

ABSTRACTS OF PAPERS PRESENTED AT THE ANNUAL
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Pierre G. Beautrais, P.O. Box 56-100, Auckland.

TO EMIT OR TIME: IS THIS REALLY THE QUESTION?

Is the time an organism spends or a count of responses emitted in the presence of control stimuli the best measure of the value of those stimuli? Part of the answer is derived from this study of concurrent second-order schedules. On time measures, pigeons "preferred" the larger response requirement, whereas on response measures they "preferred" the lesser response requirement. These findings contest Baum's assertion that time is the universal best behavioural measure, and suggest that the "best" measure is prescribed by the contingencies of reinforcement set up by the experimenter.

Marie Carroll, University of Otago, and K. Geoffrey White, Victoria University of Wellington.

SEMANTIC INTEGRATION OF COMPARATIVE RELATIONS:
TIME COURSE OF SCHEMA FORMATION

Semantic integration was studied in the context of a procedure in which subjects were first presented with a series of five-term transitive comparative relations of the kind: A is Xer than B, B is Xer than C, C is Xer than D, D is Xer than E. The subjects were then asked to verify a test statement which expressed the relation between any pair of terms such as "B is Xer than D". When the test statement was presented simultaneously with the comparative relations between adjacent terms, verification latencies increased with increasing remoteness of the test-statement terms. That is, latencies increased as a function of the number of relations between adjacent terms necessary to deduce the relation expressed by the test statement. When a delay was inserted between presentation of the comparative relations and the test statement, verification latencies decreased with increasing remoteness between terms of the test-statement relation. The decrease in latency with increasing remoteness was taken as an indication that with the introduction of a memory load the subjects had abstracted a linear schema from the comparative relations between adjacent terms. The duration of the delay and whether an interfering task was interpolated in the delay had no effect on the remoteness function. It was concluded that the linear schema was abstracted at the time of reading the sentences expressing the relations between adjacent terms.

Aloma Colgan and Pierre Beautrais, P.O. Box 56-100, Auckland.

TREATMENT FOR SEXUAL DYSFUNCTION

A private clinic was established in Auckland this year to help cope with the growing demand for professional help with sexual problems. Case studies were used to illustrate the magnitude and range of problems presenting, and the techniques employed in solving them. Therapy is based on Masters and Johnson's approach, although other behavioural techniques such as desensitisation, graded practice, orgasmic reconditioning, and reciprocity counselling are frequently used. Relationships with other professionals were discussed, particularly the role of the medical practitioner as a referral agent. The necessity for maintaining a conservative, non-controversial approach in private practice was emphasised as being particularly important when working in this sensitive area, and at this stage of registration, if we are to gain public acceptance as professionals.

Michael Colgan, University of Auckland.

ACQUISITION AND LONG-TERM RETENTION OF BI-DIRECTIONAL CONTROL OF HEART RATE

Six male and six female volunteers formed two groups equated for sex in a study on acquisition and retention patterns of control of heart rate (HR) by proportional visual feedback. Subjects received five acquisition sessions and two retention sessions at weekly intervals and two further retention sessions 7 and 16 months after acquisition. During retention sessions one group received no feedback (Extinction Group) and one group used their finger-felt pulse as feedback (Generalisation Group). During acquisition both groups achieved a range of control of +9, -3 beats per minute. For HR increase, the major improvement in control was in the last two sessions. For HR decrease the rate of improvement did not change over sessions. During retention there was no immediate reduction in control following removal of feedback. Control then rapidly attenuated for the Extinction Group but was largely maintained for the Generalisation Group. Findings suggest that, (a) many earlier studies were of insufficient duration to adequately examine effects of feedback, and (b) that generalisation training may be essential for HR control to be retained.

Michael Colgan, University of Auckland.

EFFECTS OF BINARY AND PROPORTIONAL FEEDBACK ON BI-DIRECTIONAL CONTROL OF HEART RATE

Six male and six female volunteers formed three groups of four subjects in a study on the efficacy of different forms of visual feedback on control of heart rate (HR). One group received proportional feedback from a meter plus a binary success signal, one group received only the binary signal. Subjects received six acquisition sessions and four extinction sessions. For HR increase, groups receiving proportional feedback showed mean control over the last two acquisition sessions of +10 beats per minute (bpm), whereas the group receiving only binary feedback showed control of +4 bpm. For HR decrease, both groups receiving proportional feedback showed mean control over the last two acquisition sessions of -4 bpm, whereas the group receiving only binary feedback showed negligible control. During extinction there was no immediate reduction in control of either HR increase or HR decrease but both declined over extinction sessions. Results indicate that proportional feedback is clearly superior to binary feedback, and that the addition of a binary signal to proportional feedback does not reliably enhance control. Results are consistent with an operant conditioning interpretation of feedback control.

