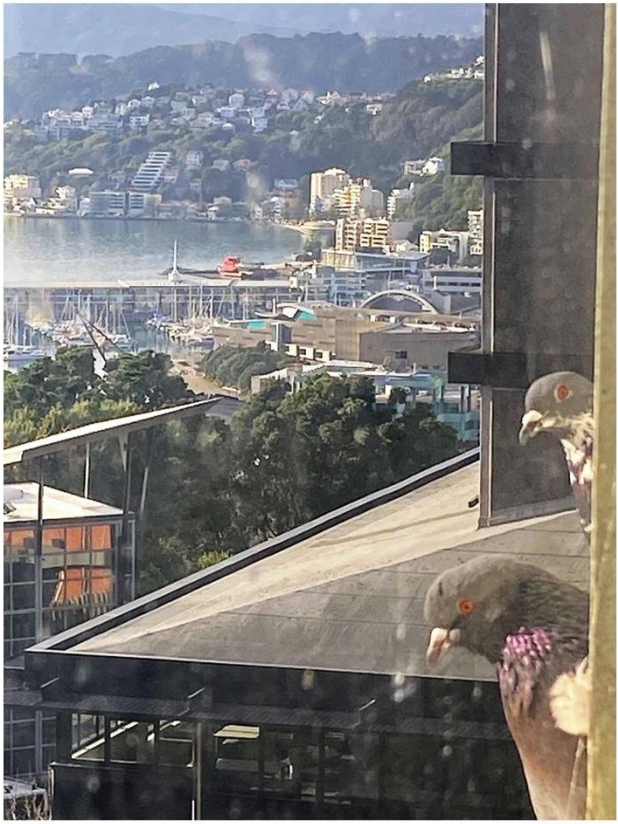
NZ Association for Behaviour Analysis

20th Annual Conference

nzaba.wordpress.com

Programme



1-2 September, 2023

Victoria University Pipitea Campus

+ professional practice symposium Thursday 31 August

Welcome to Victoria University of Wellington for the **20th** Annual Conference of the New Zealand Association for Behaviour Analysis

Conference Venue

The conference will be at Rutherford House on the Victoria University Pipitea Campus near Wellington central Railway station and the beehive. Please don't come to the main campus at Kelburn! Even though the programme cover shows Kelburn campus!

Conference sessions will be in Rutherford House Lecture Theatre 1 (RHLT1)

Rutherford House is here https://goo.gl/maps/EiLVQ5MyhUtKF7Ze8

Parking is a bit tricky around the venue. It would be ideal to arrive by train or bus or walk from one of the many hotels walking distance nearby. If you do park on the street, take notice of the parking limits and costs. The closest parking building is Stout St Parking Centre.

Registration

Register for the conference by **25 August**
https://pay.wgtn.ac.nz/Registration/booking

Registration is $30 unwaged and $150 waged.

Thursday Afternoon Professional Practice Symposium

The Society for Behaviour Analysis Aotearoa New Zealand will host a symposium starting on Thursday at 2pm in Rutherford House Lecture Theatre 3 (RHLT3). The symposium will focus on professional practice issues in ABA and include an update on society activities, panel discussions on Radical Behaviourism and: Playing nicely with others: How to work with a multidisciplinary team. and offer CEUs. All conference attendees are welcome.

Thursday Night Social Drinks and Nibbles from 6pm

If you arrive in Wellington on Thursday night, please come and meet other conference attendees at The Thistle Inn a short walk from the conference. Food and drinks available for purchase at the Thistle.

Instructions to Presenters

Talks: 12 minutes with three minutes for questions. Each session includes 10 minutes extra time for questions or slight delays.

Powerpoints: please put your slides on the presenter computer during a break sometime before your presentation. It is ideal to bring them on a flash drive but you could also download them from your email or similar

Poster Presentations: The poster session will be during the lunch break on Friday in the foyer outside the conference lecture theatre. Poster boards will be supplied to display your poster. Posters can be A0 or A1 portrait or landscape.

Conference Dinner

The conference dinner will be held on Friday night at Monsoon Poon. The dinner will be a two-course menu. The dinner costs $55 in addition to the conference fee. If you would like to attend the dinner, indicate this when you register.

Internet Access

Victoria visitor WiFi network WellingtonUniversityGuest

Joining via Zoom

You can join the conference via Zoom at
https://vuw.zoom.us/my/annemacaskill

Please register for the conference even if you plan to join via Zoom

Business meeting

We will discuss any matters related to the NZABA organisation and future conference planning at the business meeting. All conference attendees are welcome to join. Please send any agenda items to anne.macaskill@vuw.ac.nz

Programme Overview

Note: programme overview lists presenting authors, for full author lists see below

THURSDAY	
2pm- 5:30 Society for Behaviour Analysis Aotearoa New Zealand Symposium	
2:00-3:00	Panel discussion: radical behaviourism
3:30- 5:00	Panel discussion: Playing nicely with others: How to work with a multidisciplinary team
5:00-5:30	Society for Behaviour Analysis Aotearoa NZ business meeting
From 6pm conference meet up at The Thistle Inn	
FRIDAY	
8:30	Registration desk open for name badge collection
Session 1| 9:00 – 10:35 | Chair: Anne Macaskill	
	Welcome and Housekeeping
Stephanie Gomes-Ng	Self-controlled, but only when I'm foraging?
Natasha Knack	Cognitive Appraisals, Sexual Arousal, and Sexual Coercion
Rebecca Bodeker	Effects of Methamphetmine on Signalled and Un-Signalled Probability in rats using concurrent chains.
Timothy L. Edwards	Behavioural Economics and Motivating Operations
Fatimah Abdulamir	The Role of Reward on Future Decision Making
Morning Tea	
Session 2 | 11:00-12:25 | Chair: Tim Edwards	
Lana Perich	Effectiveness of Training Videos and Behaviour Skills Training to Teach Dog Training Skills to Dog-Rescue Foster Volunteers
Kristie Cameron	Keep calm and CAVY on: Assessing demand in

