

Autism Victoria's

2009 AUTISM SPECTRUM
DISORDER RESEARCH FORUM

Proceedings



- Location:** 24 Drummond Street, Carlton 3053 (near corner of Drummond St and Victoria Street; Melway Ref: 2B G11)
- Opening Hours:** 9 am to 6 pm, Monday to Friday
9 am to 2 pm on the first Saturday of every month
- Car Parking:** Limited parking available at front of building
- Transport:** **Parliament Train Station** is a 10 minute walk exiting at the Lonsdale Street exit; continue along Spring Street to Victoria Street and up Drummond Street.
Trams 1, 3, 5, 6, 8, 16, 64, 67 and 72 – disembark near the corner of Swanston and Victoria Streets, continue down Victoria Street towards Carlton Gardens and into Drummond Street.

AUTISM
VICTORIA

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About Autism Victoria

Autism Victoria began over forty years ago as the Victorian Autistic Children's Association. Initially a parent-run organisation staffed by volunteers, Autism Victoria has grown to become the state's peak body for Autism Spectrum Disorders, and is now a key provider of information, advice and support to individuals, families, service providers and private practitioners. In the last twelve to fifteen months, Autism Victoria has grown from a staff of four to a staff of over 25, with expectation of continual growth in the coming years.

Autism Victoria is a member-based not-for-profit organisation and generates income from a range of sources including memberships, government funding, philanthropic trusts and private donations.

Autism Victoria receives funding from both the State Government Department of Human Services (DHS) and Department of Education and Early Childhood Development (DEECD) to provide an Information, Advice and Support service to families and professionals. Further funding is received from the Commonwealth Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) to run the Autism Advisor program under the Helping Children with Autism package. Autism Victoria has also entered into a consortium agreement with the Parenting Research Centre to provide the telephone service for the National Autism Workshop Program which has also been funded by FaHCSIA.

The organisation is governed by a nine-member Board, elected on a rotational basis at the Annual General Meeting. The Board nominees are drawn from both a skills- and interest-base to enhance the governance of Autism Victoria.

The Autism Victoria Professional Panel was formed in July 2006 to replace the former Autism Services Coordinating Committee. This Panel provides Autism Victoria staff and committee with advice and guidance on professional issues related to Autism Spectrum Disorders, including research findings, policy development and media comment. The Autism Victoria Research Reference Group is part of the Autism Victoria Professional Panel, and is chaired by Associate Professor Cheryl Dissanayake.

What can Autism Victoria do for me?

Autism Victoria operates an **Information Line (1300 308 699)**, to provide information to families, professionals, and interested members of the community about Autism Spectrum Disorders, as well as information and advice about related services and initiatives. Autism Victoria maintains a **website (www.autismvictoria.org.au)** and one of its features is a section dedicated to Autism Spectrum Disorder research. The site offers the opportunity for researchers to describe their work, and for parents and individuals to nominate their interest in participating in research. Through the website, interested parties can also sign up for Autism Victoria's electronic newsletter, the **eSpectrum**, which provides up-to-date information about important updates, events, and general information related to Autism Spectrum Disorders.

Membership of Autism Victoria is open to families, carers, professionals and students – anyone with an interest in Autism Spectrum Disorders. A membership form is available from the Autism Victoria office, or registrations can be taken online. There are several membership categories with fees ranging from \$22.00 to \$55.00 per annum. Members receive full access to Autism Victoria's specialist **ASD Library**, four issues of their magazine, *The Spectrum*, and access to one of Autism Victoria's Family Counsellors. Membership also allows discount registration rates at Autism Victoria events, such as the ASD Research Forum, and the **2010 ASD Conference** to be held on the 5th and 6th August, which will cater to both families and professionals, and will focus on issues across the lifespan.

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Welcome from Associate Professor Cheryl Dissanayake
Convenor, Autism Victoria ASD Research Reference Group

Welcome to the eighth Annual Autism Spectrum Disorder (ASD) Research Forum, and a special welcome to those of you who are attending this meeting for the first time. It is a forum where we share our research findings from different clinics, research centres, and university research labs in Victoria.

I would like to extend a warm welcome to Dr Natasha Brown, who will speak to us on the 'Genetics of Autism'. It is important that those of us in the autism field, regardless of our own research and professional focus, understand the role that genes play in autism. Our understanding of this complex topic will, I know, be enhanced by Dr Brown's presentation.

