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NOTES ON PSYCHOLOGY AT
QUEEN'S COLLEGE, DUNDEE, SCOTLAND

BY

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NOTES ON PSYCHOLOGY AT
QUEEN'S COLLEGE, DUNDEE, SCOTLAND

St. Andrews University, founded in 1413, is the oldest university in Scotland and the third oldest in Great Britain. Only Oxford and Cambridge were founded earlier.

Age and tradition can serve to provide stability and structure to a university, but at St. Andrews it would appear as if tradition also has served to retard the growth of psychology as a discipline. St. Andrews has a deep-rooted philosophical and theological heritage which still persists, as indicated by the fact that there are currently three Chairs in Philosophy and five in Theology. A formal Department of Psychology has been in existence for more than 40 years, and a Chair was established in 1963. Because of a number of complicated factors within the University, the Chair has never been filled. Thus, the first Professor of Psychology has yet to be appointed.

To date, St. Andrews' chief claim to fame in psychology might be said to be the people who "have been there" at one time or another in their careers, including Eric Trist of the Tavistock Institute and the late Professor Rex Knight of Aberdeen. Within recent years there has been some indication of change in what might otherwise be considered a remarkably stagnant situation, and the future is looking increasingly bright.

In 1953 the Queen's College of the University was established in Dundee. The Psychology Department was moved from St. Andrews to Dundee approximately five years ago, through a merger of the Medical School and University College. At the same time Mr. Alfred Flook, one of the two present Senior Lecturers, was appointed Head of the Department. Queen's College will become a separate University in October 1967. James Drever, the present Professor of Psychology at Edinburgh University, has been named as Principal of the new University.

It is entirely possible that the combination of a university principal (president) trained in psychology, and removal from the restricting influence of the St. Andrews tradition, will permit a more adequate development of the Dundee Department. While much remains to be done, and there are serious obstacles to developing a first-class department in Dundee, progress during the past five years has been substantial as well as impressive. Within the

past few years the psychology faculty has increased to ten, and the teaching load has decreased from 15 to three hours per week -- a level which could well make many an American psychologist envious.

There are approximately 300 students enrolled in the four-year psychology program, which if successfully completed leads to a "double" honors degree. All students finishing this program receive an MA rather than the BSc which is customary in most British universities. No PhD's have been awarded in psychology to date, although there are four doctoral students enrolled at present. Dundee is not actually isolated as it is only 65 miles from Edinburgh; however, it is out of the main stream of professional life in Edinburgh and Glasgow, so that recruiting of faculty becomes somewhat difficult. As might be expected, the same thing applies to a lesser extent in the case of outstanding students.

The administration of the Psychology Department is rather unique for a European university. All departmental decisions, including expenditure of funds, are made by committees composed of faculty members. This has led to a decentralization of departmental functions which exceeds anything previously encountered by the writer. Reportedly, the procedure is quite effective and saves a great deal of time. From a surface evaluation of faculty morale this report probably is correct. In any event a great deal of mutual trust and respect among the staff would be required. One cannot help wondering if changes will occur when a professor is appointed.

At present the Psychology Department is housed in a new and modern building in the center of Dundee; however, this is insufficient to meet laboratory requirements and additional space has been obtained in the form of an old Georgian house about two blocks from the Department. When renovation of the house is complete it will be quite comfortable -- although possibly on the chilly side as there is no central heating. Even though the problem of laboratory space may have been overcome for the present, a long-term solution has not been found. It is possible that the somewhat elegant quarters in the new building will be taken over by University administrative offices.

During the time available, it was not possible to visit all of the staff members and learn of their research activity. The range of interests is quite wide, from psychophysiology through human engineering to experimental

social psychology. Some work in clinical psychology is going on at the Medical School and there reportedly is a very positive relationship with the Medical School faculty. This has proved to be a particular asset in the area of psychophysiology.

Dr. N.E. Loveless, one of the two Senior Lecturers in the Department, has worked for a number of years in the field of ergonomics. At present he is continuing a series of studies in signal detection under conditions of bi-sensory presentation. This work is supported by the Ministry of Defence.

Loveless started his work several years ago with a basic psychological study to determine if summation occurred when signals were presented through both auditory and visual channels. Using an oscilloscope for the visual presentation and a background of white noise in the auditory sphere, he found that simultaneous presentation of signals did produce a summation effect, as indicated by enhanced performance. This work is quite similar both in procedures and results to that reported by Buckner and McGrath (Vigilance: A symposium, Ed. Buckner & McGrath, McGraw-Hill, 1963), although it would appear that Loveless may have carried out his studies earlier.

