These have some of the characteristics of social role, and indeed, may

provide a method of characterizing roles. However, they are broader and more pervasive than roles. The particular strategy of the approach is first, to identify and replicate such patterns with as much generality as possible, to determine their interrelations, and to survey their effects on significant dependent variables.

The twelve clusters have not been checked against a factor analysis of the same matrix, nor have they been replicated. They are believed to be of interest because of the nature of the groupings and the constraints and influences they imply which can be formulated and tested in terms of predictable effects on dependent variables which are already available for the sample.

Let us examine briefly some selected clusters which indicate groupings of different variables that imply various constraints on the behavior of college students. The twelve clusters to be discussed are shown below.

Cluster 1 contains the following four variables:

91. major or minor subject Religion vs. not Religion,
101. intended career Religious vs. not Religious,
115. subscribers to Religious magazines vs. does not subscribe,
97. receives scholarship vs. no scholarship.

This cluster identifies a core of religious career orientation and indicates that in the particular sub-culture described by the sample, students with orientation are, to a degree, likely to be scholarship recipients and to be attending college under constraints imposed by the scholarship requirements.

Further inquiry is in progress concerning the effects of such constraints and correlates of this orientation.

Cluster 2 consists of the following nine variables:

8. year of graduating class,
42. number of semester-hours of credit earned,
1. age (years),
10. number of years of college attendance,
96. no allowance received (from parents) vs. allowance received,
77. amount of personal income (per year),
84. married vs. single,
15. number of hours per month of work on job while at school,
40. total time spent in work and other group activities.

This cluster groups variables reflecting student characteristics of maturity, marital responsibility, and financial independence, predominantly accompanied by working while attending school. It suggests another patterning of environmental constraints for a particular set of students.

Cluster 4 includes eight variables:

2. height,
33. weight,
83. male vs. female,
67. Cattell 16 PF Factor N, sophisticated, polished,
14. total number of jobs held,
59. Cattell 16 PF Factor C, mature, calm,
76. low academic achievement (grade point average).

The pattern revealed here is that of the polished, self-possessed man-about-campus, including poor grades. Neither varsity athletics nor fraternity membership are included.

Cluster 7 contains the following four variables:

34. number of years of schooling of father,
38. composite of educational level of family,
35. number of years of schooling of mother,
36. parents' income.

Individuals scoring high on this cluster come from educated, upper income level families and should reflect influences of this background.

Cluster 9 is composed of the following five variables:

17. time required to travel to and from school,
104. off-campus residence vs. on campus,
18. number of household chores performed,
19. number of appliances in residence,
108. does not travel to visit family vs. does travel.

This cluster identifies the town student who lives at home, participates in family life, but fits more closely the dormitory student pattern, below, in the opposite direction of sign. Variable 110, which involves ownership or use of a car, is positively related to this cluster.

Cluster 13 contains 4 variables, as follows:

120. has no children,
84. single vs. married,
98. has no bank account vs. has bank account,
27. number of hours of sleep per night.

This pattern suggests a youthful, simple, carefree situation, with financial dependency.

Cluster 14 contains the following 5 variables.

90. no interruption of education vs. interruption,
102. not served in Armed Forces vs. served in Armed Forces,
95. no interruption due to illness vs. interruption,
93. no interruption due to financial difficulties vs. interruption,
113. never outside of continental U.S. vs. outside.

This cluster identifies students who have not had military service or travelled abroad and have continued their education without interruption.

Cluster 19 includes three variables:

6. population of town where high school is located,
75. number of students in high school graduating class,
7. age at graduation.

This pattern suggests that students from larger communities, with large high school classes are older at graduation. It may differentiate urban and rural backgrounds.

Cluster 21 with three variables includes:

112. does not smoke vs. smokes,
56. Eysenck scale, tender minded vs. tough minded,
21. frequency of church attendance per month.

This pattern relates church attendance to smoking; students who attend church frequently do not smoke, and are more tender- than tough-minded on the Eysenck scale.

Cluster 22 also contains 3 variables:

43. overall grade point average,
58. Cattell 16 PF Factor B, bright, intelligent,
9. number of class hours carried in 1962.

This is clearly a pattern of academic ability and achievement. Incidentally, it gives further data on the validity of Cattell's Factor B, with a significant correlation of .28 with grade point average.

Cluster 23 gives some incidental support to the salubrious climate of Texas. Its three variables are:

4. years lived in home town,
89. live in Texas vs. do not live in Texas,
88. no diseases experienced vs. diseases experienced.

Cluster 26 gives a good picture of the dormitory dweller. It contains the following 6 variables:

25. number of letters written per week,
109. meals eaten out or in school cafeteria vs. at home,
105. no privacy for study vs. privacy,
114. does not read newspapers vs. reads newspapers,
110. does not have a car vs. has car,
85. Protestant religion vs. other.