Michael Colgan, University of Auckland.

USE OF VISUAL BIOFEEDBACK IN SYSTEMATIC DESENSITIZATION

Visual biofeedback of heart rate and breathing were used to assist two phobic patients to learn muscular relaxation and during subsequent systematic desensitization therapy. In Case A, a fear of inter-personal contact, phobic responses attenuated and the patient achieved the behavioural target. Follow-up sessions 3 months and 6 months later showed that the phobia had not reappeared. Case B involved three major phobias, a fear of interpersonal contact, a fear of medical treatment, and acrophobia. A multiple baseline study was attempted. The fear of inter-personal contact was treated and phobic responses attenuated. The other two phobias remained unchanged. The fear of medical treatment was then treated and phobic responses attenuated. The acrophobia remained unchanged and the fear of interpersonal contact did not reappear. Findings suggest that biofeedback could prove a valuable adjunct to systematic desensitization therapy.

Peter W. Dowrick, Department of Psychiatry, University of Auckland.
A UNIVERSAL DEPENDENT VARIABLE IN CLINICAL PSYCHOLOGY

A firm theoretical basis is proposed for the use of magnitude estimation to quantify behaviour change. It is hypothesized that a competent therapist can assign a numerical ratio to an observed rate of change relative to some standard. The implication is that group studies may therefore be carried out without regard to homogeneity of target behaviours or subject population. That is, a single therapeutic technique may be evaluated for its effect on a wide range of disorders. The notion may also be extended beyond clinical psychology. It is argued that the variable is parametric, due to the underlying time correlate, and some data are produced to support this argument. The hypothesis now needs further empirical investigation.

Peter W. Dowrick and John Raeburn, Department of Psychiatry,
University of Auckland.

VIDEOTAPED SKILL TRAINING WITH PHYSICALLY HANDICAPPED CHILDREN

Eighteen subjects took part in an experiment to investigate the effects of videotape self-modelling on skill training. The subjects were children of both sexes, aged 5 to 13 years, with various physical disorders including spina bifida and cerebral palsy. "Self modelling" refers to behaviour changes which take place as the result of repeatedly observing videotape films which show oneself behaving in a model way. A new method (using magnitude estimation) of assessing the rate of change in a variety of behaviours was used to establish the efficacy of self modelling as a technique of wide application. Results were highly significant ($p < .001$). Simple methods of creating "model" films are described and a videotape demonstration illustrates the range of daily living activities (including walking, dressing balance, ball skills) which served as target behaviours.

Nicola Duncan and Bruce McMillan, Department of Education,
University of Otago.

SIBLING INTERACTION IN THE TWO-CHILD FAMILY

There are several observational studies of parent-child interaction, but few of sibling interaction. This study attempts to use White's (1973) approach, in the interaction between the younger sibling in a two-child family and his older sibling; and between the younger sibling and his mother. Subjects were four boys (\bar{X} age 3:1 years). Three ten-minute observations were conducted in each home setting, with two S's and siblings also observed in an experimental playroom. A continual narration recorded the data, and categorization applied after transcription. Results demonstrated the frequency of interaction (31% of total time); its brevity (\bar{X} length = 8 seconds); the significance of S's "watching"; and the inadequacy of White's published information.

White, B. L. *Experience and environment*, Vol. 1. Englewood Cliffs, New Jersey: Prentice-Hall, 1973.

Valerie J. Grant, University of Auckland.
STRESS AND COPING

Life events research may be inadequate because of a basic misapprehension about the nature of stress. Using the Recent Life Change Questionnaire, life events research was tested for comprehensiveness by asking 40 married couples, in private interviews, if they could think of anything else that caused them stress. A further questionnaire incorporating some of their suggestions and some events from the R.L.C.Q. was administered to a further 40 married couples. Results confirmed that the omission of everyday, on-going pressures and worries is a serious one. Since it may be impossible to assess stressors quantitatively and

apply findings to illuminate the aetiology of diseases in which stress is presumed to play a part, it seemed more profitable to begin looking at specific coping techniques. A preliminary classification of coping techniques is suggested and results of further investigatory work are discussed in terms of sex differences, coping and coronary heart disease.