The next series of studies was concerned with the question of whether simultaneous presentation of signals through two sensory modalities results in an impairment of ability to detect either of the individual signals. By a technique of measuring response to each modality independently, it was determined that no performance decrement occurs -- a finding which again is at least partly consistent with data generated by Buckner and McGrath. Loveless' move to Dundee apparently interrupted his research activity for some time. However, the work has been resumed and he is well into a series of experiments which are aimed at varying a number of dimensions in bi-modal sensory presentation in order to define perimeters of the problem. An example of this work is a study in which $\sum$ the signal presented through one sense modality is used to alert the subject to a signal transmitted through the second modality. Accuracy of detection is studied as a function of time between signals.

Mr. Allan L. Wilkes, a Lecturer in Psychology, recently initiated a long-term investigative effort in psycholinguistics. Basically, he is attempting to employ

a psychophysiological approach to study the development of semantic patterns. In collaboration with the Department of Physiology in the Medical School, Wilkes has assembled apparatus which uses vaso-constriction as an index of conditioned response to a series of stimulus words. Following the methods of Luria and Vinogradova (reported in the Brit. J. of Psych. 50, 1959), classical conditioning procedures are used to develop a psychophysiological response to a previously neutral stimulus word. Constriction of blood vessels in the finger is used as the index of response. Luria and Vinogradova report an apparent stimulus generalization in this situation which seems to follow a system of semantic connections. Thus, while other neutral words do not evoke the conditioned response, words which are similar either in sound or meaning to the conditioned stimulus do evoke a response.

As a first step in his research program, Wilkes has attempted to replicate the Luria and Vinogradova study. His results to date follow the same general pattern as found in the Russian study; however, he has been unable to achieve the experimental extinction of response reported in the earlier work. Thus, after as many as 60 trials, Wilkes' subjects continue to present a conditioned response whereas Luria and Vinogradova report extinction between 25-40 trials. At the present time it is not clear whether the inability to fully replicate the earlier study is due to more sensitive recording instruments, differences in procedures, or to the great multitude of unknown variables which so frequently prevent replication in the behavioral sciences. In any event, Wilkes is of the opinion that it is rather important to overcome the problem of experimental extinction before he can proceed with his work.

One of the more impressive members of the Dundee faculty is Dr. Terence Lee, a Cambridge PhD who has been a Lecturer at St. Andrews since 1956. Lee might best be identified as an experimental social psychologist. For some time his primary and enduring interest has been in the area of space utilization; first, along the lines followed by E.T. Hall at Illinois Institute of Technology, and more recently in terms of the sociospatial aspects of urban and rural planning.

Lee also has a continuing interest in classical laboratory studies of group learning phenomena, and has carried out a series of well-conceived and executed experiments in this area. These studies, reported in

some detail in ONRL Report C-15-65, are being continued by two of his doctoral students. However, Lee himself has become somewhat discouraged in this area because of the general lack of funds for such research in the UK. While this very realistic problem may be overcome through recently revised procedures for funding Social Science research in Great Britain, it is too early to tell at the present time.

Lee's early work on space as a variable in human behavior was concerned with the relationship between distance traveled to school, mode of transportation, and emotional adjustment of rural school children. This work, published in 1957¹, was the first of a series of studies directed toward investigating the psychological and sociological impact of consolidating rural school systems. A sample of 883 children (age 6-8 years) from 57 rural schools in the County of Devon were assigned to one of four categories: short walk to school (one mile or less); long walk (over one mile); bus ride of less than 15 minutes; and a bus ride of more than 15 minutes.

Each pupil was rated by his teacher on eleven behavior traits (such as aggression, concentration, popularity, etc.) using scales which Lee devised for the study. Through the use of a specially devised "Rating Board" the pupils in each class were ranked in relation to one another along a continuum of normal-neurotic for a given trait. Specific descriptive anchor points were provided for each scale. The ranking procedure was performed separately for each of the eleven traits and the ranks were transformed directly into numerical values through a scale attached to the Rating Board. While some questions might be raised regarding the development and validation of the technique, the results were quite clear-cut with differences between the four groups all being significant at the 1% l.o.c. The highest index of positive adjustment was found with children walking less than one mile, next was the short bus ride, followed by the longer bus ride and the long walk in that order. After examining the above and supplementary data in terms of possible rural-urban differences in child-raising practices, and in terms of fatigue, Lee considers

¹Lee, T.R., On the Relation Between the School Journey and Social and Emotional Adjustment in Rural Infant Children, Brit. J. Educ. Psych., 27, 101-113, 1957.

that his findings can best be interpreted in terms of longer transit times being perceived by the child as involving a reduced accessibility to the mother. A later study of two matched groups of country parishes showed school reorganization to be related systematically to population decline? Thus, it would appear that consolidation of rural schools is accompanied by a shift of population toward the consolidated schools. In a more recent unpublished study, Lee found that the move away from small country schools does not have any significant influence on the social status hierarchy of traditional country occupations, as perceived by schoolchildren.