In summary, twelve clusters based predominantly on environmental variables, have been described, which identify the student sample in terms of situational complexes implying distinctive influences and constraints on behavior. These are:

1. religious career orientation, with scholarship support
2. mature, married, financially responsible, working
4. self-possessed, socially polished, man-about-campus, with poor grades
7. educated, upper income family background
9. town student; lives with family at home, drives to school
13. single, carefree youth, financially dependent
14. no military service, no foreign travel, continuous school attendance
19. urban vs. rural background
21. church attendance, non-smoking, tender-minded
22. high intellectual ability and academic achievement
23. native Texan, healthy
26. dormitory student in the standard pattern of the culture

One of the advantages of this type of analysis is that it brings together variables that can be recognized as reflecting common influence, but which might not be considered otherwise, such as military service and foreign travel, and the various detailed listings in some of the clusters. The next steps, assuming replication of these groupings, will be to investigate their effects on college grades, choices of major

subjects, career choices, organizational memberships, and leadership positions achieved. In another part of this study, these variables will be analyzed in relation to group profiles on Hemphill's Group Dimensions Description Questionnaire for the memberships indicated.

OUTLINE OF BASIC ASPECTS OF THE TOTAL STIMULUS SITUATION

100.000	Natural aspects of the environment
110.000	Gravity
120.000	Weather
121.000	Temperature
122.000	Humidity
123.000	Oxygen
124.000	Atmospheric pressure
125.000	Climate
126.000	Atmospheric changes (storms, rain, showers, hurricanes, typhoons)
130.000	Terrain
131.000	Rivers
132.000	Lakes
133.000	Mountains
134.000	Valleys
135.000	Deserts
136.000	Altitude
137.000	Erosion
138.000	Stability (earthquakes)
140.000	Natural resources
141.000	Sources of food
141.100	Fish and game
141.200	Vegetation
141.300	Crops
142.000	Sources of shelter
142.100	Wood
142.200	Minerals
142.300	Rocks
143.000	Sources of clothing
144.000	Minerals
145.000	Timber
200.000	Man-made aspects of the environment
210.000	Social organization (a structuring or grouping of any sort in which there is a systematic differentiation of parts or functions)
211.000	Formal vs. informal
212.000	Group vs. collective
213.000	Incorporated vs. unincorporated
220.000	Social institutions
221.000	Family
222.000	Religion
223.000	Language

224.000 Music
225.000 Law
226.000 Education
227.000 Politics
228.000 Government
229.000 Art
230.000 Transitory social norms (a standard, pattern, or representative value for a group)
300.000 Description of task-problem, situation, and setting
310.000 Factors defined by the focal task situation
311.000 Area and level of knowledge and skills required
312.000 Hazards and risks involved
313.000 Novelty of situation in relation to prior experiences
314.000 Procedures permitted
315.000 Information required and available
316.000 Number of participants present or available
317.000 Material and facilities required and available
318.000 Degree of personal contact involved
319.000 Role expectations of other persons concerning the individual
320.000 Factors defined by the individual's relation to the situation
321.000 Degree of freedom vs. restriction in group activities
322.000 Degree of competition vs. cooperation required
323.000 Degree of friendliness vs. hostility required
324.000 Status hierarchy position required
330.000 Factors defined by other persons in the situation
331.000 Social and cultural normative characteristics and homogeneity of participants in terms of backgrounds
331.100 Background characteristics
331.110 Age
331.120 Sex
331.130 Social
331.140 Economic
331.200 Skill characteristics
331.210 Abilities
331.220 Experiences
331.230 Training
331.300 Motivation
332.000 Relationship of persons in situation
332.100 New or previous acquaintances
332.200 Pre-existing relationships
340.000 Factors defined by situational setting
341.000 Physical restraints
342.000 Remoteness

342.100 Communication
342.200 Traveling conditions
343.000 Physical characteristics of site location
344.000 Comfort and satisfaction or habitability
400.000 External reference characteristics of the individual
410.000 Biologically defined factors
411.000 Factors defined by sex
412.000 Factors defined by age
413.000 Factors defined by height
414.000 Factors defined by weight
415.000 Factors defined by physique
416.000 Factors defined by physical abnormalities or injuries
417.000 Factors defined by race
420.000 Socially defined factors
421.000 Factors defined by education
422.000 Factors defined by marital status
422.100 Duties
422.200 Responsibilities
423.000 Factors defined by individual's special duties, responsibilities, and commitments
424.000 Factors defined by citizenship
425.000 Factors defined by legal restraints, military service, etc.
426.000 Factors defined by geographic position
426.100 Rural vs. urban
426.200 National
426.300 Personal habits
427.000 Socioeconomic status
427.100 Social status
427.200 Economic status
427.210 Income
427.220 Residence
427.230 Transportation
427.240 Occupational classification
427.250 Debts
427.260 Savings
427.270 Employment status
427.280 Number of dependents
427.290 Education
428.000 Background factors
428.100 Family group
428.110 Social status of family group
428.120 Role in family group
428.130 Status in family group

