



**NEW ZEALAND
ASSOCIATION
FOR BEHAVIOUR
ANALYSIS**

10TH ANNUAL CONFERENCE

30 AUG - 1 SEP 2013

THE UNIVERSITY OF AUCKLAND



Association for Behaviour Analysis

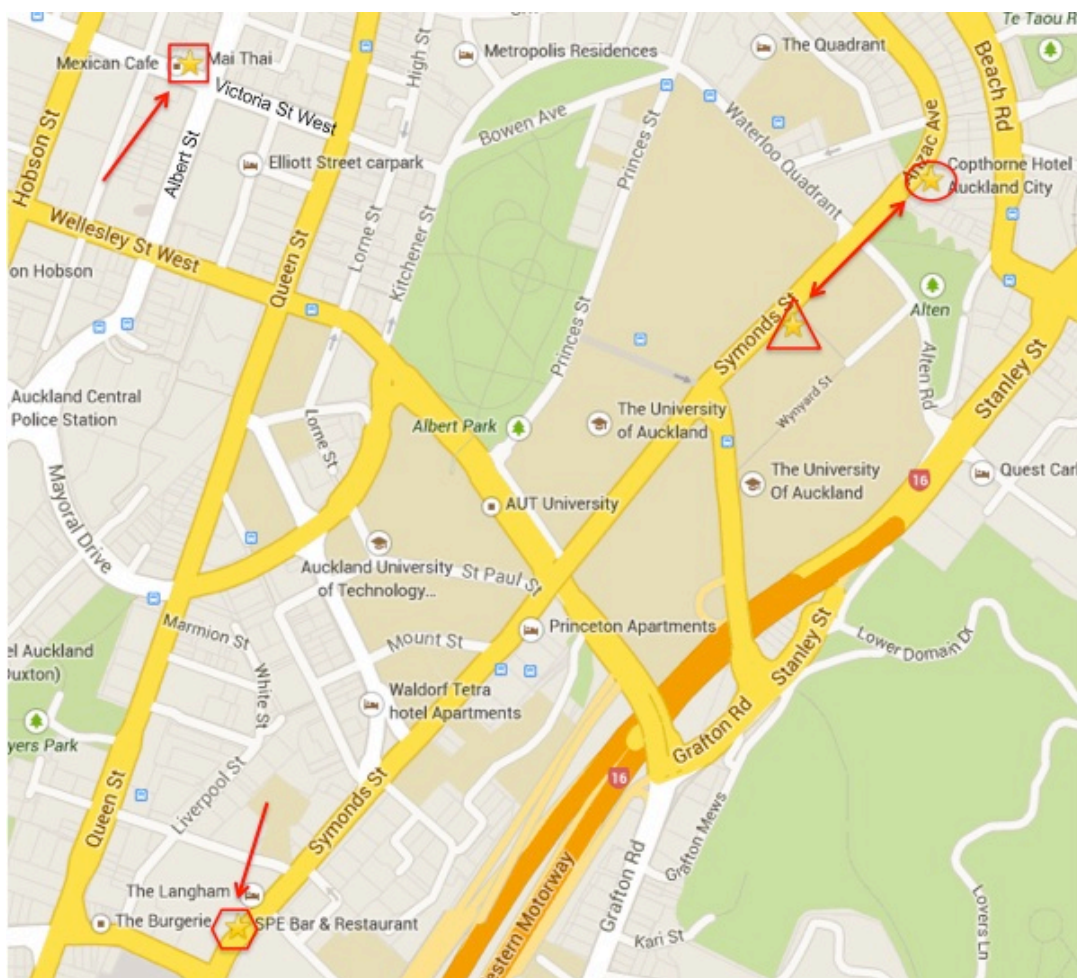
WELCOME

Welcome to the University of Auckland for the 10th annual conference of the New Zealand Association for Behaviour Analysis (nzaba.org). We hope you enjoy the conference and your time in Auckland.

If you arrive in Auckland on Friday night, please join us for a casual get-together at 6:00 pm at SPE at Langham Hotel (83 Symonds Street; hexagon in map).

VENUE

The conference will be held at the Copthorne hotel (150 Anzac Avenue; oval) on Saturday and at the Human Sciences Building on campus (10 Symonds Street; triangle) on Sunday. The maps below contain the location of both venues.



If you intend to drive, please note that parking may be restricted around the area as the University is hosting its annual Courses and Careers day during this weekend. If you are staying at Copthorne Hotel, they have limited parking spaces available for \$10 per night. Alternative parking options can be found through the University's website (<http://www.auckland.ac.nz/uoa/campus-parking-options>). If you decide to park on the street, please note any parking restriction signs in the area since time limits are enforced on Saturdays in central Auckland.

REGISTRATION

The registration desk will be open at 7:30 am on Saturday and 8:00 am on Sunday. The registration desk will be located in the vicinity of the room in which the conference is held. The cost of registration is \$140 for the waged attendees and free for students. Registration will be accompanied by coffee on both days.

INSTRUCTIONS TO PRESENTERS

Paper Presentations: Presentations are allocated a 20-minute slot. Please aim to present for 15 minutes, leaving 5 minutes for questions. All presenters are asked to upload their talk onto the computer prior to their session.

Poster Presentations: The posters sessions will be during all of our breaks on Sunday. The posters need to be mounted on the walls in the break room before morning tea on Sunday. Poster presenters are asked to be available at their posters during these times to answer questions.

MORNING TEA, LUNCH AND AFTERNOON TEA

Food and drinks will be available during all scheduled breaks on Saturday and Sunday at the appropriate venues. The location of the room in which breaks will be held will be in the vicinity of the room in which the conference is held. Vegetarian and gluten-free options will be available.

CONFERENCE DINNER

The conference dinner will be held on Saturday night (31st of August) at Mai Thai Restaurant (www.maithai.co.nz) located at 57 Victoria Street West (square in map). The reservation is for 7:30 pm. Please aim to be at the restaurant before this time. The cost is \$38 per person for a fixed menu dinner. If you plan to attend the dinner, please pay with cash when you register at the conference. Please note that the cost of drinks is the responsibility of individual diners and Mai Thai has offered us a BYO option.