The papers and posters to be presented at this meeting are indicative of the wide range of research currently being undertaken in Victoria. Some of this research was also presented at the very successful Asia Pacific Autism Conference (APAC) in Sydney in August this year. It was clearly evident from APAC that research on ASDs is growing, both within the State and nationally, concomitant with the numbers of children affected with these conditions.

I hope you take the opportunity presented today to meet colleagues from other universities, centres, and clinics, as it is via these informal associations that collaborations grow. Ultimately, it is through meetings such as these that we can work together and reach an understanding of the nature, causes and treatment of this complex body of disorders.

You can find out more about research in Victoria and our Research Reference Group on the Autism Victoria website.

I would like to extend my thanks to Assoc. Professor Amanda Richdale, who helped in organising today's program, and to Lia Castorina from Autism Victoria for all her help in organising the forum.

Thank you for attending and participating today. I hope you enjoy the forum, and invite you to return next year.

Cheryl Dissanayake, PhD, MAPS

Convenor, Autism Victoria ASD Research Reference Group

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Welcome from Associate Professor Amanda Richdale Chair, Autism Victoria Professional Panel

It is pleasing to be present at the 8th Autism Victoria Research Forum; these forums have become a feature of our year and provide an excellent venue for the presentation of autism spectrum disorder research in Victoria and elsewhere. In particular the forum continues to provide a venue for our students to present. Our students represent our future practitioners and researchers and are thus very important; welcome to them, our keynote speaker Dr Natasha Brown, other presenters, and those of you who have come to listen, look and engage with friends and colleagues.

The Autism Victoria Research Reference Group, which supports the implementation of this forum each year, is a subcommittee of the Autism Victoria Professional Panel. As Chair of the Professional Panel in 2009, I want to thank the Research Reference Group, in particular the Convenor A. Prof. Cheryl Dissanayake and our session chairs today, Dr. David Hamilton and A. Prof. Sabine Hammond. Many thanks must go to Lia Castorina from Autism Victoria for her excellent assistance with the organisation of the forum. The continued support of Autism Victoria for this forum must also be acknowledged.

This year the Autism Victoria Professional Panel has ensured that a number of ASD position papers have appeared on the Autism Victoria website, has met with the Chair of the new Autism Victoria Board of Governance, Prof. Bruce Tonge regarding the Professional Panel's role into the future, and has produced a set of Victorian assessment and diagnosis guidelines for ASDs across the lifespan.

The new Victorian assessment and diagnosis guidelines were modified to suit Victoria from those produced by the Western Australian Autism Diagnosticians' Forum (WAADF), with WAADF's kind permission. A subcommittee of the Professional Panel: Prof. Margot Prior (Chair), A. Prof. Cheryl Dissanayake, Dr Kerry Saunders (co-opted member), and myself undertook the modifications with the very able assistance of Lia Castorina. Iterations were sent to all members of the Professional Panel for comment, thus covering input from the disciplines of Psychiatry, Paediatrics, Psychology, Speech Pathology, Education and Early Intervention. We hope that these new guidelines will be launched in December this year, but this awaits confirmation.

Thank-you for coming today; enjoy and return in 2010.

Amanda Richdale, PhD, MAPS

Chair Autism Victoria Professional Panel

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Time	Session Presenter and Title of Paper
8:45 - 9:00	Registration
9:00 - 9.10	Opening Assoc. Prof. Cheryl Dissanayake , Convenor, ASD Research Reference Group
9:10 - 10:10	Chair: <u>Associate Professor Amanda Richdale</u> Keynote Speaker: Dr Natasha Brown <i>The genetics of autism</i>
10:10 - 10.30	Morning Tea & Poster Presentations
10:30 – 11.20	Infancy & Toddlerhood Chair – <u>Associate Professor Cheryl Dissanayake</u>
10.30	Josephine Barbaro & <u>Cheryl Dissanayake</u> (La Trobe University) <i>Prospectively identifying infants ‘at risk’ of an ASD in a community-based sample: Results from the Social Attention and Communication Study</i>
10.55	Catherine Bent & <u>Cheryl Dissanayake</u> (La Trobe University) <i>The role of social attention in early development: Eye gaze behaviours in autism</i>
11.20 – 12.35	Social/Emotional Development Chair – <u>Dr David Hamilton</u>
11.20	Felicity Chandler & <u>Cheryl Dissanayake</u> (La Trobe University) <i>An exploration of the internal working models of caregiver attachments in high-functioning children with autistic disorder</i>
11.45	Amanda Newbigin & <u>Cheryl Dissanayake</u> (La Trobe University) <i>Social understanding and social responsiveness from the self’s and other’s perspectives in children with high-functioning autism</i>
12.10	Dylan Alexander & <u>Amanda Richdale</u> (RMIT University) <i>Friendships, adaptive behaviours, and emotional problems in children with a high-functioning autism spectrum disorder</i>
12.35 - 1.35	Lunch & Poster Presentations