428.140	Parents
428.141	Legal status
428.142	Age
428.143	Religion
428.144	Health
428.145	Language
428.146	Education
428.147	Parents' group memberships
428.150	Siblings
428.151	Age and sex
428.152	Ordinal position
428.153	Type (adopted, stepchildren)
428.200	Primary or marriage group
428.210	Social status
428.220	Family role
428.230	Status in family
428.240	Legal status
428.250	Education
428.260	Religion
428.270	Language
428.280	Children
428.281	Number
428.282	Age and ordinal position
428.283	Sex
428.284	Type
429.000	Group memberships
429.100	Number of group memberships
429.200	Type of groups
429.300	Social status of groups
429.400	Social status in groups
429.500	Roles in groups
429.600	Group structures (formal vs. informal, group goals, membership requirements, control of memberships)
500.000	Individuals performing relative to others
510.000	Togetherness situations
520.000	Group situation
521.000	Intragroup
521.100	Factors defined by required pattern
521.110	Formal group structure
521.111	Group goals
521.1111	Definiteness
521.1112	Clarity
521.1113	Relation to basic objectives
521.1114	Relation to persons and facilities
521.1115	What the goals are

521.112	Membership requirements
521.1121	Regulations concerning demographic characteristics (age, sex, race, etc.)
521.1122	Regulations concerning achievement, experience, training, academic level, etc.
521.113	Group's control of its members
521.1131	Degree to which members may express their opinion
521.1132	Formal regulations and SOP's regulating conduct, work, and living arrangements
521.1133	Regulations of group procedures
521.11331	Degree to which the group is formal
521.11332	Regulations covering meetings
521.11333	Staffing of the group
521.11334	Regulations to guide activities
521.11335	Regulations concerning group participation
521.113351	Regulations concerning active participation
521.113352	Regulations concerning amount of time in participation
521.113353	Regulations concerning daily contact
521.113354	Regulations concerning absence from group
521.114	Group's social status
521.1141	Degree of dependency on other groups
521.1142	Degree of cooperation with other groups
521.1143	Other status factors
521.115	Regulations concerning members' social status in group
521.120	Factors defined by responsibility patterns of formal roles
521.121	Role responsibility for what, to whom, from whom
521.122	Role power, privileges, prestige
521.123	Ability requirements
521.130	Factors defined by group in relation to site
521.131	Space required
521.132	Site location requirements
521.133	Facilities required
521.200	Factors defined by informal operating pattern
521.210	Informal group structure
521.211	Group goals

521.2111	Definiteness
521.2112	Clarity
521.2113	Relation to basic objectives
521.2114	Relation to persons and facilities
521.2115	What the goals are
521.212	Group membership requirements
521.2121	Regulations concerning demographic characteristics
521.2122	Regulations concerning achievement
521.2123	Regulations concerning social class
521.213	Group's control of its members
521.2131	Degree to which members express their opinions
521.2132	Regulations concerning conduct, work, and living arrangements
521.2133	Regulations of group procedure
521.21331	Degree to which group is informal
521.21332	Regulations concerning meetings
521.21333	Regulations concerning staffing
521.21334	Regulations to guide group activities
521.21335	Regulations covering group participation
521.21336	Regulations covering daily contact
521.21337	Regulations concerning absences
521.214	Group's social status
521.2141	Degree of dependency on other groups
521.2142	Degree of cooperation with other groups
521.2143	Group's social status
521.220	Factors defined by role responsibility
521.221	Role requirements
521.222	Role responsibility for what, to whom, from whom
521.223	Role power, privileges, prestige
521.230	Factors defined by the group's relation to the site
521.231	Space required and available
521.232	Site location requirements
521.233	Facilities required
521.240	Factors defined by the group's significance to its members
521.250	Factors defined by group cohesion
521.2501	Belief on the part of members that the group functions as a unit
521.2502	Absence of personal conflicts
522.000	Intergroup
530.000	Collective situations (e.g., theater audience, street crowd, etc.)

REFERENCES

Guilford, J. P. Personality. New York: McGraw-Hill Book Company, 1959.

Hunt, J. McV. Intelligence and Experience. New York: The Ronald Press Company, 1961.

Murphy, G. Personality. A Biosocial Approach to Origins and Structure. New York: Harper and Bros., 1947.

Sells, S. B. Toward a taxonomy of organizations. Presented at Conference on Organization Research, Graduate School of Industrial Administration, Carnegie Institute of Technology, Pittsburgh, Pennsylvania, 22 June, 1962.

Sells, S. B., ed. Stimulus Determinants of Behavior. New York: The Ronald Press Company, 1963. (a)

Sells, S. B. An Interactionist looks at the environment. American Psychologist, 18:11 (in press). 1963