SATURDAY 31ST AUGUST
Copthorne Hotel, 150 Anzac Avenue

AM	7:30	Coffee and registration	
	8:55	Welcome	
	9:00	Celia Lie	Human performance in a five-alternative choice task
	9:20	Anthony McLean	The wagon wheel effect and local analysis of behaviour
	9:40	Joshua Bensemann	Choice without the last reinforced alternative
	10:00	Gordon Tan	The role of verbal processes in our preferences for slot machine near wins
	10:20	Morning tea	
	10:40	Rachel M. Byrnes	Teaching internet safety skills to adults with intellectual disabilities
	11:00	Jing Zhu	Using a group contingency to increase participation of pre-teens with autism in group discussions
	11:20	PuiTzan Chan	Teaching children with ASD name writing using video modelling and chaining: Is backward or forward chaining more effective?
	11:40	Janine Lodge-Osborn	ABA in the classroom: The good behaviour game revamped
PM	12:00	Javier Virués Ortega	Interactions between behaviour function and psychotropic medication: A re-analysis
	12:20	Lunch	
	1:40	Oliver C. Mudford	Careers in Applied Behaviour Analysis in New Zealand
	2:00	Cara Selway	An evaluation of the effects of response interruption redirection and matched stimulation on vocal stereotypy: A follow up presentation
	2:20	Antony Thomas	Does ABA in New Zealand appear 'anorexic'? An inquiry into some of the contributing variables and a brief comparison with its 'hefty'/'obese' ABA cousin in the USA
	2:40	Elin Engstrom	Applied behaviour analysis in a dementia care facility
	3:00	Arnja R. Dale	Can models mimic the real thing in aversive training of canine predation?
	3:20	Afternoon tea	
	3:40	Russell Taylor	Matching redux
	4:00	Jessica Kelmere	Temporal discrimination in the canine
	4:20	Sarah Cowie	A step in time from 1 to 9: Discriminating local food ratio reversals that occur a fixed time after the last reinforcer
	4:40	Michael Davison	Time, space, and Michael
	5:00	William M. Baum	A new paradigm for behaviour analysis: Allocation, induction, and contingency
	5:20	AGM business meeting	
	7:30	Dinner at Mai Thai	

SUNDAY 1ST SEPTEMBER

HSB 2, Human Sciences Bldg, 10 Symonds St (UoA)

AM	8:30	Coffee and registration	
	9:20	Angelika Anderson	Comparing the effectiveness of point-of-view and video self-modelling to teach daily living and social skills to children with autism
	9:40	Denys Brand	Markov chain analyses of discrete trial teaching
	10:00	Katrina J. Phillips	The use of calibration for informing the training of observers
	10:20	Mae Hensman	Evaluation of sensory based activities in dementia care
	10:40	Morning tea and posters	
	11:00	Emma E. Mitchell	Evaluating interteaching in applied behaviour analysis graduate courses
	11:20	Rebecca A. Sharp	Evidence-based practice in applied settings: Examples from students of the University of Auckland Applied Behaviour Analysis Programme
	11:40	Brett Furlonger	Was Skinner right when he said that universities have come to rely on students who do not need to be taught? Towards an understanding of the learning gap between teaching and student learning of applied behaviour analysis
PM	12:00	Maree Hunt	Student reactions to the use of live animals in behavioural psychology teaching labs
	12:20	Lunch and posters	
	1:40	Ludmila Miranda-Dukoski	Context affects relapse by reinstatement
	2:00	Jonas Chan	Stimulus control and resistance to extinction in combined stimulus contexts
	2:20	James Fleet	Can we separate operant and Pavlovian processes in resistance to change with discriminative-stimulus location?
	2:40	John Bai	Questioning Reinforcement: Response-contingent events affect both response rate and persistence?
	3:00	Afternoon tea and posters	
	3:20	Kathleen E. Doolan	Behavioural variability
	3:40	T. Mary Foster	A comparison of the effects of delay to reinforcement, amount of reinforcer and quality of reinforcer on essential value of demand with hens
	4:00	Stuart McGill	Investigating choice behaviour and attending by combining EAB with EEG
	4:20	Farewells and Awards	

Complete programme: Saturday 31st August (Cophthorne Hotel)

Session 1		Chair: Chris Podlesnik	
9.00 am	Celia Lie, Brent Alsop & Rachel Goh	University of Otago	Human performance in a five-alternative choice task
<p>While most human choice research has focused on two-alternative choice behaviour, there has been a lack of research on multiple-alternative choice behaviour. Recently, Kangas et al. (2009) and Lie et al. (2013) examined human three-alternative choice behaviour using a computer version of the childhood game “Paper Scissors Rock” where each response (P, S, or R) was associated with a different likelihood of reinforcement. Both Kangas et al. and Lie et al. found that human choice behaviour was successfully captured by the generalised matching law (GML, Baum, 1974). The present study aimed to extend this to a five-alternative choice task, namely “Rock Paper Scissors Lizard Spock” (as recently popularised by the TV show The Big Bang Theory). In this study, we varied the relative frequencies of reinforcement across the five alternatives, and looked at response rates for each alternative. The results of this study will be presented and discussed in this talk.</p>			
9:20 am	Anthony McLean	University of Canterbury	The wagon wheel effect and local analysis of behaviour
<p>Preference pulses (PPs) may get part of their shape from the preceding reinforcer (or other stimulus), via “local” strengthening or discriminative effects on the response/visit sequences that follow. But PPs are unreliable indicators of such effects, because pulses are seen even when local effects cannot be assumed to be present. Such pulses are artifactual in the sense that they arise from the analysis, rather than anything changing in the behaviour, in a manner reminiscent of the wagon wheel effect. The presence of this artifact is incompatible with much of what has been written about PPs, and also with how they have sometimes been used to learn about behaviour. We present some simulations that demonstrate the emergence and manipulation of these “artifactual” preference pulses. We also suggest a way of removing them from post-stimulus preference pulses to reveal the local effects that reinforcers, and other stimuli, often have.</p>			
9:40 am	Joshua Bensemann, Douglas Elliffe, Brenda Lobb & Christopher A. Podlesnik	University of Auckland	Choice without the last reinforced alternative
<p>Krägeloh et al. (2005) found evidence for both the discriminative and strengthening effects of reinforcers. They found that the probability of continued reinforcers on a key determined the key that was preferred during the following inter-reinforcer interval. This has been used as evidence that reinforcers are signals that guide preference towards the location of further reinforcement. However, Krägeloh et al. found enduring preference for the location of the recent reinforcer even when the probability that the next reinforcer would come from that location was 0. This result might suggest that reinforcers strengthen behaviour. In the present experiment, we further separated the discriminative and strengthening effects of reinforcers in a procedure where continued responding on the recently-reinforced location was sometimes not possible. This was achieved by controlling which keys were available following a reinforcer. When the key that produced the last reinforcer was available, there was an increase in the preference for that key. However, when the key that produced the last reinforcer was unavailable, preference was determined by the probability of reinforcement, which may or may not have been signalled by the last reinforcer.</p>			
10:00 am	Gordon Tan, Anne Macaskill, Maree Hunt & Dave Harper	Victoria University of Wellington	The role of verbal processes in our preferences for slot machine near wins

Slot machine near-wins are loss outcomes that resemble wins. People rate near wins as more similar to wins than other losses. Dixon, Nastally, Jackson and Habib (2009) used stimulus equivalence classes to change these verbal ratings by establishing a derived relation between near win outcomes and the word "loss". Previous studies in our lab found that these changes in verbal ratings were not accompanied by changes in response latencies. Rather, longer response latencies following near-win outcomes remained. The current study investigated whether derived relations affected preferences for slot machines. Consistent with this, participants who had acquired derived relations between the word "loss" and near-win outcomes showed reduced preference for a simulated slot machine that presented near-win outcomes. Possible avenues to explore in the future are discussed.