8th Autism Spectrum Disorder Research Forum

Time	Session Presenter and Title of Paper
1.35 – 2.50	<p>School Age</p> <p>Chair – <u>Associate Professor Sabine Hammond</u></p> <p>1.35 <u>Karen Wirth</u>, <u>Daryl Greaves</u> & <u>Margot Prior</u> (<i>University of Melbourne</i>) <i>A comparative study of the cognitive and executive function profiles of children with autism spectrum disorders and children with developmental language disorders</i></p> <p>2.00 <u>Susan Douglas</u> (<i>University of Melbourne</i>) <i>“Look at me! I’m Dragon Barbie”: Pretend play narratives in children with autism</i></p> <p>2.25 <u>Tamara May</u>, <u>Warrick Brewer</u>, <u>Peter Enticott</u>, <u>Nicole Rinehart</u>, <u>Avril Brereton</u>, <u>Bruce Tonge</u> (<i>Monash University</i>) <i>Differential olfactory identification in children with autism and Asperger’s disorder: A comparative and longitudinal study</i></p>
2.50 – 3.15	<p>Biological</p> <p>2.50 <u>Naomi Bishop</u> (<i>La Trobe University</i>) <i>Cell biology of autism: Role of the Golgi-casein kinase</i></p>
3:15 – 3.35	Afternoon Tea & Poster Presentations
3.35 – 5.00	<p>Intervention</p> <p>Chair – <u>Associate Professor Amanda Richdale</u></p> <p>3.35 <u>Annie (Jung-ae) Yoon</u>, <u>Dennis Moore</u> & <u>Angelika Anderson</u> (<i>Monash University</i>) <i>The effects of a Picture Exchange Communication System (PECS) intervention on non-vocal and vocal communication for a child with autism</i></p> <p>4.00 <u>Helen Chau</u>, <u>Amanda Richdale</u>, <u>Susana Gavidia-Payne</u> (<i>RMIT University</i>) <i>A study of approaches and methods of practice in early intervention in autism and related disorders</i></p> <p>4.25 <u>Haris Karnezi</u> & <u>Kevin Tierney</u> (<i>Trinity College, Dublin</i>) <i>A novel intervention devised to address the needs of high-functioning children with autism, based on the principles of drama in education, cognitive and behavioural theories</i></p>
4.50 - 5.00	Summing up, Announcements & Close – <u>Assoc. Prof. Cheryl Dissanayake</u>

AUTISM **Poster Presentations**

VICTORIA *Grevillea Room Annexe*

** The authors will be present at their posters at the times indicated to discuss their work and findings.*

Author	Time*	Institution	Title of Poster
1. Azhari Aziz, Sean Harrop & Naomi Bishop	12.35 – 1.05	La Trobe University	“Deleted in Autism 1” (DIA1) and the Golgi-casein kinase pathway
2. Sean Harrop, Azhari Aziz & Naomi Bishop	12.35 – 1.05	La Trobe University	Role of DIA1 family proteins in autism and mental retardation
3. Suzie Hosie, Rhonda Dorman, Steven Petrou & Elisa Hill	12.35 – 1.05	Howard Florey Institute	Assessing visual acuity in a mouse model of autism
4. Nicole Papadopoulos, Nicole Rinehart, Bruce Tonge, Jennifer McGinley, Ashwini Nayate & John Bradshaw	12.35 – 1.05	Monash University	Neuromotor functioning in children with high-functioning autism: Furthering current neurobehavioural and clinical definitions
5. Nahal Goharpey, Eva Constantinou, Sheila Crewther, David Crewther	12.35 – 1.05	Swinburne University	Multisensory integration in children with low functioning autism spectrum disorder or non-specific intellectual disability is more representative of non-verbal mental age than clinical diagnosis
6. Dennis Crowley	12.35 – 1.05	D. M. Crowley & Associates	Parent survey: Current ASD diagnosis, therapies, and their perceived effectiveness
7. Haris Karnezi & Kevin Tierney	12.35 – 1.05	Trinity College, Dublin	Drama as a method to address fears in high functioning children with autism
8. Angeline Ho & Sabine Hammond	12.35 – 1.05	Australian Catholic University	Adult siblings of individuals with autism or psychosis
9. Grace Thompson & Katrina McFerran	1.05 - 1.35	University of Melbourne	Music therapy and children with autism: The effect of family centred music therapy on the social communication skills of young children with autism