Graham J. F. Hunt, Council for Educational Research, P.O. Box 3237, Wellington.
LEARNER CHARACTERISTICS AND INSTRUCTIONAL STRATEGIES

The study attempted to determine the interactive effects of learner characteristics on two differentially, but hierarchically structured learning tasks. The learner characteristics chosen were a subject's independence and conformance achievement orientations and his prior familiarity with the subject matter. The two programmed texts constructed for the experiment were, "A Procedural Approach to Introductory Statistics", and "A Behavioural Approach to Learning". The point of task differentiation was based upon the degree of arbitrariness in the sequence order of criterion competencies; the statistics programme being deemed to be more intrinsically structured and the learning theory programme more extrinsically structured. The results of the study indicated a differential effect of learner characteristic variables between treatments and across tasks. The results further indicated both ordinal and disordinal treatment interactions on dependent measures such as criterion achievement, sequence appropriateness and task-related achievement motivation. The effects of instructional treatments were modified by the interaction of tasks and learner characteristics.

J. H. Kerr Inkson, Department of Management, University of Otago.

THE JOB SATISFACTION OF NEW ZEALAND MALE MANUAL WORKERS

Three hundred and eighty-three male manual workers, comprising 133 freezing workers, 72 assemblers, 87 watersiders, and 91 carpenters, each group randomly selected from at least two sites in New Zealand, were interviewed concerning their job attitudes, and completed the J.D.I., a standard checklist measure of satisfaction with five different job-facets. On comparison of J.D.I. scores with U.S. norms, N.Z. workers had lower satisfaction with work itself, with supervision and co-workers, but equal or higher satisfaction with pay and promotions. Factory workers had especially low satisfaction with the work itself. Results were interpreted within a theoretical framework which stressed the importance of the workers' values in setting reference standards against which the job is judged, and the high emphasis on values of social interaction and autonomy at work caused by the nature of N.Z. society. Understanding of job satisfaction requires exploration in depth of the cultural, subcultural, organisational, occupational, technological, and group forces impinging on the worker and the effects of these on his work values.

G. M. Maxwell, University of Otago.

AN EVALUATION OF SOCIAL SKILLS TRAINING

The paper reports the development of a six-session individual social skills training programme using video-feedback, role play, instruction, modelling, homework, and a knowledge of the function of non-verbal behaviour in impression formation. An experiment compared the effectiveness of three methods of training with a control group. Thirty-two volunteers were randomly assigned to one of the four conditions. Results demonstrate the effectiveness of the individual video feedback programme compared with the control. The improvements seem to be stable over time. Video and no-video feedback conditions produced similar results although video is recommended for other reasons. A group based on a mixture of Gestalt and social skills principles did not do significantly better than the control on most measures and was significantly less effective than the individual video programme on several of the measures. The research was supported by the Medical Research Council.

Christopher M. McGeorge, Department of Psychology, University of Canterbury.
BIOFEEDBACK AND THE HANDWARMING RESPONSE

As outlined in McGeorge (1976), the handwarming response has been claimed to have beneficial effects in the amelioration of vascular headaches of the migraine type. Previous research has however confounded several different treatment variables. Consequently the present experiment attempted to isolate the biofeedback component. This was carried out using forty-nine introductory psychology students. Subjects underwent a fifteen minute baseline period prior to a ten minute training session. The experimental group received true feedback from a BFT 302 temperature trainer. Control group one, received false feedback from a tape, while control group two received relaxation instructions via tape, in an attempt to produce the response without the use of any feedback. Continuous graph records of dominant hand index finger temperature were recorded. Results suggest that the handwarming response is not as universally or as easily learnt as had been suggested, when using pure biofeedback. It is concluded that the therapeutic effects of the technique can be largely attributed to the suggestion element inherent in the clinical use of feedback.

McGeorge, C. M. Biofeedback and the headache. *New Zealand Psychologist*, 1976, 5, 16-25.

Bruce McMillan and Rohan Squirchuk, Department of Education,
University of Otago.

TRAINING AND GENERALIZING PIAGETIAN CLASS INCLUSION TASKS

Classification (especially the ability to understand why objects can be included in certain classes) is central to operational thinking, and some debate ensues concerning the age for its acquisition. In this study, a class of preoperational children (N = 24; mean age = 6:1 years) were tested for classification and conservation ability, then divided into two groups. Experimental S's received two 20-minute training periods one week apart. Post-testing of both groups took place at intervals of three- five, and ten weeks after pretesting. Before training, no children could classify, or conserve. After training, 11 of the 12 Experimental S's could classify, while only 2 of the Control S's could. Six of the Experimental group generalized this operational ability to conservation tasks, while the same two Control S's achieved conservation. Results are interpreted as indicating the possible effectiveness of training, but the importance of language and maturational factors as well.