Session 2		Chair: Angela Arnold-Saritepe	
10:40 am	Rachel M. Byrnes, Katrina Phillips & Oliver C. Mudford	University of Auckland	Teaching internet safety skills to adults with intellectual disabilities
Behavioural skills training (BST) has been used to teach individuals with intellectual disability (ID) safety skills in order to maintain independence in the community while taking adequate precautions. The Internet is an additional setting in which safety skills must be taught to vulnerable populations. Six adults with ID were assessed on three Internet safety skill areas: personal safety, virus awareness, and personal information sharing. Preliminary results of BST for personal safety will be presented, along with additional baseline findings.			
11:00 am	Jing Zhu & Catherine Hird	Timata Hou	Using a group contingency to increase participation of pre-teens with autism in group discussions
Deficits in social skills are common amongst children diagnosed with autism. Effective social skills are important to possess for use in daily life. Seven 11-13 year olds participated in a Social Skills Group run by IDEA Services. The aim of this group was to improve social skills such as participation. An interdependent group contingency was used during discussion segments of the group; the results of three of the pre-teens will be presented. Participation for all three of these pre-teens increased and was shown to generalise to other settings. Participation effects were shown to maintain once the intervention was withdrawn also.			
11:20 am	PuiTzan Chan, Dennis Moore & Angelika Anderson	Monash University	Teaching children with ASD name writing using video modelling and chaining: Is backward or forward chaining more effective?
This study aimed to compare the effects of chaining experimentally within a video modelling package. Six children diagnosed with ASD were taught how to write their name using video modelling in combination with chaining and reinforcement. Video modelling was used to teach letter formation, while the chaining procedure was used to teach the sequencing of letters. Three participants were allocated into each chaining group. The overall name difficulty was the same for each group. A multiple-probe design across participants was used to compare the difference in effectiveness between forward and backward chaining. Results of the study show that video modelling was an effective intervention in teaching letter formation to four of the six participants. Two participants showed difficulties with writing their name at the completion of the study. Of the four participants who were successfully taught to write their name, two participants were in each chaining group. This study revealed the effectiveness of forward chaining at teaching children with ASD the sequencing of letters within their name. The effectiveness of backward chaining was not shown as participants within this group had a repertoire of skills prior to intervention. This made the comparison between the effectiveness of backward and forward chaining methods inconclusive. This study contributes to the existing literature for video modelling and underscores the importance of prerequisite skills prior to			

intervention.			
11:40 am	Janine Lodge-Osborn, Annette Henderson, Angela Arnold-Saritepe & Douglas Elliffe	University of Auckland	ABA in the classroom: The good behaviour game revamped
<p>In New Zealand, the Ministry of Education is currently focusing on a behavioural initiative called Positive Behaviour for Learning (PB4L), targeted at reducing disruptive and challenging behaviour in schools. The current research investigated a novel version of the Good Behaviour Game (Barrish, Saunders & Wolf, 1969) which aimed to incorporate the Tier Two focus of PB4L with the positive focus of the PB4L philosophy. That is, “don’t” statements called pre-corrective directions, used to prime students prior to group activities, with reinforcing appropriate behaviour. The novel GBG (GBG2) was directly compared with the original (GBG1) in an alternating treatments with changing criteria design, in two general education primary school classes (6 and 8 years). It was found that GBG2 was more effective at reducing disruptive behaviour in each class than the original, and more widely preferred by both teachers and students due to its positive focus.</p>			
12:00 pm	Javier Virués Ortega	Manitoba University	Interactions between behaviour function and psychotropic medication: A re-analysis
<p>Psychopharmacological and behavioural interventions are commonly used as treatments for problem behaviour, often in combination. However, little is known about the potential interactions between these two forms of treatment. A better understanding of these mechanisms could help to optimize the efficacy of combined interventions. Behaviour analysts use functional analysis to establish the operant function of the problem behaviour (e.g., positive reinforcement in the form of social attention) and program the intervention accordingly (e.g., extinction and differential reinforcement of alternative behaviour). By contrast, psychopharmacological interventions are a form of topography-driven intervention - the intensity and form of the behaviour determines the type and dosage of the drug. A better understanding of the potential effects of common psychotropic medications on behaviour function is crucial in order to optimize combined behavioural and pharmacological interventions for problem behaviour. During this presentation we will present a re-analysis of all published functional analyses conducted in the presence of various psychotropic medications. This analysis allows for a preliminary understanding of the interactions between behaviour function and medication. The clinical and conceptual implications of this line of research will be discussed.</p>			
Session 3		Chair: Celia Lie	
1:40 pm	Oliver C. Mudford & Angela Arnold-Saritepe	University of Auckland	Careers in Applied Behaviour Analysis in New Zealand
<p>There are now 19 BCBA's shown on the BACB register as resident in New Zealand. Our programme has trained 24 psychologists specialising in ABA, of whom 15 are currently BCBA. We summarise occupational information about our graduates and other ABA practitioners in New Zealand. Regarding careers: From review of published requirements showing the increasing recognition of the value of applied behaviour analysis, forecasts will be made on future demand for career ABA practitioners in this country. Implications are derived concerning training of behaviour analysts and for providing career advice to students and graduates.</p>			
2:00 pm	Cara Selway & Angela Arnold-Saritepe	University of Auckland	An evaluation of the effects of response interruption redirection and matched stimulation on vocal stereotypy: A follow up presentation