8th Autism Spectrum Disorder Research Forum

Author	Time*	Institution	Title of Poster
10. Rebecca Nadalin & Amanda Richdale	1.05 - 1.35	RMIT University	Friendship, loneliness and behavioural and emotional problems in adolescents with high-functioning autism spectrum disorders
11. Cheryl Dissanayake, Joh Schembrey & Thomas Suddendorf	1.05 - 1.35	La Trobe University	Delayed self recognition in children with autistic disorder: Evidence for a temporally extended self
12. Amanda Richdale¹ & Tony Robinson²	1.05 - 1.35	La Trobe University ¹ Austin Health ²	Parent and child factors associated with sleep problems in pervasive developmental disorders, Down syndrome and intellectual disability
13. Rachelle Porter¹, Katie Wood¹, Rebecca Giallo² & Rachel Jellet¹	1.05 - 1.35	¹ Swinburne University ² Parenting Research Centre	Parenting a child with an autism spectrum disorder: An exploration of the relationship between parental wellbeing, social support and parenting self-esteem
14. Rachel Jellet¹, Katie Wood¹, Rebecca Giallo² & Rachelle Porter¹	1.05 - 1.35	¹ Swinburne University ² Parenting Research Centre	Parenting a child with an autism spectrum disorder: An exploration of the role of parental sleep and fatigue in the relationship between child characteristics, family functioning and the home learning environment
15. Chi Man Lui, Angelika Anderson & Dennis Moore	12.35 - 1.05	Monash University	Using functional behavioural assessment to design an intervention package of Social Story™ and self-management
16. Angelika Anderson, Brett Furlonger, Dennis Moore et al.	12.35 - 1.05	Monash University	The acquisition of social functioning through video modelling

Grevillea Room, Darebin Arts & Entertainment Centre, Bell Street, Preston

Tuesday, 10th November, 2009

Forum Opening and Keynote Address

FORUM OPENING

9:00 – 9:10am

Associate Professor Cheryl Dissanayake will open the forum and welcome Dr Natasha Brown to present our Keynote Address.

KEYNOTE ADDRESS

9:10 – 10:10am

Chair: Associate Professor Amanda Richdale

Dr Natasha Brown presents ***The genetics of autism***

Dr Natasha Brown is a paediatrician whose primary interest is in developmental disability. She is currently a PhD candidate at the University of Melbourne studying the clinical genetics of Autism Spectrum Disorders and the broader autism phenotype.

Her research forms part of the Collaborative Autism Study, a large project that aims to identify causative genes for Autism Spectrum Disorders by studying large families with multiple affected relatives.

Dr Brown will provide an overview of this complex topic, with a focus on recent genetic discoveries.

Oral Presentations

SESSION ONE

10:30 – 11:20am

Infancy/Toddlerhood

Chair: Associate Professor Cheryl Dissanayake

Prospectively identifying infants ‘at risk’ of an ASD in a community-based sample: Results from the Social Attention and Communication Study (SACS)

Researcher/s: Josephine Barbaro
Supervisor: Cheryl Dissanayake
University/Institution: La Trobe University
Contact: j.barbaro@latrobe.edu.au

Background

Children with an Autism Spectrum Disorder (ASD) typically do not receive a diagnosis until 3-years of age, despite many parents suspecting a problem before 12-months. Although early markers of ASDs have been found as early as 6-months, there is little research on the prospective identification of these children prior to 18-months of age.

Objectives

The objective in this longitudinal study was to determine whether routine monitoring of social attention and communication behaviours, within the Victorian Maternal and Child Health (MCH) service, can prospectively identify infants who will receive a diagnosis of an ASD, in a community-based sample.