	the Guinea Pig
MuYun (Christina) He & Breanna Jackson	Dietary Preferences in the Chimpanzees: Preliminary Design of an Applied Study at Hamilton Zoo
Sarah Leadley & Katrina Phillips	Using the Generalisation Planner in Practice
Liam Crowley-de Thierry	Investigating emotion expression of the body through generative modelling of human gait.
12:25-1:25 Lunch and Posters	
Session 3| 1:25-2:50 | Chair: Rebecca Sharp	
Dubi Najeeb **Zoom**	Evidence based practices for young children, youth and adults with ASD
Rebecca Sharp	Scambusters: Addressing Inequalities in Internet Use by Teaching People with Disabilities Safety Skills **30 minute slot**
Amarie Carnett	Comparing Treatment Options to Promote Tacts Acquisition for an Individual with Complex Communication Needs
Sheree Briggs	ABA in Healthcare settings
2:50-3:15 Afternoon tea	
Session 4 | 3:15-4:55 | Chair: Katrina Phillips	
Thomas Shankland & (Qian Yi) Joey Cheetham Gan	Using pyramidal training in school and residential settings to increase staff skills.
Alexandrea Heels & Gabriella Crozier	How can we use SAFMEDS to improve skills in vocational training programmes.
Svetlana Daly	Soft Skills: What does the sector want.
Ana Hu	Teaching Trainee Psychologists Soft Skills
Celia Lie	A Brave New World: Lessons Learnt from Teaching Community Behaviour Change
Madeline Chant & Yesenia Molina Baron **Zoom**	Addressing Disaster Preparedness in Supported Independent Living using Behavioural Science. Recommendations for Practitioners and Researchers on how to Better Assist People with

	Disabilities Prepare for Disasters.
Conference Dinner: 7pm at Monsoon Poon	

Poster presentations- Friday lunchtime	
Chris Pouwels	The effects of “should” and “would” decision framing on probability discounting of rewards for self and others
Evangeline Cleland	Variations in Emotional Distraction Across Psychopathic Traits
Hayley Khwang Jing Chun	How Does Episodic Future Thinking Affect Delay Discounting in Waiting?
Jethro Worthington	White noise and presentation speed: testing strategies to help students with ADHD recall lecture material
Mei-Jing Lin	Meta -Analysis: Adults’ Automatic Imitation and Theory-of-Mind Processing
Nguyen Thi Kim Phuong	A happy autistic life
Svetlana Daly	Defining active listening: eDelphi
Winston Tan (Zoom)	Exposure, Expectation, Experience: How Exposure to COVID-19 Vaccine Side Effect Stories on Social Media Predicts Observer Side Effect Experiences

SATURDAY	
8:45	**Registration desk open for name badge collection**
Session 1 | 9:00-10:35| Chair Amarie Carnett	
Amarie Carnett	Society for Behaviour Analysis Aotearoa New Zealand update
Paula Araya-Herrera	Is gross motor development a cusp hehaviour?
Neville Blampied	Overall outcome of functional assessment-

	based behavioural interventions for sleep difficulties in children with rare genetic neurodevelopmental conditions
Rachel Dunkley, Jane Fullerton Lauitiitilemasina Fuhring, Alexandra eels, Lauren Hopkins, Dong Su Lee & Katharine Walker-Mead	Autonomy (30 minute slot)
Connie Gregory	Table Talk: Increasing Conversations for People with Traumatic Brain Injuries
10:35-11:00 Morning Tea	
Session 2. |11:00-12:40|Chair: Angelika Anderson	
Anastasia Sawchak **Zoom**	A Case Study for the Reduction of Rumination
Ella Bayliss	Increasing Classroom Engagement for Children and Adolescents with High and Complex Needs
Shelley Martin	Tangible versus Intangible: How are reward pathways activated in the Autism Spectrum Child?
Anna Plessas	What is the learning history of the behaviour I am observing? Using artificial intelligence to identify unknown learning histories from binary-choice data snapshots
Jack Drummond	The Implications of Nudging to Encourage Pro-Environmental Behaviour: The Moderating Effects of Biospheric Values and Carbon Footprints
Stephanie Xie	Behaviour analysis as a tool to support and understand sustainability related behaviours.
12:40 -1:40 Lunch	
1:10- 1:40 Business meeting	

1:40-3:15 Session3. Chair: Maree Hunt	
Dr Eva Laurent **Zoom**	Co-production in positive behaviour support: Empowering neurodivergent participants
Moana Billot	Tāwhairitia Ngā Ahi: Re-stoke the Fires
Geoff Potter	Rapid Control with Nonaversive Strategies: Removing Restraint and Changing the Field of Behaviour Support
John R. Wooderson, Oliver B. Roschke **Zoom**	Searching for Purpose: Unveiling the 'Why' behind What We Do
Dr. Barry S Parsonson	ABA and Clinical Psychology need each other
Prizes and Farewell	

Self-controlled, but only when I'm foraging?

Stephanie Gomes-Ng (Auckland University of Technology) Quinn Gray (University of Auckland) & Sarah Cowie (University of Auckland)

In the operant procedure for studying self-control, subjects choose between a smaller-sooner (SS) reinforcer and a larger-later (LL) reinforcer. Recent studies in behaviour ecology have compared choice in the operant procedure with a foraging equivalent, the patch paradigm. The patch paradigm is considered economically equivalent to the operant procedure, except that subjects choose between staying at a foraging patch for an LL (or SS) reinforcer or leaving that patch for an SS (or LL) reinforcer. Whereas blue jays, rats, monkeys, and humans behave impulsively – preferring the SS reinforcer – in the operant procedure, the same subjects exhibit self-control – preferring the LL reinforcer – in the patch paradigm. This paradox is thought to reflect differences in ecological validity between the procedures. In this study, we tested six pigeons in a patch paradigm in which the delay to the SS reinforcer (two food deliveries) varied from 5 s to 55 s and the delay to the LL reinforcer (four food deliveries) was 60 s. Regardless of reinforcer magnitude, our pigeons preferred the option that led to the shortest delay to the next reinforcer. Thus, our findings call into question previous research suggesting that organisms are more self-controlled in the patch paradigm. We also question whether the patch paradigm is economically equivalent to the operant self-control procedure and conclude that "self-control" in the patch paradigm simply reflects control by relative reinforcer delays."

Cognitive Appraisals, Sexual Arousal, and Sexual Coercion

Natasha Knack Hedwig Eisenbarth, & Anne Macaskill

Sexual arousal has been associated with an increased willingness to engage in coercive sexual behaviours, yet the mechanisms underlying this relationship remain unclear. One possible explanation is that sexual arousal influences a person's cognitive appraisals, which refer to their interpretation of a situation and help to determine their

behavioural responses. To explore this possibility, we examined whether impelling or inhibiting cognitive appraisals mediated the relationship between sexual arousal and participants' sexual decision making in a hypothetical sexual scenario where their partner withdrew sexual consent. We found that participants who were more sexually aroused considered a greater number of both impelling and inhibiting cognitive appraisals, but only impelling appraisals were associated with sexual decision making. Specifically, considering more impelling cognitive appraisals was associated with an increased willingness to engage in sexual coaxing, sexual coercion, and non-consensual sexual activities.