Lee's doctoral dissertation at Cambridge and his most recent work have been in the study of the urban neighborhood. Basically, he has been concerned with elucidating and measuring the individual's perception, structuring, and organization of his neighborhood, as well as determining the behavioral implications of this "socio-spatial scheme." Lee contends that an urban neighborhood is more than a geographically-defined entity or a collection of people; it is seen as a synthesis of physical objects, social relationships and space. Moreover, it is hypothesized that there are a number of lawful and predictable relationships between human behavior and neighborhood characteristics.

Lee has adopted a phenomenal approach to the definition and measurement of neighborhoods. During the course of a rather extended and detailed semi-structured interview, the subject is requested to draw lines on a survey map of his general area in order to outline what he considers to be his neighborhood. The map is of such a scale that all local streets, buildings, and the subject's own dwelling are clearly identifiable. The interview, per se, is directed toward developing information as to the nature of the subject's social interaction and geographical areas involved, as well as shopping behavior, organizational affiliation, meeting attendance, etc. Data also is obtained on background factors relating to social-economic status, length of residence, etc. The term "neighborhood" is never mentioned in connection with the interview; however, it is

²Lee, T.R., A Test of the Hypothesis that School Reorganization is a Cause of Rural Depopulation, Durham Research Review, Vol. III, No.12, 1961

employed when asking the subject to outline his locality on the survey map.

The Land Use Surveys maintained by the County Planning Offices in Great Britain permit a determination of the exact location, condition, and use of every existing structure in a given county. This information, contained on IBM cards, provides Lee with his third major source of data. Here he categorizes data into three groups: Dwellings, Shops or Stores; and, "Social Amenity Buildings" which includes schools, public buildings, clubs, etc.

The data for Lee's major study, of which only a segment has been published³, was collected in the city of Cambridge. Nineteen of the 35 existing polling or voting districts were systematically selected and sampled. This procedure yielded 219 households in which the housewife was interviewed. (An additional 16 households were discarded, half because no contact could be made with the occupants and the remainder because of refusal to participate in the study.) While husband-wife differences in response are anticipated, this variable has not been examined to date. The final interview and map tracing procedures were developed during the course of pilot studies. Of significance here is the fact that the size and dimensions of the survey map segment presented to the subject did not influence the nature of the neighborhood map which was outlined.

Seventy-five per cent of Lee's sample were conceptually able to organize the significant space and persons around them in such a fashion as to outline their phenomenologically-perceived neighborhood on the survey map. Of those who did not trace a map, approximately half felt that they would be able to do so after they had been residents of the area for a longer period of time. There were pronounced individual differences in the maps traced within the 19 voting districts sampled. At the same time, when the individual tracings are superimposed on a single survey map a number of rather clearly defined neighborhoods begin to appear. It is of interest to note that the phenomenologically defined neighborhoods do not at all conform to those defined either through conventional techniques of defining geographical boundaries or of socio-economic grouping.

³Lee, T.R., Psychology and Living Space, in: Transactions of the Bartlett Society, Vol. 2, 1963-65, Bartlett School of Architecture, Univ. Coll., London.

In order to check on the accuracy and significance of the phenomenological neighborhoods, the location of friends, stores, and public buildings visited by each subject were grouped into eight distinct categories. An analysis of the relationship between behavioral activity reported by the subjects and their neighborhood maps disclosed the activity to be concentrated within the cognitive map boundaries in all eight categories, with statistical probabilities either reaching or exceeding the 0.05% l.o.c. in every category.

While the above analysis supports the concept of an individual neighborhood schema, it does not permit an assessment of individual differences in the degree to which one participates in, or becomes involved in, his environment. Lee has evolved a measure, the Neighborhood Quotient (NhQ), to express such involvement or attitude. Although the calculation of the NhQ is rather complex, in principle it amounts to no more than a procedure for factoring out the variable of opportunity to participate in neighborhood social intercourse which arises because of area differences in density.

By employing the NhQ, it has been possible to obtain data as to the relative significance of factors such as social class, age, and length of residence, in determining involvement in neighborhood activity.

This work on the urban neighborhood is sufficiently extensive that no more than a flavor can be given here. It has a basic theoretical orientation in Sir Henry Head's concept of schema, as elaborated by Sir Frederic Bartlett. While Lee has not been concerned with developing a theoretical model of urban neighborhood space utilization and behavior, the direction of his work clearly is derived from theoretical rather than empirical considerations. To date, the work has been rigorous, careful, and systematic. A number of his findings hold considerable practical implications for town planning -- for example, the phenomenologically perceived neighborhoods are remarkably constant in actual geographical area regardless of whether they are in the densely populated slums or middle class suburbs. It is anticipated that this work well may attract considerable attention when it is published.

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