<p>This study compared the effects of two current interventions for the reduction of vocal stereotypy; Response Interruption Redirection (Ahearn, Clark, McDonald & Chung, 2007) and non-contingent matched stimulation (Piazza, Adelinis, Hanley, Goh & Delia, 2000) with 4 children with autism spectrum disorder within a school environment. These interventions were compared in an alternating treatments design to investigate which intervention most effectively lowered rates of stereotypic vocalisations whilst increasing appropriate vocal behaviour. Results demonstrated that both interventions produced clinically significant reductions in vocal stereotypy, whilst neither produced an associated increase in appropriate vocalisations. Highlights of the study include thorough assessment methods of behaviour function and stimulus' matched potential as well as maintenance and generalisation procedures.</p>			
2:20 pm	Antony Thomas & Paul Naveen	Ministry of Education-Special Education, Hamilton; Massey University	Does ABA in New Zealand appear 'anorexic'? An inquiry into some of the contributing variables and a brief comparison with its 'hefty'/'obese' ABA cousin in the USA
<p>Research indicates that there is considerable misinformation about ABA among educators and the public. Some people report that ABA results in robotic/unnatural type behaviors, and some of them even wonder if rewarding and reinforcing children is in fact "bribing". ABA has a high reputation amongst researchers and clinicians and is considered a "gold standard" in the treatment of autism in the United States. The scenario is totally different in New Zealand. Public awareness on the efficacy of ABA in the treatment of autism is low among teachers and parents, and also among professionals in New Zealand. The NZ autism guideline (2010) recommends "<i>Interventions and strategies based on applied behavior analysis (ABA) principles should be considered for all children with ASD</i>". Unfortunately this remains as a mere mission/vision statement on paper and the reality on the ground is nowhere near this recommendation statement. The first author has worked in the school sector in the USA for 6 years and at the Ministry of Education, Special Education in New Zealand for 8 years. This paper is an inquiry into some of the variables that contribute to ABA's 'stunted growth' (?) in the area of autism in New Zealand. It is also intended to explore/brainstorm further strategies/approaches in overcoming some of the current barriers in this field.</p>			
2:40 pm	Elin Engstrom & Oliver C. Mudford	University of Auckland	Applied behaviour analysis in a dementia care facility
<p>It is estimated that approximately 60-70% of people in aged residential care have some type of dementia. Research has shown that residents with dementia engage in a high proportion of socially important behaviours that may respond to behaviour modification for the benefit of the individual, their family, and carers. We provide a summary with data of applied behaviour analysis interventions used to modify behavioural excesses and deficits among residents of a dementia care facility during a year-long ABA internship placement.</p>			
3:00 pm	Arnja R. Dale, Christopher A. Podlesnik & Douglas Elliffe	Unitec Institute of Technology; University of Auckland	Can models mimic the real thing in aversive training of canine predation?
<p>Model species are commonly used when training and assessing animals, for example in canine temperament testing, in predator awareness training and for prey aversion training. There has been no systematic evaluation about the effectiveness of using models when training animals. This research investigates whether models mimic the real thing using a standardised canine training protocol with chickens as a model. 84 dogs were trained to avoid a chicken model and then presented with a live chicken one month later at a novel location with novel dog handlers. We used five chicken models: (1) dead chicken; (2) stuffed chicken; (3) chicken faecal material; (4) chicken nesting material; (5) wooden cut-out chicken. The dogs were randomly allocated to one of seven treatment groups that consisted of the five model groups previously mentioned, as well as Group 6 comprising of all the models together and Group 7 consisting of a live chicken as</p>			

the positive control. These models were selected for investigation because they are the training stimuli used by the New Zealand Department of Conservation's Kiwi Aversion Training programme, but with kiwi equivalents (Groups 1-6 only). The use of the live chicken in the initial training ($n=10$) consistently resulted in the highest levels of aversion behaviours being displayed when presented with a novel live chicken, one month later, in a novel site and with novel handlers (90%). Use of the live chicken also resulted in the shortest time to detection of the chicken and to the furthest distance from the chicken maintained by the dogs. Dogs initially trained using all the models (1-5) together resulted in the next highest level of aversion behaviours observed when presented with a live chicken (67%; $n=12$), followed by the dead chicken model (62%; $n=13$). The remaining four models resulted in lower levels of aversion behaviours being displayed when presented with a live chicken ('chicken faecal material' was 33%, $n=13$; 'stuffed chicken' was 25%, $n=12$; 'cut-out bird' was 25%, $n=12$; and 'nesting material' resulted in 25%, $n=12$). The results suggest that most of the test dogs did not generalise from the chicken model to the live chicken. It is suggested that the use of models in animal training is questionable, and needs further study.

Session 4		Chair: Ant McLean	
3:40 pm	Russell Taylor, Christopher A. Podlesnik, Douglas Elliffe & Sarah Cowie	University of Auckland	Matching redux
<p>This paper describes provisional results from a continuing study of choice during concurrent variable-interval schedules of reinforcement. The experimental design tested response allocation using inter-reinforcement intervals drawn from exponential and arithmetic (uniform) distributions in three phases. Each phase compared the same four relative reinforcement rates. Phase 1 compared pairs of exponential schedules; Phase 2 compared arithmetic schedules and Phase 3 compared arithmetic- and exponential-schedule pairs. This project seeks to examine the different utilities or intrinsic values of the temporal properties of intervals to reinforcement. Scheduled, average, inter-reinforcement intervals (IRI) represent first-moment properties (Mean or Expectation) of reinforcement schedules. The variance of IRIs determines the second-moment properties (often denoted, historic or implied volatility) of reinforcement schedules. At its simplest, a reinforcement schedule represents a bundle of intrinsic attributes. Plausibly, economic agents choosing between alternatives maximise their utility for different reward attributes.</p>			
4:00 pm	Jessica Kelmere, Lewis A. Bizo & James S. McEwan	University of Waikato	Temporal discrimination in the canine
<p>Effective dog training depends on timely delivery of rewards. Critical to an understanding of "timely" for dogs is an understanding of the psychophysical performance of dogs when temporal durations are used as stimuli. Fifteen dogs were tested, food was used as reinforcers, and owners were asked not to feed their dogs before testing. The dogs were shown a white light for either a short or long duration, on the centre of the display. They were trained to nuzzle the lever above the screen whose colour is associated with the duration shown, for example touch the red screen lever when it was a 1 sec duration and the green screen lever when it was 4 sec. The location of the comparison stimuli was randomised across the left and right sides. Across the pairs of delays, difference in delays was one to four. If dogs made the correct response a piece of food is delivered. Once the dog responded with above 80% accuracy the testing phase began. During testing the two original signal durations were presented on 25% of trials on the remaining trials intermediate duration e.g. 6 sec are presented. Psychometric functions from stimulus-generalization sessions, when novel test durations were introduced, are presented.</p>			