Effects of Methamphetmine on Signalled and Un-Signalled Probability in rats using concurrent chains.

Rebecca Bodeker & Randolph Grace

Pigeons show a suboptimal choice for probabilistic reinforcement in the presence of informative stimuli, which has been proposed as an animal model of gambling. However, this behaviour has been difficult to replicate in rats. In our study, rats responded on alternatives that provided 50% or 100% reinforcement with half of the sessions reliably signalled and half un-signalled. Contrary to expectation, rats preferred the optimal alternative to a greater extent in the signalled sessions compared to the un-signalled sessions. Acute methamphetamine increased preference for the 50% alternative exclusively in signalled sessions. These results suggest that rats, unlike pigeons, are able to use the information provided by the stimulus correlated with non-reinforcement to shift preference away from the suboptimal alternative and that the influence of methamphetamine is context dependent. "

Behavioural Economics and Motivating Operations

Timothy L. Edwards& Alan Poling (Western Michigan University)

Behavioural economics is concerned with the “value” of commodities (i.e., reinforcers) and, via demand analysis, offers an objective approach to defining value, a key focus of the motivating operations concept. Two key concepts within behavioural economics, substitution and complementarity, are directly relevant to motivating operations. Access to one type of reinforcer can reduce the reinforcing effectiveness of substitute reinforcers and increase the reinforcing effectiveness of complementary reinforcers. Accounting for factors that alter reinforcer effectiveness is the primary aim of the motivating operations concept, but the influences of substitution and complementarity are rarely discussed in the relevant literature. Clarifying the relationship between these two domains has practical and conceptual value; we attempt to do so in this talk."

The Role of Reward on Future Decision Making

Fatimah Abdulamir & Sarah Cowie

Research suggests that learning processes such as generalisation (the transfer of knowledge) are disrupted by reward processing deficits in populations with a social anxiety disorder (SAD). The current study investigated the relationship between stimulus type and generalisation in individuals with varying levels of SAD. Eighty-one participants were presented with social (happy and sad faces) and non-social (big and small circles) stimuli, in the presence of which the correct response would either gain a reward or avoid punishment. Once responding had stabilised, participants were presented with varying circle sizes and emotional intensities to assess the degree to which participants generalised the learnt contingencies to novel stimuli. For all participants, social stimuli facilitated learning more than non-social stimuli, suggesting that socially relevant information may be processed in a higher order than non-social. Individuals diagnosed with SAD achieved greater correct response accuracy during reward-seeking trials (Happy or Big stimulus types) than escape trials (Small and Sad stimulus types), while the opposite relationship was apparent for undiagnosed participants. This suggests that diagnosed individuals may be more driven by attaining reward, while others are driven to escape

punishment. Generalisation gradients were similar across anxiety levels and diagnosis, except that the slope was steeper for social relative to non-social stimuli for participants with some level of anxiety. No such difference was observed in participants without anxiety. Taken together, these findings suggest that discrimination of the intensity of social stimuli may be heightened in individuals with SAD and that individuals with a clinical diagnosis of SAD may be more responsive to rewards as opposed to avoiding punishment. This should be taken into consideration in the development of treatment practices

Effectiveness of Training Videos and Behaviour Skills Training to Teach Dog Training Skills to Dog-Rescue Foster Volunteers

Lana Perich, Rebecca Sharp & Jo Thorne

Dog rescue organisations are constantly inundated with dogs requiring homes. Perceptions about rescue dogs being badly behaved or untrainable can make rehoming difficult, especially while rescues often lack sufficient resources to provide effective, consistent training for their foster volunteers and the dogs in their care. We first aimed to gain insight into the public's preferences and attitudes regarding dogs adopted from different sources (such as rescues, breeders and pet shops), as well as their beliefs about dog behaviour and training more generally. An online, anonymous questionnaire was shared across social media platforms. Because there is some evidence that teaching dogs in shelters certain behaviours increases their chances of adoption, the second component of our study involved developing a training programme to equip foster volunteers with effective dog training skills. The skills we taught are rooted in applied behaviour analysis (differential reinforcement, shaping, and prompt fading or "luring" in the canine training field), and the foster volunteer participants were taught to use them to train their foster dogs to engage in desirable behaviours. We compared video modelling with brief written instructions to behaviour skills training (BST) to determine whether simple video-based intervention was sufficient for skill acquisition or whether more comprehensive training (i.e., BST) was required.

Keep calm and CAVY on: Assessing demand in the Guinea Pig

Kristie Cameron, Thomas Walker & Cameron Hoult

Guinea pigs (Cavia porcellus) will climb an elevated ramp to obtain a resource, however, in previous experiments guinea pigs tended to fail the climb at the same height. It was hypothesised that, at this height and steep angle of the ramp, there was a lack of line of sight with the food. In Experiment 1, 10 guinea pigs were trained to climb the ramp. Ramp height was increased 3cm per day and time to climb the ramp was recorded in two conditions; a control (Non-Mirror), and another where a mirror at the top of the ramp ensured continued line-of-sight with the food reinforcer. In Experiment 2, ramp climbing was used to measure the validity of preference assessments in identifying the most- and least valued food in seven guinea pigs, which was then tested as a reinforcer for ramp climbing. In Experiment 1, guinea pigs showed faster ascents up the ramp as the height increased, with greater inelastic demand (faster movement) shown in the Mirror condition. Most guinea pigs reached higher ramp heights in the Mirror condition than Non-Mirror condition, however, there was no significant difference in the heights reached in either condition. In Experiment 2, the preference assessments identified the same most- preferred foods for five guinea pigs but never the same least preferred food. Most guinea pigs showed inelastic demand as ramp height increased for most-preferred foods, and elastic demand for least preferred foods. The ability to measure value of commodities in animals, such as a cavy, using a ramp gives scope for informing husbandry practices for these animals and provides a tool for measuring further complex behaviours and abilities in guinea pigs.

Dietary Preferences in the Chimpanzees: Preliminary Design of an Applied Study at Hamilton Zoo

MuYun (Christina) He, Breanna Jackson Agustín Pérez Bustamante-Pereira, Anuradha Jayasinghe, Sarah Cowie & Javier Virues-Ortega

This presentation illustrates the early stages of an applied study on chimpanzees' dietary preferences currently being conducted at Hamilton zoo. To contribute to the management of captive chimpanzees, the study aims to establish a clear picture of the

hierarchy of preferences of a given individual towards food groups including nuts, fruits, and vegetables. This approach can help zoo keepers to monitor preferences towards new food items being introduced to the animals' diet and provides a preliminary step towards a technology for modifying dietary structure in the chimpanzee. We used a brief paired-stimulus preference assessment followed by a reinforcer assessment. Specifically, the chimpanzees participated in a three-part pilot procedure: (1) trained to pick preferred option from the two food choices, (2) modified paired-stimulus preference assessment based on Fisher et al. (1992), and (3) brief progressive-ratio reinforcer assessment. The current presentation will focus only on the methods of the study and the results of a preliminary pilot session as the study design continues to be fine-tuned.