D. R. Mitchell, School of Education, University of Waikato.
**MENTALLY HANDICAPPED CHILDREN IN STRUCTURED DYADIC
COMMUNICATION SITUATIONS WITH THEIR PARENTS**

This investigation represents a fine-grained analysis of the interaction that took place between eight mothers and eight fathers (spouses) and their 4½ to 6-year-old Down's Syndrome children. Each parent-child dyad met in a university laboratory on several occasions, the bulk of the data being derived from three sessions, each held about one week apart. In these sessions, the parents were required to teach their children a block-assembly task, using parallel sets of material. Videotapes of the sessions were transcribed, care being taken to synchronise the verbal and non-verbal behaviours of both dyad members and to preserve the sequence of events. These transcripts were then coded by means of a 10-place alpha-numeric code in which each "communication act" was categorised in terms of several identifying features, not all being applicable to any one act. The data derived from the coding system were handled by means of specially-written computer programmes, the principal analyses being concerned with the session-by-session stability of various behaviours, the nature of contingencies between the communication behaviours of the dyad members, comparisons of mother-child and father-child interactions, and the extent to which pairs of spouses resembled each other in their communications.

P. Phillips, P.O. Box 5313, Auckland, and D. Clarke, Department of Psychology, Massey University.

ATTITUDES TOWARDS ENERGY USE AND CONSERVATION IN N.Z.

To examine the perceived need for energy conservation and the acceptability of alternative policies for management of energy resources, 17,500 electors chosen randomly from the 1974 Electoral Rolls were mailed the Energy Research Project schedule. Sixty percent returned valid forms. Factor analysis of the Likert items provided two factors: Need for Domestic Conservation, and Resource Appraisal. Widespread support was given for legislation to install insulation, restricting car access to city centres, and a stepped electricity tariff. Except for the highest income group, petrol rationing was preferred to price increases, and forty percent of the respondents supported total energy rationing. With potential environmental impacts as the criterion, the majority chose coal rather than oil or nuclear power generation sources. Geographical differences in power options, allocation priorities for oil and electricity during restricted supply, and resistance to conservation measures were examined. There appeared to be no relationships among knowledge of the energy sector, attitude to conservation, and conserving behaviour. Implications and explanations were discussed.

Helen Place, University of Waikato.

WOMEN IN MANAGEMENT: MANAGERIAL STYLE

Two underlying dimensions, broadly conceptualised as relationship orientation, and task orientation, account for most differences in leader behaviour. Because of their believed greater relationships orientation, women are considered too emotional to work effectively in top administrative positions, and since the majority of women in management are working at the first or supervisory level, it is considered that such prejudice regarding emotional unsuitability is an effective barrier to advancement. From the responses of 84 F managers (age 25-55) to the MPAT (Reddin 1974) a HIGH RELATIONSHIP-LOW TASK predominant style emerged, occurring consistently across production, marketing, finance and personnel management, indicating an identifiable Female style differing from the predominant Male style of HIGH RELATIONSHIP-HIGH TASK. This Female style holds when supervising Females, but with Male subordinates a HIGH RELATIONSHIP HIGH TASK style is used. Male/Female style differences relate not to emotional relationships area, but rather to task orientation.

Amnon Till, Victoria University of Wellington.

THE JUDGMENT OF RANDOMNESS IN A SERIES OF BINARY NUMBERS

Observers were shown a sequence of simultaneous pairs of binary numbers (11, 00, 01, 10). For each of these pairs (e.g., 01 and 11) the subjects were asked to state whether they were equally random, or which one was most random. The representative heuristic hypothesis predicts that subjects will perceive the numbers 01 and 10 as being more representative (or typical) of binary numbers than the numbers 11 and 00. Forty male students participated in the experiment. They went through 12 training trials and 72 trials without knowledge of results (KR). Then, they were divided into five groups of eight subjects, each of which had different trial by trial KR for 72 trials. The different types of KR were based on the different heuristics that the subjects could be using in this task. The results showed that the subjects' responses could have been best predicted by the representative heuristic hypothesis.

K. Geoffrey White, Victoria University of Wellington.

BEHAVIOURAL CONTRAST AS DIFFERENTIAL TIME ALLOCATION

The interpretation of behavioural contrast as differential time allocation was examined in an experiment which employed multiple VT VT schedules where there was no response requirement. Hooded rats were exposed to multiple VT 30sec VT 30sec and multiple VT 30sec VT 90sec schedules of response-independent reinforcement. Behavioural contrast of time allocation was evidenced by an increase in the time allocated to the reinforcement source associated with the unchanged component of the multiple schedule, concurrent with a decrease in the time allocated to the reinforcement source associated with the lower density schedule in the other component. In a second experiment using multiple VI VI schedules of response dependent reinforcement, behavioural contrast occurred for response frequency and time allocation measures, but not for response rate. It was argued that the contrast effect was attributable to an increase in the time allocated to responding in the unchanged component rather than to an increase in the rate of responding.

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