4:20 pm	Sarah Cowie, Michael Davison & Douglas Elliffe	University of Auckland	A step in time from 1 to 9: Discriminating local food ratio reversals that occur a fixed time after the last reinforcer
<p>When the local food ratio is differential with respect to time since an event, elapsed time is a discriminative stimulus for the likely availability of food for a response. When the local food ratio reverses at a fixed time since an event, causing an abrupt change in the reinforcer differential, choice generally changes progressively with elapsed time. In a concurrent VI VI schedule where the local food ratio reversed after a fixed time had elapsed since the last food delivery, we arranged brief stimulus presentations that signaled the local food ratio and/or elapsed time. Stimulus presentations signaling elapsed time enhanced local choice. Local choice was well described by a model that assumed that deviations from the obtained food ratio occurred due to imprecise discrimination of the stimulus-response and response-reinforcer contingencies.</p>			
4:40 pm	Michael Davison	University of Auckland	Time, space, and Michael
<p>Unlike concurrent variable schedules, environments are not homogeneous across time and space. In this talk, I want to consider how a recent model of choice across space and time may be applied to all of the 3 dimensions of space and one of time together, and to subsets of these—and how environmental signals or signposts help us better to get the goods. I'll affirm again that all environmental events, whether they be classical "reinforcers" or not, have degrees of inherent and conditional value: Inherent value depends on organismic state; Conditional value depends on their relation to spatial and temporal differentials in both inherently-valuable and conditionally-valuable signals.</p>			
5:00 pm	William M. Baum	University of California, Davis	A new paradigm for behaviour analysis: Allocation, induction, and contingency
<p>The concept of reinforcement is at least incomplete and almost certainly incorrect. An alternative way of organizing our understanding of behavior may be built around three concepts: allocation, induction, and correlation. Allocation is the measure of behavior and captures the centrality of choice: All behavior entails choice and consists of choice. Allocation changes as a result of induction and contingency. The term induction covers phenomena such as adjunctive, interim, and terminal behavior—behavior induced in a situation by occurrence of food or another Phylogenetically Important Event (PIE) in that situation. If one allowed that some stimulus control were the result of phylogeny, then induction and stimulus control would be identical, and a PIE would resemble a discriminative stimulus. Much evidence supports the idea that a PIE induces all PIE-related activities. Research also supports the idea that stimuli correlated with PIEs become PIE-related conditional inducers. Contingencies create correlations between "operant" activity (e.g., lever pressing) and PIEs (e.g., food). Once an activity has become PIE-related, the PIE induces it along with other PIE-related activities. Contingencies also constrain possible performances. These constraints specify feedback functions, which explain phenomena such as avoidance.</p>			

Complete programme: Sunday 1st September (HSB 2, Human Sciences Building)

Session 1		Chair: Oliver C. Mudford	
9:20 am	Angelika Anderson, Dennis W. Moore, Pooja Patel & Sarah Judde	Monash University	Comparing the effectiveness of point-of-view and video self-modelling to teach daily living and social skills to children with autism
<p>Video modeling has shown promise as an effective strategy for teaching children with autism social skills as well as daily living skills. Different forms of video modeling exist but to date little research has investigated the relative effectiveness. The aim of the present study was to examine the comparative efficacy of conventional scene view (video self-modeling; VSM) and first-person perspective (point-of-view modeling; POVM) procedural types in improving the social skills and daily living skills of four school-ready children with autism. Each child was taught two target skills, one using POVM and one with VSM. It was hypothesised that POVM would be more effective for teaching daily living skills, while VSM would be more effective at teaching social skills. The results partly support the hypothesis: Though there was no difference in the effectiveness of either forms of video modeling in teaching daily living skills, VSM was found to be more effective in teaching social skills than POVM. The findings of the current study provide a novel contribution to the expanding VM evidence base, indicating that VSM is a superior procedure compared to POVM for improving the social outcomes of children with autism.</p>			
9:40 am	Denys Brand, Oliver C. Mudford & Douglas Elliffe	University of Auckland	Markov chain analyses of discrete trial teaching
<p>Discrete-trial teaching (DTT) is an ABA procedure often used to teach academic and other skills. The aim of the study was to evaluate the treatment integrity of DTT programmes of children with ASD and intellectual disabilities using Markov probability chains. Therapy sessions were recorded in the natural environment. Treatment integrity errors that were identified during the baseline phase were reported to the consultant and therapist and further evaluated in a follow-up phase. The results from two dyads will be presented. For Dyad 4 acquisition trial treatment integrity increased from 87% to 93% between phases. The probabilities of two out of the three treatment integrity errors were reduced to zero. Preliminary results from Dyad 8 show that treatment integrity on acquisition trials increased from 76% to 91%. The data showed that Markov probability chains may be a useful tool in evaluating treatment integrity in DTT and can have clinical utility.</p>			
10:00 am	Katrina J. Philips, Oliver C. Mudford & Douglas Elliffe	University of Auckland	The use of calibration for informing the training of observers
<p>Calibration has been used to assess the accuracy and precision of data from both novice and experienced observers. However, in previous methodological studies, observers have recorded behaviour from videos of scripted role-play scenarios. The current study was designed to assess the applied use of calibration. Data were from recordings by novice observers of the head hitting behaviour of a man with intellectual disabilities for developing an intervention. This presentation will discuss the methods for obtaining calibration samples and how the calibration analysis can inform the training observers require.</p>			
10:20 am	Mae Hensman, Oliver C. Mudford, Tina Chivers, Margaret Fincken & Gurbhajan Singh	University of Auckland; Seadrome Home and Hospital	Evaluation of sensory based activities in dementia care

We are investigating the effects of sensory based activities (SBA) on the behaviours of individuals with dementia. The concept of sensory based activities is similar to multi-sensory stimulation (a.k.a Snoezelen, sensory modulation), a type of therapy favoured by occupational therapists intended to produce benefits from stimulating the senses. This stimulation is claimed to relax individuals, reduce aggression and levels of depression, and improve mood and engagement. The ongoing project is set at a secure dementia facility where SBA is incorporated into some of the residents' programmes. Participants' behaviours are measured to assess whether there were beneficial effects, as suggested by staff. Rates of specific behaviours are compared before, during and after sensory based activities. I will present preliminary findings on three participants and some of their behaviours for one activity each.

Session 2 **Chair: T. Mary Foster**

11:00 am	Emma E. Mitchell, Oliver C. Mudford, Angela Arnold- Saritepe, Katrina Phillips, Rebecca Sharp & Denys Brand	University of Auckland	Evaluating interteaching in applied behaviour analysis graduate courses
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The traditional lecture-based model of instruction is the most widely utilised approach to classroom instruction. It is chosen by 80% of university instructors despite the growing evidence that this model is less effective than alternative methods. Interteaching is an alternative method of instruction developed from the principles of behaviour analysis. Results from an ongoing study comparing the pros and cons of interteaching versus lectures will be presented. The context for the research is applied behaviour analysis graduate level courses.