Methods

Two-hundred and forty one MCH nurses from 17 Local Government Areas in metropolitan Melbourne were trained on developmental markers of ASDs in infancy. 22,168 children were then monitored at regular intervals on key items during four routine check-ups (8-, 12-, 18-, and 24-months of age) at their local MCH centre. All children deemed to be ‘at risk’ of an ASD at 12-months or older by showing a ‘pattern’ of failure on the key items were referred to the SACS for a thorough developmental and behavioural assessment. These children were followed up at 6-monthly intervals until 24-months of age, when the ADOS and ADI-R were administered.

Results

124 referrals were received. Of the 110 children assessed, 89 met criteria for an ASD (ascertainment rate for ASDs: 81%). With one exception, all remaining children met criteria for a language and/or developmental delay (LD/DD). Of the 10 12-month-olds who were referred to us, 90% showed signs of an ASD. Data will also be presented on the behavioural items at each age that best predict a diagnosis of an ASD at 24-months.

Conclusions

The results indicate that it is possible to prospectively identify children with an ASD as early as 12 months of age via routine monitoring by community service providers in a community-based sample. Developmental surveillance, rather than screening, is advocated on the basis of these results.

SESSION ONE

Infancy/Toddlerhood

Chair: Associate Professor Cheryl Dissanayake

The role of social attention in early development: Eye gaze behaviours in autism

Researcher/s: Catherine Bent
Supervisor: Cheryl Dissanayake
University/Institution: La Trobe University
Contact: cabent@students.latrobe.edu.au

Background

Typical development is characterised by preferential attention to social stimuli, through which infants learn about the social world. Atypical eye contact, and specifically deficits in dyadic and triadic eye gaze behaviours, has been identified in individuals with Autism Spectrum Disorder (ASD). Individuals with ASD display core deficits in social attention and communication, which are suggested to manifest from altered interaction with the social world (and reduced opportunities for social learning) during infancy. The current study has adopted a social learning perspective in investigating eye gaze behaviours in early development.

Objectives

The aim in the current study is to explore differences in social attention and eye gaze behaviours between children diagnosed with ASD, Autistic Disorder (AD), and language disability and/or developmental delay (LD/DD) at 24 months. The development of social attention and eye gaze behaviours between 18 and 24 months and the relationship between these behaviours and scores obtained on the Autism Diagnostic Observation Schedule (Lord, Rutter, DiLavore, & Risi et al., 1999) and the Mullen Scales of Early Learning (MSEL; Mullen, 1995) will also be investigated.

Method

The current sample comprised 109 children referred to the Olga Tennison Autism Research Centre as they displayed key indicators of ASD. Forty-five children were assessed at 18-months, 99 were assessed at 24-months and 29 children attended both assessments. Thirty-nine children were subsequently diagnosed with AD and 50 with ASD. The control group comprised the 20 children who were classified as having a LD/DD.

Secondary video-tapped data was utilised in the current study, which analysed 10-minute samples of assessment footage. Social attention was operationalised as the proportion of the coding sample infants engaged in 1) social gaze; 2) non-social gaze, and 3) gaze at the joint-activity. Inclusion of a joint activity behavioural coding category acknowledges the social-learning opportunities that exist when an infant engages in a shared activity without explicit social attention. The behaviours of shared affect, joint attention and social referencing were also coded and included in the operationalisation of social gaze.

Results and Conclusions

The study is currently underway, and results are not yet available. The data and conclusions will be available for presentation at the research forum.

SESSION TWO
11:20 – 12:35pm
Social/Emotional Development

Chair: Dr David Hamilton

An exploration of the internal working models of caregiver attachments in high-functioning children with autistic disorder

Researcher/s: Felicity Chandler
Supervisor: Cheryl Dissanayake
University/Institution: La Trobe University
Contact: f.chandler@latrobe.edu.au

Background

Previous research has investigated caregiver attachment relationships in children with autism during early childhood, with few differences found from matched control groups. However, little is known of this relationship during middle childhood (8-12).

Objectives

This study aimed to establish if there are differences in the internal working models of attachment in children with High-Functioning Autism (HFA) compared to typically developing (TD) children in terms of overall attachment security, and individual components of this relationship. A secondary aim was to establish whether caregivers' perceptions of their child's attachment to them matched their children's reports. Finally, the relationships between children's theory of mind and memory abilities and attachment security were explored.