Using the Generalisation Planner in Practice

Sarah Leadley & Katrina Phillips

Planning for generalisation should be undertaken as part of the development of any plan for behavior change at the outset, not as an afterthought. An intervention plan for a referred behavior should include consideration of desired generalization across behaviors, stimuli, settings, and people, with the last being maintenance of behavior change in the future beyond the intervention. In this presentation we will discuss the application of the "Generalisation Planner" (Arnold-Saritepe et al., 2023) in relation to interventions that targeted medication acceptance for two young children."

Investigating emotion expression of the body through generative modelling of human gait.

Liam Crowley-de Thierry, AProf Hedwig Eisenbarth & Prof Bastiaan Kleijn

Emotion expression research has strongly focussed on the face and voice as emotion communication modalities, with the body being relatively understudied. Although early research suggested body movement was limited to emotion expression intensity and did not

differentiate between classes of emotion, more recent research is suggesting that the body does indeed communicate specific emotions. Common practice in the research of the emotion expression of human walking (gait) involves using pre-recorded videos or point light displays as stimuli. Videos are much more ecologically valid than point light displays yet but are much harder to control for potential confounds in the stimuli. On the other hand, while point light displays afford much higher experimental control, the richness of more subtle body movements contributing to emotion expression is lost. This research proposes a potential solution: generative modelling. Leveraging a large motion capture dataset consisting of emotionally expressive human gait, we have built a generative model capable of synthesising new motion capture animations as well as the ability to control emotion class and intensity. This research model offers a third option beyond video recordings and point light displays, affording fine control of stimuli (omitted body parts, velocity, etc) like that of point light displays, while being much closer to bona fide videos of human gait. We demonstrate this model as a tool for future research into the emotion expression of human gait., and present ongoing research currently using this model.

Evidence based practices for young children, youth and adults with ASD

Dubi Najeeb

Kanner (1943) and Asperger (1944) in the 1940s discovered autism as a human condition, individuals responsible for the education and care of children and youth with autism spectrum disorder (ASD) have been dedicated to providing effective practices and programs. Such efforts continue today. The increased prevalence of ASD has intensified the demand for effective educational and therapeutic services, and intervention science is now providing evidence about which practices are effective. This report aims to describe a process for identifying evidence-based practices (EBPs) and delineate practices that have sufficient empirical support to be termed “evidence-based.” In this

introduction, we will briefly review the current conceptualization of ASD, explain the difference between focused intervention practices and comprehensive treatment models,

Scambusters: Addressing Inequalities in Internet Use by Teaching People with Disabilities Safety Skills

Rebecca Sharp, Katrina Phillips, Jaslyn Teo, Massie Khezri Nasab & Lorcan Grimes

There is evidence that people with disabilities are more likely to experience digital inequity than people without disabilities. Additionally, carers can feel the internet is particularly unsafe for people with disabilities, which can lead to gatekeeping and restricted access. One way to mitigate the risks in using the internet for people with disability is to ensure that they have the skills to prevent harm. This might also support carers to be confident to promote and support internet access. Therefore, we designed and implemented a training for people with intellectual disabilities that a) taught discrimination between what is a scam and what is not, and b) what to do when they are targeted in a scam (using behavioural skills training). In an extension of the initial training, we assessed generalization to novel stimuli and whether the training could be streamlined both with regard to the method and the specificity of the content (i.e., teaching 'stranger danger' more generally than teaching to identify scams specifically). In this symposium, we will give an overview of the current understanding of cybercrime (e.g., tactics, misconceptions), the necessity to teach safety behaviours, and present the data from our training programme. "

Comparing Treatment Options to Promote Tacts Acquisition for an Individual with Complex Communication Needs

Amarie Carnett, Kelly Bush, & Jasmine Murphy

Individuals with autism who have limited speech production are often taught to use augmentative and alternative communication (AAC) modalities. Previous research has indicated that the use of AAC systems can also be used to promote vocal speech production.

However, for older individuals with complex communication needs, it is less clear what considerations should be made when determining intervention components. The current research aims to provide a framework of analysis by utilizing a functional analysis of verbal behavior (FAVB), to help determine the communication needs and identify possible treatment options. Following the FAVB an alternating treatments design was utilized to identify which intervention options helped promote vocal speech production. The intervention comparison phase evaluated two treatment options, traditional vocal prompting and SGD-based self-prompting, to determine the best treatment option. Findings of this study provide support for the use of FAVBs and treatment comparisons to best facilitate individualize treatment plans.

ABA in Healthcare settings

Sheree Briggs

Using pyramidal training in school and residential settings to increase staff skills.

Thomas Shankland and (Qian Yi) Joey Cheetham Gan Katrina Phillips, Gill Mudford, & Yvonne Chang

Behaviour skills training (BST) has been used to effectively teach a range of skills to people with and without disabilities. However, one of the limitations of the BST is that it can be time-consuming and costly if it requires the "expert" to teach all trainees individually. One option to overcome this barrier is to use pyramidal training or a train-the-trainer model. The current talk will outline two studies in which we used pyramidal training to teach school staff about instructional control and residential support staff how to provide effective choices. We will discuss the effectiveness of the methods, the limitations, and recommendations for moving forward.

How can we use SAFMEDS to improve skills in vocational training programmes.

Alexandrea Heels, Gabriella Crozier& Katrina Phillips

Say All Fast Minute every day shuffled (SAFMEDS) is a procedure that has been used to increase fluency of a range of skills for a range of populations. The current research projects aimed to assess the effectiveness of SAFMEDS in increasing “café” and “picking and packing” skills in two vocational training programmes, where the trainees were all neurodivergent (predominately people with Intellectual disabilities and autistic individuals). The current talk will discuss the results and the variations in methods required to make SAFMEDS accessible for this population.

Soft Skills: What does the sector want.

Svetlana Daly Dr Katrina Phillips & Dr Clare McCann

Soft skills are paramount for professional success. We are all in agreement that they are essential. Employers seek specific soft skills in their employees. But what do the clients want? We asked the consumers of behaviour services in Aotearoa what soft skills they think are essential and what we, as behaviour specialists, can do better. Stratified focus groups were run for the following groups: Behaviour Analysts, Professionals, and Clients. A handful of interviews were conducted with parents that have received behaviour support services for their children. Focus group and interview data were analysed using reflexive thematic analysis. Themes and professional implications will be discussed in the presentation.