11:20 am	Rebecca A. Sharp, Oliver C. Mudford & Douglas Elliffe	University of Auckland	How representativeness is affected by variation in the dimensions of behaviour and sampling methods
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Multiple factors affect the representativeness of observation samples, and there is little research to guide choice of a representative measurement system. Dimensions of behaviour such as duration, rate and temporal distribution, have been demonstrated to affect the representativeness of observation samples. Similarly, the recording method used can affect the representativeness of a sample. Although a number of studies have evaluated discontinuous sampling methods (e.g., momentary time sampling), few studies have evaluated the representativeness of samples obtained through continuous recording. The effect of varying the duration and duration per occurrence on the representativeness of samples extracted from simulated data will be presented, as well as the effect of using continuous and discontinuous sampling methods. Practical implications for selecting representative measurement systems will be discussed.

11:40 am	Brett Furlonger	Monash University	Was Skinner right when he said that universities have come to rely on students who do not need to be taught? Towards an understanding of the learning gap between teaching and student learning of applied behaviour analysis
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Skinner articulated the relevance of behaviour analysis to education in his book "The Technology of Teaching" (1968). When teaching, academics have powerful tools to produce behaviour change if they understand that teaching involves arranging stimuli that occasion relevant behaviour, and that consequences must be contingent on that behaviour. It follows from Skinner's analysis that what students do is intimately related to what they have learned. In this study data was collected from graduate students who were required to design a

research-based behavioural intervention. Data over a three-year period were analysed and typical student problems with learning how to implement a changing criterion design were identified. Student learning difficulties were traced to teaching failures centred on motivation, performance, topography, aversive control and direct instruction.

12:00 pm	Maree Hunt, Ceara Nicolls & Anne Macaskill	Victoria University of Wellington	Student reactions to the use of live animals in behavioural psychology teaching labs
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Our third year psychology class includes labs where the students work with rats as the subjects. We were interested in whether the students considered that these labs were helpful in allowing them to understand material covered in the course and in their views of the ethical implications of these labs. To facilitate an evaluation of this component, in 2012 and 2013 the lab programme was changed to include a lab where students used a commercially available rat simulation programme (Sniffy) in the lab session before the rat labs began. This simulation programme represented the closest comparable alternative to rat labs that could be used in future years. Later in the course the students were asked to complete a survey about these labs. There was overwhelming support for the rat labs above the simulation. Ninety-two percent of students rated the rat labs as 5 or above on a 7 point scale where higher scores indicated the labs were more helpful to their learning. In contrast only 35 percent of students gave the simulation a rating of 5 or more. Eighty-six percent of the students also were clearly in favour of keeping the live rat labs in the programme. The majority of students considered the rat labs ethical (mean rating 6.2 on a 7 point scale) and considered that their view of using live animals in teaching was more favourable after taking part in the labs (mean rating 5.8 on a 7 point scale).

Session 3 Chair: James McEwan

1:40 pm	Ludmila Miranda-Dukoski, Joshua Bensemann & Christopher A. Podlesnik	University of Auckland	Reinforcement context affects relapse by reinstatement
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Extinguished behaviour may relapse. According to behavioral momentum theory, the amount of relapse is related to the baseline rate of reinforcement associated with a stimulus. Related research has shown that the amount of relapse varies with the broader reinforcement context. In the current experiments, we examined how context and reinforcer rates associated with different stimuli in a four-component multiple schedule might interact to produce relapse by reinstatement. Rich and lean components were respectively associated with high and low reinforcement rates during baseline; two additional components provided alternative contexts for the reinstating reinforcers. Regardless of components arranging the reinstating reinforcers, the amount of relapse was greater in the rich component, consistent with behavioral momentum theory. However, the amount of relapse in rich and lean components was lower when the reinstating reinforcers occurred in the additional components, especially when the additional components arranged extinction during baseline. Thus, our results suggest that the broader reinforcement context influences relapse.

2:00 pm	Jonas Chan, Vikki J. Bland & Christopher A. Podlesnik	University of Auckland	Stimulus control and resistance to extinction in combined stimulus contexts
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Behavioural persistence is dependent on the overall reinforcer rate within a stimulus context. Therefore, behavioural treatments used by applied researchers that decrease problem behaviour by concurrently reinforcing appropriate behaviour can inadvertently increase the persistence of problem behaviour. One potential method to avoid this problem is to disrupt target responding by combining the target stimulus context with a separately trained alternative-response context during extinction. The present study examined whether stimulus control affects the ability of the alternative stimulus to disrupt target responding. To that end,

we trained a richer alternative schedule with a horizontal line as the stimulus, then combined the stimulus context associated with the alternative schedule with that of a leaner target schedule during extinction while varying the line orientation of the alternative stimulus only. The disruptive effects of alternative stimuli on target responding is reduced as the alternative stimuli become less similar to that of the training alternative stimulus. Stimulus control established during training affects the ability of the alternative stimulus to disrupt target responding when combining stimulus contexts.

2:20 pm	James Fleet, Stephanie A. D'Souza & Christopher A. Podlesnik	University of Auckland	Can we separate operant and Pavlovian processes in resistance to change with discriminative-stimulus location?
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Behavioural momentum theory assumes that response rates and resistance to change are governed by operant and Pavlovian processes respectively. The current study considers the role of discriminative stimulus location on these two processes. We arranged a two-key, two-component multiple schedule, where responses were reinforced on the right key, on a rich or lean schedule for each component. The left key served as a discriminative stimulus for the active component. In a second condition, both keys served as the discriminative stimulus. Resistance to change on the response key was greater in the rich component than in the lean, but less so when the discriminative stimulus was located off the response key. This suggests that discriminative stimulus location has an effect on the processes behind resistance to change.

2:40 pm	John Y.H. Bai, Douglas Elliffe & Christopher A. Podlesnik	University of Auckland	Questioning reinforcement: Response-contingent events affect both response rate and persistence?
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Primary and conditioned reinforcers increase both the rate and persistence to behaviour through a putatively strengthening process. However, recent research shows that brief stimulus events may increase both response rate and persistence, even when uncorrelated with primary reinforcers. These stimuli provide a potential middle-ground for examining the processes underlying reinforcement and the characteristics that distinguish reinforcers from other stimuli. To explore these intriguing results, we arranged a two-component multiple schedule with equal rates of variable-interval reinforcement, and brief stimulus events on an independent variable-interval schedule in one component. Contrary to previous findings, our preliminary data suggests that these stimuli do not increase persistence or response rate.