Teaching Trainee Psychologists Soft Skills

Ana Hu & Angela Arnold-Saritepe

A growing body of research tells us that relating to the people we support is an essential element in facilitating behaviour change. Often referred to as 'soft skills,' by demonstrating compassion and empathy in community-based practices. Despite the importance of applying these skills, educational institutions often target teaching technical skills and neglect soft skills training. This study was a replication of Canon and Gould (2021), who used clicker training to teach soft skills (1) Appreciation, (2) Mindfulness, and (3) Asking Questions with Curiosity to behavioural professionals. The current study utilises the same procedure to teach these same skills to graduate students in behavioural analysis. A multiple baseline design across skills was used to evaluate the acquisition and effects of the taught soft skills. The participants interviewed a hypothetical client (scenarios were randomised).

A Brave New World: Lessons Learnt from Teaching Community Behaviour Change

Celia Lie, Sabrina Goh & PSYC328 Students

In "Brave New World" by Aldous Huxley, an entire society is built from conditioning people to behave in a particular way from birth. Of course, this is an extreme example of societal behaviour change – but is it possible to modify the behaviours of people within a community so that they engage in more pro-social behaviours and fewer anti-social behaviours? That is the question we set for our third-year undergraduate students at the University of Otago. Since 2019, our students have worked in groups to identify local community issues and implemented interventions to try and change people's behaviour to address these issues. These have included projects on the use of campus spaces, health and fitness, and sustainable practices. In this talk, we will present some of their projects and findings, as well as some general lessons learnt from teaching community behaviour change.

Addressing Disaster Preparedness in Supported Independent Living using Behavioural Science. Recommendations for Practitioners and Researchers on how to Better Assist People with Disabilities Prepare for Disasters.

Madeline Chant, Yesenia Molina Baron, Megan Borlase, & Oliver Roschke

14-15,000 earthquakes happen every year in New Zealand and climate change has led to an increase in severe weather events such as extreme rainfall and floods, causing significant impacts on families and communities across the country. The frequency and severity of these events is expected to continue to escalate (Stough, 2017) increasing the need for disaster preparedness. People with disabilities are more vulnerable, especially if they get cut off from their support networks, need to evacuate their residence, or cannot access essential supplies or facilities during these events. There is a significant gap in behaviour analytic research on how to best prepare individuals with disabilities and their direct supports for natural disasters. To gain a better understanding of critical components of disaster preparedness and associated support needs of those likely to be most vulnerable, we developed a survey to investigate preparedness of individuals with disabilities and those who assist them during their daily routines. Additionally, we reviewed behaviour-analytic and non-behaviour analytic literature to inform the design of assessment and intervention procedures to address the results of our initial survey. This presentation will provide an overview of our preliminary survey findings and follow-up measures from Supported Independent Living services in Central and Northern NSW. We will provide recommendations for practitioners and researchers on how to better assist individuals with disabilities to prepare for natural disasters.

Target Audience: Behaviour support practitioners, support workers, guardians, researchers and direct service managers

1. Participants will gain a better understanding of critical elements of disaster preparedness for individuals with disabilities and their support network, and why these are important.

2. As an outcome of attending this presentation, participants will be able to identify initial steps involved in assessing the level of preparedness of the individual with a disability and their supports for natural disasters.

3. Participants will also be able to identify relevant literature that can help them design interventions to better prepare their clients for such events

Is gross motor development a cusp behaviour?

Paula Araya-Herrera, Katrina Phillips, Karen Waldie & Lisa Underwood

In many allied health professions, gross motor development is generally seen as relating to physical development and not influencing other areas of development. Although we recognise that physical development is important in and of its own right, as it relates to the development of large muscle groups and the ability to perform physical activities such as crawling, walking, running, jumping, and throwing. From a behavioural perspective, aspects of gross motor development might act as a cusp behaviour for the development of other behaviours and other areas of development. This talk will discuss our current knowledge and future directions regarding the influence of specific gross motor developmental milestones on other areas of development and the potential mechanisms by which this influence is occurring.

Overall outcome of functional assessment-based behavioural interventions for sleep difficulties in children with rare genetic neurodevelopmental conditions

Emma Woodford, Laurie McLay, Karyn France & Neville Blampied

Individuals with rare genetic neurodevelopmental conditions (RGNC) have chromosome abnormalities causing specific syndromes (e.g., Angelman, Prader-Willi, & Fragile X syndromes). Common phenotypic features are intellectual disability and a high prevalence of sleep difficulties, including circadian rhythm disturbances, sleep onset delay (SOD), night wakings (NWs), unwanted bed-sharing, early waking and

excessive daytime sleepiness. McLay et al. (2021) reported positive overall outcomes for the treatment of sleep difficulties in autistic children using individualized functional-assessment based behavioural interventions. This study replicated this outcome study with 26 children (aged 18 months – 19 years) with RGNC. Interventions included circadian, antecedent and/or consequence modifications implemented by parents, mostly by telehealth methods. Overall outcomes were assessed by the Sleep Problems Severity (SPS) scale and the Children's Sleep Habits Questionnaire (CSHQ). Cohen's dav effect sizes were -1.26 [95%CI = -1.85, -.67] (SPS) and -1.35 95%CI = -1.88, -.81] (CSHQ). Improvements in sleep were observed for 24/26 participants and maintained at long-term follow-up for 13/16 children. Age, gender or psychological variables did not moderate response to treatment. Interventions were rated favourably by parents. Results suggest function-based behavioural interventions are an effective and socially valid method for treating sleep difficulties in children with RGNC."

Autonomy

Rachel Dunkley, Jane Fullerton, Lauitiitilemasina Fuhring, Alexandra Heels, Lauren Hopkins, Dong Su Lee, Katharine Walker-Mead Rachel Dunkley, Jane Fullerton, Lauitiitilemasina Fuhring, Alexandra Heels, Lauren Hopkins, Dong Su Lee, & Katharine Walker-Mead

Autonomy, the ability of a person to make their own decisions. While we like to think this is something we all have, many of those whom we support are excluded from decision making about their own lives. The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) recommend all disabled people receive support to develop their autonomy. Support, advocacy and enablement have been considered to be key elements for personal autonomy to flourish. This can take many forms, from supported decision and choice making to helping people learn how to do things that are important to them. This year the Behaviour and Learning interns, School of Psychology, University of Auckland bring to the NZABA conference a collection of

applied examples of enabling autonomy in the day to day lives of those they support.

Table Talk: Increasing Conversations for People with Traumatic Brain Injuries

Connie Gregory Connie Gregory, & Angela Arnold-Saritepe

Following a traumatic brain injury (TBI), social isolation and feelings of loneliness are commonly reported. Such experiences have been associated with a reduced quality of life and slower rehabilitation for people with a TBI. One suggested way of overcoming social isolation is to support an increase in conversation. Rajagopal et al. (2022) showed an increase in conversation between people living in a dementia care unit when textual prompts were added to the dining room table. This study seeks to replicate the Rajagopal et al. study with adults with a TBI living in residential rehabilitation homes. Textual prompts used in the study are personalised conversation starters that are tailored to each participants interests. It is hypothesised that the introduction of a placemat featuring a textual prompt onto participant's dining tables will increase the duration of mealtime conversation. Increasing conversations may improve social interactions and reduce feelings of loneliness and social isolation, leading to an improved quality of life.

A Case Study for the Reduction of Rumination

Anastasia Sawchak & Charlie Baxter

This case presents a novel intervention in the treatment of automatically maintained rumination. A multiple-treatment reversal design was used to introduce various interventions to reduce the post meal rumination of a young man with autism. One-minute partial interval recording data was collected from the time a meal was served and continued for a minimum of 30-min. The first treatment condition consisted of water rescheduling, in which water was unavailable 30-min prior and 1-hr post meals. The second treatment condition involved sprinkling garlic powder onto prepared food. During the 3 baseline phases rumination was observed during 66% of intervals. During the water rescheduling phase rumination occurred during 85%

of intervals. In the treatment condition that involved the addition of garlic powder to cooked food, rumination was observed during 37% of intervals. The novel intervention of introducing garlic to reduce rumination illustrates the importance of constantly thinking outside the box to design new and effective interventions.

Increasing Classroom Engagement for Children and Adolescents with High and Complex Needs

Ella Bayliss & Angela Arnold-Saritepe

School plays an instrumental role in the learning and development of invaluable life skills for children and adolescents. A long history of research has demonstrated that children's active participation in the opportunities offered in the classroom is a strong predictor of life satisfaction. Research has also illustrated that school participation is significantly decreased for children with high and complex needs. The current research compares behavioural interventions, both an enriched environment and a check-in procedure, to determine the most effective way to increase classroom engagement for learners with complex needs. It is also the aim of this research to consider the learner's emotional response to these interventions. Research undertaken with disabled people typically relies on satisfaction questionnaires filled in by family or staff to address the acceptability of an intervention. However, available research has suggested that indices of happiness for children with disabilities can be reliably defined and observed. This research will use these affective behaviour measures to address the correlation between engagement and intervention preference.

Identification of the possible neurological differences in the way that typically developing children and children with ASD acquire social skills and respond to social interactions: A systematic review of the evidence

Shelley Martin & Angelika Anderson

Autism Spectrum Disorder (ASD) is a disorder characterized by behavioural and communication variations, including unusual dyadic

and group interactions. Low rates of social engagement in children with ASD likely contribute to low rates of skill acquisition across multiple domains. It seems that social interactions are not as reinforcing for these children as they are for typically developing children. In this presentation, I will discuss the results of a currently ongoing systematic review of fMRI imaging studies on how the brain activates neurologically in response to a range of tasks involving the sensory systems, processing pathways, and motivation in relation to social situations. These studies compare age and IQ-matched, typically developing children, with children who have been formally diagnosed with ASD by a paediatrician, psychologist, or psychiatrist.

Reviewing the evidence provided by MRI studies, we seek to answer several questions regarding possible differences in the activation strength of neural responses that occur in social situations for typically developing children and children with ASD. Our preliminary findings suggest that children with autism have both hypoactive and hyperactive responses across regions neurologically in relation to social reinforcement depending on the sensory system involved. The auditory system is the first sensory system to activate, with babies responding to their mothers' voice as early as the third trimester. Tasks involving sounds and voices, including the mother's voice have shown that brain regions in autistic children often do not activate with the same strength as typically developing children. Visual tasks that simulate eye gaze and attention have been shown to activate the neural pathways in some regions of the brain too strongly, with gaze aversion being suggested as a skill that is acquired to moderate the discomfort experienced due to the overactivation. This is relevant to ABA due to the role eye gaze and shared attention play in acquiring age-appropriate social behaviours and language skills. The preliminary findings also suggest that commonly used social reinforcers such as a smile, nod, and a thumbs up don't activate the pathways necessary for imprinting a behaviour reliably. As a primary reinforcer, food is correlated with a strong reinforcement signal in the brain and may act to boost the signal in the neural pathways when paired with social reinforcers increasing the response to social signals.

What is the learning history of the behaviour I am observing? Using artificial intelligence to identify unknown learning histories from binary-choice data snapshots

Anna Plessas Dave Parry, Sarah Cowie & Jason Landon

Learning history offers insights into an organism's past experiences and contingencies that have influenced its behaviour, aiding the understanding of behaviour. It can help predict an individual's response to future environmental and contextual factors. But what if the learning history is unknown? How can we 'predict' this information in order to optimise new learning experiences that will help an individual develop better adaptive behaviours?

Advancements in 'artificial intelligence' have opened up avenues to pose alternative questions to solve current challenges. This talk will present studies using artificial spiking neural networks to make 'predictions' of types of past learning histories based on current behavioural patterns without manipulating the reinforcer-behaviour relationship. Such networks are cheap and easy to train and use. The implications for both clinical and basic research will be discussed.

The Implications of Nudging to Encourage Pro-Environmental Behaviour: The Moderating Effects of Biospheric Values and Carbon Footprints

Jack Drummond

Behaviour change is a crucial tool for mitigating climate change, but it should be applied ethically and equitably. An online survey was conducted, which included a charity selection question as a proxy measure for pro-environmental choice. Half of the participants received a neutral charity question, and the other half received a default-framing nudge with the pro-environmental charity presented as the default. The nudge was effective at non-consciously encouraging participants to make the pro-environmental choice (95% versus 58% in the control). In the control group, biospheric values and carbon footprints correlated with the pro-environmental choice. However, in the treatment group, carbon footprints correlated with the pro-

environmental choice but biospheric values did not. Unlike biospheric values, carbon footprints moderate the effectiveness of a nudge. The nudge was less effective for participants with higher carbon footprints. The study confirmed that nudges can promote pro-environmental behaviour. However, it highlighted key ethical risks including inequitable results and the need for holistic measures of success."