Session 4 **Chair: Anne Macaskill**

3:20 pm	Kathleen E. Doolan, Lewis A. Bizo & James S. McEwan	University of Waikato	Behavioural variability
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The added reinforcement of variable responding will facilitate the learning of a difficult target sequence in rats, however, the added requirement of variability has been shown to impede difficult sequence learning in humans. The present study aimed to explore the notion of sequence difficulty in humans by manipulating sequence length (6-12 items). Eighty participants were randomly allocated to one of two groups: Control and Variable. In the control conditions sequences were only reinforced if they were the target sequence, in the variability conditions sequences were concurrently reinforced on a Variable Interval 60-s schedule if the just entered sequence met a variability criterion. For the six-item sequence (122121) the Control group were most likely to produce the target sequence, while for the twelve digit sequence (221112211121) there was no difference between the two groups. The Variable group were most likely to produce the target sequence for the intermediate nine-digit sequence (112212121). The use of sequence length as a definition of sequence difficulty in both the current and previous studies are discussed.

3.40 pm	T. Mary Foster, Surrey Jackson, Lewis Bizo, James McEwan & Stacey Stuart	University of Waikato	A comparison of the effects of delay to reinforcement, amount of reinforcer and quality of reinforcer on essential value of demand with hens
<p>Hursh and Silberberg (2008) proposed an exponential function to describe the curvilinear demand functions obtained in much animal research. An advantage of this was that it gave a single measure of the value of the reinforcer, alpha, which they called essential value. This measure has scalar invariance and should not be affected by dose size, amount, or duration of the reinforcer. This paper examines the essential value measure obtained from studies with hens. In each study fixed-ratio schedules were used to generate demand functions. The properties of the reinforcer differed both within and across studies. Foster et al. (2009) and Lim (2010) varied food quality using 40-min sessions. Both found that the essential value was larger for the less preferred reinforcer when consumption was measured by number of reinforcers. Jackson (2011), using sessions terminated after 40 reinforcers and with body weight strictly controlled, found essential value (based on reinforcer rate) was the same for these same two foods. Lim (2010) found the preferred food had the greater essential value when the consumption was measured as weight of food consumed. Grant's (2005) data showed longer reinforcer durations were associated with lower essential values when consumption was measured as numbers of reinforcers. For these data the weight of food consumed generally resulted in the longest durations having the highest essential value. Harris (2011) varied delay to the reinforcer and found longer delays normally gave lower essential values. Stuart (2013) compared delays to the reinforcer and inter-trial-intervals (ITIs). She found essential was lower with the longer intervals for all hens with ITI and, for some hens, with delay and was lower with delays than with ITIs. Thus the measure of essential value has been found to vary in circumstances where this would not be predicted, to be the reverse of what might be expected in some cases, and to be affected by the procedure used. The present data show that essential value does not provide an easily interpretable measure.</p>			
4:00 pm	Stuart McGill, Douglas Elliffe & Paul Corballis	University of Auckland	Investigating choice behaviour and attending by combining EAB with EEG
<p>This study implemented a discrete-trials design to investigate the effect of monetary reinforcement on human two-alternative choice behaviour. Relative reinforcer probability was varied from 3:1, 1:1 and 1:3. Scalp electroencephalography was used to assess the relationship between differential reinforcer probabilities and physiological responses, and explore the possible effects of reinforcement on the N2pc, an electrophysiological response associated with selective attending between visual stimuli. The study was intended as a proof of concept for further electroencephalography investigations of the fundamental process of reinforcement and its relation to attending. However, inconsistent results suggest further refinement of the design is required.</p>			

Poster Presentations

Kate King, Anne Macaskill & Maree Hunt	Victoria University of Wellington	Impact of free spins on persistence of slot machine play
<p>Slot machine outcomes are independent, yet gamblers often behave as if previous outcomes provide information about upcoming outcomes. This produces errors such as the gambler's fallacy and the sunk cost effect. Twenty-two participants played on concurrent, simulated slot machines with identical pay-back rates (80%) and percentages of wins, (26%) losses (67%), and one (4.5%) or five (2.5%) free spins. To examine the effect of recent outcomes on participants' choices, persistence of play and mean bet amount following each outcome type were examined. Participants bet more on average and were less likely to switch after wins or free spins than after losses. This is inconsistent with the sunk cost effect, as participants did not continue to invest on a given machine immediately following losses. It may, however, be a form of the gambler's fallacy with participants treating wins as if they signal additional upcoming wins on that alternative. This pattern can also be viewed as reflecting "preference pulses" or tendency to continue respond on a just-reinforced alternative.</p>		
Robbie Taylor, Anne Macaskill & Maree Hunt	Victoria University of Wellington	Impact of free spins on preference for slot machines
<p>This study investigated the effects of free spins and near wins on preference for slot machines. Near wins are losses that resemble wins. Peters, Hunt, and Harper (2010) found that rats produced response latencies following near wins that were longer than those following other loss outcomes, but shorter than those following win outcomes. Thirty subjects played on two concurrently-presented, simulated slot machines with equal payback rates, but only one had a (0.02) chance of winning free spins. Free spins had no influence over preference, even though slot machine users have reported that the pursuit of free spins is a particularly addictive part of playing (Blaszczynski, Sharpe, & Walker, 2001). Near win latencies were longer than win and loss latencies. Subjects bet more lines after win outcomes than loss outcomes. Results regarding free spins highlight the differences between self-reports and other behavioural measures. Findings regarding latencies following near wins are inconsistent in the literature, suggesting that arrangements of outcomes on slot machines might influence behavioural responses to near wins.</p>		
Nishita Singh, Anne Macaskill & Maree Hunt	Victoria University of Wellington	The effect of magnitude on delay discounting of consumable reinforcers
<p>The current study investigated the magnitude effect on rate of delay discounting in human subjects responding for immediately-consumable reinforcers (brief video clips) and for hypothetical money. Thirty of subjects made choices between a smaller magnitude of each commodity available immediately and a larger magnitude available after one of five delays. The size of the immediately-available reinforcer was titrated to identify indifference points for each delay, and hyperbolic functions fitted to identify discounting rates for each participant for two magnitudes of each commodity. Participants discounted smaller magnitudes of both commodities more steeply than larger amounts and thus the magnitude effect was not dependent on commodity type. This result suggests that the lack of an amount effect in previous studies with animals is unlikely to reflect the fact that those studies used immediately-consumable reinforcers while studies with humans have used hypothetical outcomes.</p>		
Lorance Taylor, Anne Macaskill & Maree Hunt	Victoria University of Wellington	The effect of varying near-win percentages on slot machine preference - the inverted U
<p>Near wins are losses that resemble wins. Research has found that near wins influence subsequent choice of slot machine (Giroux & Ladouceur, 2006), increase persistence (Cote,</p>		