Behaviour analysis as a tool to support and understand sustainability related behaviours.

Stephanie Xie

Behavioural research on sustainability-related behaviours has focused on antecedent and consequence-based interventions involving lineages of single-operant contingencies, often conducted within a controlled or simulated setting, such as offices or university campuses. This talk intends to share the findings from a review that highlights the need to additionally consider concepts such as meta and macro-contingencies, especially when discussing social issues such as climate change and sustainability. In the context of the current PhD research, we will present a practical example of how this can be applied and understood as part of a funded food scrap trial in Northcote.

Searching for Purpose: Unveiling the 'Why' behind What We Do

John R. Wooderson & Oliver B. Roschke

In 1968, Baer, Wolf, and Risley outlined the key principles of ABA in their seminal paper titled ""Some Current Dimensions of Applied Behavior Analysis."" Since then, several definitions and position statements about ABA have been developed. While they may vary slightly in wording, they all share the common theme that ABA is a scientific approach based on the principles of behaviorism, aimed at understanding and improving socially significant behaviors.

Although the focus on socially significant behavior change is a cornerstone of ABA and continues to be frequently referred to when describing the purpose of our discipline, the concept remains poorly defined, seldom measured, and reported on. This lack of clarity leaves

those who implement behavioral interventions with little guidance on how to evaluate the social impacts of their practices. Moreover, we believe that this discrepancy further contributes to an ongoing and disproportionate focus on behavior change as the sole measure of our interventions.

To address this issue, we propose the urgent need for a clear purpose to guide the application of ABA when conducting behavior support. During the presentation, we will explore a constructional (Goldiamond, 1974) conceptualization of this purpose, advocating for greater genuine choice and degrees of freedom for the people we serve. This will include case studies to illustrate a purposeful approach to ABA-based behavior support."

Tāwhairitia Ngā Ahi: Re-stoke the Fires

Moana Billot

Reigniting the kōrero around cultural safety

Rapid Control with Nonaversive Strategies: Removing Restraint and Changing the Field of Behaviour Support

Geoff Potter & Matthew Spicer

Crisis management procedures have historically included restrictive practices (RPs) of physical restraint, mechanical restraint and seclusion. The Association for Behavior Analysis International (ABAI) placed on their website in 2010 a statement on restraint and seclusion noting that “ABAI supports the position that treatment selection should be guided by the principle of the least restrictiveness.” Current regulations clearly argue for the reduction, and ultimately, elimination of these RPs. Unfortunately, crisis management protocols and behaviour support plans continue to include RPs. The field recognizes that restrictive procedures are overused and often misused in schools, institutions, group homes, and other treatment settings. Data on the unauthorised use of RPs is publicly available. Reports on authorised use of RPs is not as transparent or widely shared. Continued reduction in unauthorised use of RPs is critical; however, reduction and elimination

of justified use of RPs within authorised plans is also imperative. This paper presents data on largely underutilized and unrecognized contributions the science of behaviour analysis can make in reducing the use of restraint, seclusion, and other RPs in rapidly and safely bringing a potentially dangerous and harmful behavioral episode under control.

Co-production in positive behaviour support: Empowering neurodivergent participants

Dr Eva Laurent

Positive behaviour support (PBS) aims to improve the quality of a person's life. However, a recent report indicated mixed and inconclusive results about positive behaviour support effectiveness (Spivakovsky, Steele, and Wadiwel, 2023). What if the problem is in the assumption that neurodivergent individuals require 'fixing' and in the aim that they should behave as if they were neurotypicals (Schuck, Tagavi, et al., 2022; Veneziano and Shea, 2023)? This paper discusses how to be person-centred positive behaviour support services need to undertake a coproduction approach. Co-production practices are increasingly being promoted to develop person-centred healthcare and mental health services (Farr, 2018). Co-production goes beyond the engagement and consultation of the participant and their support team but sees the participant as a key knowledgeable asset of the intervention process, developing interventions 'with' the participant (Slay and Stevens, 2013). In coproduction, the participant and the intervention specialist share degrees of power to play an active role (Farr, 2018). Specifically, undertaking a coproduction approach enables person-centred interventions that are most purposeful for the person (Batalden, 2018). However, research on co-production in PBS is limited.

Case examples will illustrate how coproduction can be applied to PBS and with participants with different communication abilities. This paper also provides preliminary data that demonstrate the benefits of behaviour support plans coproduction in supporting neurodivergent people to achieve their goals, increase their quality of life, and reduce behaviours of concern and restrictive practices.

Undertaking a co-production approach will not only support a reduction of the behaviours of concern but provide a sustainable outcome by increasing individuals' self-esteem and self-advocacy.

ABA and Clinical Psychology need each other

Dr. Barry S Parsonson

ABA has much to offer Clinical Psychology, including principles of behaviour and behaviour change strategies, including ACT, plus use of single subject design to demonstrate therapeutic efficacy. Equally, Clinical Psychology can contribute assessment strategies, knowledge of mental health conditions and additional intervention skills, such as CBT, to broaden the range of competence and capabilities of ABA practitioners, thus broadening their practice skills and employment opportunities within and beyond ID and ASD. These topics are outlined and discussed."

Presentation Abstracts- Posters

The effects of "should" and "would" decision framing on probability discounting of rewards for self and others

Chris Pouwels & Anne Macaskill

We examined the effects of "should" and "would" instructions on probability discounting of rewards for self and others. Although "should"/"would" differences have been widely studied in social psychology, only one prior study has investigated normative framing in probability discounting (Białaszek et al., 2018, no significant difference found). In delay discounting, the prevailing assumption is that participants "should" choose the later or self-controlled option. However, probability discounting offers a normative alternative: maximising expected utility. We used a titrating-amount procedure to investigate normative framing effects on probability discounting of a hypothetical money reward. Because studies of probability discounting show that risk preferences can differ depending on whether the decision is made for ourselves or someone else, half the participants completed the task as if making decisions for themselves, and half for

someone else. Results are currently being analysed. We are examining both the best-fitting hyperbolic discounting function and the area under the curve measures of discounting. Discussion is likely to focus on the implications of the findings for research on impulsivity and risky choice, heuristic selection, and methodological issues.

Variations in Emotional Distraction Across Psychopathic Traits

Evangeline Cleland, Associate Professor Gina Grimshaw & Associate Professor Hedwig Eisenbarth

To protect your physical and social well-being, it is important that you engage appropriately with emotional information in your environment. Individuals high in psychopathic traits may show deficits in doing so. However, it remains under investigation whether the observed emotion-processing deficits in psychopathy are due to a generalised attentional deficit, or if it is indeed a specific deficit in their processing of emotional stimuli. In this study, we are investigating how distraction by emotional images varies across psychopathic traits (Fearless Dominance, Impulsive Antisociality, and Cold-heartedness). We hypothesised that only individuals high across all traits will show decreased distraction to the emotional images. Distraction might also vary as a function of valence: if individuals high in psychopathy show reduced distraction to both types of emotional distractors, this will support attention-deficit accounts of psychopathy. However, if reduced distraction is observed only with the negatively valenced distractors, this will support emotion-processing accounts.

In this computer-based lab study, we are assessing emotional distraction by presenting a letter-identification task accompanied by a central distractor image (IAPS; either emotional (negatively valenced = gore, positively valenced = erotic), neutral, or scrambled versions of each) to participants. We will then create individual distraction indices (DI) from their mean reaction times in each trial type (RTIntact – RTScrambled). Finally, we are assessing individuals' psychopathic traits using the PPI-R-20, to produce scores of Fearless Dominance, Self-centred Impulsivity, and Cold-heartedness.

We will analyse these trait scores dimensionally across DI for negative, positive, and neutral images. Linear mixed models will assess how distractor valence, PPI trait scores, and interactions between these predict DI. Main effects of PPI traits will indicate support for the attention-deficit accounts, while interactions of PPI traits with valence will indicate support for the emotion-processing accounts. These findings will help us further our understanding of the cognitive mechanisms behind this phenomenon in psychopathy, which may help guide future interventions for antisocial behaviour related to these psychopathic traits.

How Does Episodic Future Thinking Affect Delay Discounting in Waiting?

Hayley Khwang Jing Chun & Anne Macaskill

Delay discounting is the process by which the value of upcoming rewards decreases when rewards are delayed. Sometimes during the delay to a reward people must wait losing access to other reinforcers and enduring boredom. In other situations delayed reinforcers are merely postponed and waiting is not required. The process of thoroughly picturing possible future events is known as episodic future thinking (EFT). EFT has been tested and found to lessen delay discounting in postponing conditions, but its effects remain unknown in waiting conditions. The present study aimed to examine the effects of EFT on delay discounting rates in hypothetical waiting conditions. We found that EFT did not have a significant effect on delay discounting in waiting conditions, which suggests that EFT is only helpful in reducing delay discounting in postponing conditions.

Meta -Analysis: Adults' Automatic Imitation and Theory-of-Mind Processing

Mei-Jing Lin Jason Low & Anne Macaskill

Many studies examining the imitation-inhibition task (also called the automatic imitation task; Brass et al., 2005) have demonstrated that adults tend to imitate others' congruent motor actions automatically. Theory-of-mind (TOM) refers to the ability to expect someone to

behave in a way that is contrary to the facts because of how the individual is mentally representing the world (Apperly & Butterfill, 2009; Low & Perner, 2012). Automatic imitation and TOM processing are often studied separately, and researchers have only recently asked whether the processing of false belief or spontaneous tracking of other's visual perspective is associated with the control of automatic imitative behaviours. However, the findings regarding the link between TOM and the control of imitation are inconsistent. Therefore, we conducted a meta-analysis to examine the relatively few studies on the relationship between automatic imitation and TOM. The meta-analysis revealed no significant correlation between automatic imitation and TOM. However, there was a significant automatic imitation effect in the studies included. These findings confirm that automatic imitation is a stable effect, regardless of any purported cognitive similarities between TOM (e.g., false belief/visual perspective tracking) and management of the self-other motor representations.

A happy autistic life

Phuong Nguyen Thi Kim Phuong

They come from various backgrounds of family cultures which have been affecting them gently considerably. Indeed, each factor will add different ingredients to the bowl of happiness of the autistics. How the parents glare or stare at them at any time in a day, how they are talked to at any moment in the morning, how they are behaved to at any second during the breakfast time will definitely make them more annoyed or extremely happy. We are building happiness for the autistics from the simple tiny things in life, in which not only the autistics themselves feel fulfilled but their surrounding people share the similar comfort state.

Definining active listening: eDelphi

Svetlana Daly Dr Katrina Phillips & Dr Clare McCann

This is a participant recruitment poster. Inviting experts to take part in a two-round eDelphi survey defining active listening. Potential participants will have an opportunity to ask about the project. Delphi

process is about reaching a consensus on an operational definition of active listening as a soft skill. As behaviour analysts, once we have an operational definition, we can then teach the required skill.

Exposure, Expectation, Experience: How Exposure to COVID-19 Vaccine Side Effect Stories on Social Media Predicts Observer Side Effect Experiences

Winston Tan Kirsten Barnes, Kelly Clemens, Andrew Geers, Evan Livesey, & Ben Colagiuri

The use of social media is implicated in the development of anti-vaccine attitudes. However, research into its influence on the vaccination experience is limited. This prospective study examined how exposure to anecdotal reports of COVID-19 vaccine side effects on social media was associated with observers' subsequent vaccine experiences. 538 Australian adults indicated the COVID-19 vaccine side effects seen reported by users on social media and the degree to which they themselves expected to experience side effects (T1). After their first (T2; n = 303) and second (T3; n = 158) doses, participants reported the side effects they experienced. The severity of side effects viewed on social media predicted the observers' first dose side effect experience. This relationship was mediated by side effect expectations. Several psychosocial factors including a preference for social media as a vaccine information source strengthened the influence of social media exposure on expectations. Exposure to anecdotal health information on social media has a significant impact on our vaccine experiences and the expectations driving this association are amplified by a multitude of psychosocial factors.

White noise and presentation speed: testing strategies to help students with ADHD recall lecture material

Jethro Worthington & Anne Macaskill

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder with a profound impact on functioning and is heavily linked with academic underperformance. Despite this, many studies on performance with ADHD are very limited to lab

settings and there are fewer learning strategies tested in applied learning environments like a university lecture. Two manipulations, well studied in lab contexts, are presentation speed and white noise. Increasing presentation speed seems to improve prolonged attention, as does white noise. Both have limited results indicating improved learning in certain tasks as well. Our aim is to test these manipulations in a university lecture-based context to determine if they improve attention and information retention. Participants for each experiment (white noise and speed) will watch a normal 20-minute lecture, and one with the experimental manipulation and be tested on information retention. These results will be correlated with participants self-scoring on the WURS-25 ADHD metric. We expect those scoring higher in ADHD related traits to show improved test scores for lectures played faster, or with white noise, than for the control lecture. We also expect the increased speed, and white noise to either have no impact or inhibit retention in those with lower ADHD scores, more consistent with traditional literature.