<p>Caron, Aubert, Desrochers & Ladouceur, 2003), and are followed by longer response latencies than other losses (Peters, Hunt & Harper, 2010). This study further investigated the effects of near wins on preference. Two simulated slot machines with different near-win percentages were simultaneously presented to 18 participants. The percentages of outcomes that were near wins on each varied across six, seven-minute conditions: 0 vs 45%, 0 vs 30%, 0 vs 15%, 15 v 45%, 15 v 30%, 30 v 45%. The results showed significant preference for the slot with more near wins in only the 0 vs 45% and 0 vs 30% conditions. The results of this study suggest that people prefer slot machines with on which at least 30% of outcomes are near wins, but are not sensitive to other variations in near-win frequency.</p>		
<p>Karen Sluter, James McEwan & T Mary Foster</p>	<p>University of Waikato</p>	<p>The effects of reinforcement over the distribution of responses across space and time</p>
<p>Hawkes and Shimp (1975) shaped a temporal pattern of key pecking in pigeons which contributed to the idea that reinforcement following a pattern of responses strengthens the entire pattern as an operant. To extend this research, six domestic chickens are currently being shaped to a spatial pattern, which by default has a temporal element, requiring more than one response to occur for reinforcement. By making reinforcement contingent upon several responses a different approach to the form of an operant is taken. In this way the potential for reinforcement not to be temporally contiguous with the behaviour by which it is earned is being explored, and this could enable a greater understanding of varying forms of operant behaviour and contribute to the way in which fluency may be achieved by looking at the topography of the responses occurring.</p>		
<p>Ayla Jenkins, Lewis Bizo & T. Mary Foster</p>	<p>University of Waikato</p>	<p>Assessing the food preferences of the brushtail possum (<i>Trichosurus vulpecula</i>) using fixed-ratio schedules</p>
<p>This experiment will investigate the performance of brushtail possums (<i>Trichosurus vulpecula</i>) responding on increasing fixed-ratio (FR) schedules when presented with different foods. The aim is to assess to what degree food type affects responding on ratio schedules and to compare the predictions of two different quantitative models (MPR by Killeen (1994) and the Behaviour Economic analysis by Hursh and Silverberg (2008)). The possums will be exposed to four food conditions, rolled oats, cocoa puffs and barley, San Bran and Soy Protein, and each condition will consist of a minimum of two geometric series of FR schedules. Each condition will begin with a session with FR 1 and the FR will be doubled each session (FR2, FR4, FR8 etc) until no reinforcers are received across two consecutive sessions. Exponential functions (Hursh & Silberberg) will be fitted to the demand curves for each food (i.e., to the relation between the numbers of reinforcers received and the FR size) and their parameters will be compared. It is expected that the different feeds will result in different parameter values. The relation between the response rates and the FR size for each food will also be examined and the parameter estimates from the MPR model will also be compared. Results so far will be presented.</p>		
<p>Tegan Andrews, Surrey Jackson, James S. McEwan & T. Mary Foster</p>	<p>University of Waikato</p>	<p>Body weight as a motivating operation: The effect of body weight on demand in hens</p>
<p>Research on the effect of motivating operations (MO) on demand in animals has been limited. One MO that has also been investigated is body weight. Ferguson and Paule (1997) found that body weight altered breakpoint under progressive ratio schedules. The present study is interested in whether body weight affects demand for the different types of food, assessed using fixed-ratio schedules, differentially. Relevant to this is Jackson (2011), who found, using progressive ratios schedules and keeping the hens close to 80% of free-feeding body weight, that demand for two different foods was the same regardless of the food used for maintenance diet. Further, she found the same outcome using fixed-ratio schedules with session length determined by number of reinforcers, and with sessions run only when the hens was within</p>		

80+/-10% of free feeding weight. Foster et al. (2009) found that hens showed different demand for different types of food under fixed-length sessions with fixed-ratio schedules, a different food as a maintenance diet and body weights at 85% of their free feeding weight. These results differed from those of Jackson (2011). A question from this is whether it was the different body weight procedures or the session termination criterion that gave rise to this difference in results. This study aims 1) to establish the effects of different body weight maintenance procedures on demand for two different foods, with hens, using the same session termination criterion as Foster et al., and 2) to establish the effects of body weight on demand for different foods. The data that informs this research will be presented along with the data to date.

Antony Thomas	Ministry of Education-Special Education	Supporting a student with Asperger's syndrome who actively refuses to participate in school based and conventional therapeutic interventions: A video case study highlighting the role of ABI strategies
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This is a case study of a student who has been referred for behavioral services with extremely challenging behaviors (physical and verbal aggression, 'sexualized behaviors') in the school setting. "JT" is a 12 year old boy diagnosed with Asperger's syndrome. Asperger's syndrome is one of the most complex disorders/conditions, and also the least understood. Considerable confusion exists among mental health and special education professionals around autism, especially on the higher end of the spectrum/condition. According to JT's mother, "several psychologists and psychiatrists have assessed JT during his primary school years and none of them even considered the possibility of autism for JT, but they advised JT's mother to attend a number of parenting courses". When JT created major challenges at middle school, the subsequent consultation resulted in a diagnosis of Aspergers syndrome at the age of 12 years! "JT" has been excluded from a few schools and no schools in a particular town were willing to enroll him. He was then enrolled in a school in the nearby town, but JT refused to receive conventional school-based interventions. He was not even willing to allow any therapists/consultants to visit his classroom or observe him while he was in school. He refused any help from teacher aides and threatened to leave school if specialists visited him. We have implemented a number of Antecedent-Based Interventions (ABI) to support this student. The poster describes further details on the progress achieved and how these were implemented in a school setting. In addition to the description on the poster, an iPad will be mounted on one corner of the poster through which the reviewer/reader can avail the option to view and hear a few short video clips. These video clips are on the pre and post intervention behaviors narrated by the student's parent and his teacher.

Rajes Harper & Dennis Moore	Monash University	Setting the stage for success: Enhancing co-operation in a child with autism
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The purpose of this study was to investigate the effects of graduated exposure to a hierarchy of increasingly difficult requests while ignoring non-compliance and immediately reinforcing compliance to maternal requests on a pre-school child with autism. Treatment generalisation of this errorless compliance training (ECT) approach across settings and caregivers was also assessed. A single-case changing-criterion research design was employed to assess the effects of the intervention and results indicated that the procedure resulted in increased compliance levels that generalised across situations.

Notes