Method

To date, 18 children with HFA and 14 TD children have been matched on verbal and overall mental age and chronological age. Children were administered the Kerns Security Scale (KSS) and the Inventory of Parent and Peer Attachment-Revised (IPPA-R), and caregivers completed the same questionnaires from the viewpoint of their child. Children also completed a higher-order theory of mind task and an episodic memory task.

Results

After controlling for verbal mental age, group (HFA or TD) did not explain any of the variance in children's ratings of their attachment security on the IPPA-R (R squared change = .002), or the KSS (R squared change = .001), nor any of the subscales of these measures. In both groups there were moderate correlations between children's and caregiver's ratings on the KSS (HFA: $r = .42$; TD: $r = .43$). Theory of mind performance in children with HFA was moderately correlated with their reports of attachment security as measured by the IPPA-R ($r = .57$), (KSS: $r = .40$), controlling for verbal mental age. Episodic memory performance in children with HFA was moderately correlated with their reports of attachment security as measured by the IPPA-R ($r = .57$), (KSS: $r = .37$), controlling for verbal mental age. Data on the complete sample ($n=40$) will be available in November 2009.

Conclusion

The results indicate that children with HFA can and do develop secure internal working models of attachment during middle childhood, and that theory of mind and episodic memory abilities may facilitate this development.

SESSION TWO

Social/Emotional Development

Chair: Dr David Hamilton

Social understanding and social responsiveness from the self's and other's perspectives in children with high-functioning autism

Researcher/s: Amanda Newbigin
Supervisor: Cheryl Dissanayake
University/Institution: La Trobe University
Contact: a.newbigin@latrobe.edu.au

Background

Previous research has found deficits in empathic responsiveness to others amongst children with autism (Dissanayake, Sigman & Kasari, 1996, Hobson, Harris, García-Pérez & Hobson, 2009, Sigman, Kasari, Kwon & Yirmiya, 1992, and Travis, Sigman & Ruskin, 2001). However, to date there has been no investigation of empathic responsiveness from the children's own perspectives.

Objectives

This study aimed to investigate how children with high-functioning autism (HFA) respond to someone expected to experience distress and to someone expressing distress from their own perspective as well as an outsider's perspective. The relationship between responsiveness and self understanding was also investigated.

Method

To date, eighteen boys with HFA and fourteen typically developing (TD) boys aged 8 to 12 years have been tested. To test responsiveness to someone expected to experience distress, each child completed a drawing task with two experimenters (E1 and E2) in which the child, E1 and E2 each drew a picture. E1 subsequently tore up the drawing done by E2. Groups were compared for concern expressed for E2. To test responsiveness to expressed distress, E1 pretended to misplace her watch and feigned distress before searching for it. Groups were compared for expressed concern and prosocial behaviour. Children were asked to describe and explain their responses to each scenario while viewing video of these tasks to gain their own perspective of their social understanding and responsiveness.

Results

In contrast to previous research, preliminary results suggest TD children and those with HFA are similar in their observed responsiveness to someone expected to experience distress and to expressed distress. Responses to each task will be interpreted in light of children's self-understanding, measured using the Self Perception Profile for Children (Harter, 1985), and children's own descriptions and explanations of their responses to these tasks (data not yet available).

Conclusions

Although children's empathic responsiveness did not appear different from an outsider's perspective, children's own descriptions and explanations of their responses to these tasks provide further insight into their responses than have heretofore been described.

SESSION TWO

Social/Emotional Development

Chair: Dr David Hamilton

Friendships, adaptive behaviours, and emotional problems in children with a high-functioning autism spectrum disorder

Researcher/s: Dylan Alexander
Supervisor: Amanda Richdale
University/Institution: RMIT University
Contact: dylan.alexander@student.rmit.edu.au

Background

Adolescents with high-functioning autism spectrum disorder (HFASD; ASD population with IQ > 70) experience friendships differently to typically developing (TD) adolescents: HFASD adolescents are reported to have less contact with friends, friendships of shorter duration, fewer positive features in their friendships, and a lesser desire for friendships than their TD peers. While some research has explored the differences between TD and HFASD friendships in adolescence, there has been little exploration of the potential reasons for why these differences exist. One area that may be associated with HFASD friendship outcomes is adaptive behaviour. An individual has proficient levels of adaptive behaviour if he/she is able to meet the standards of personal independence and social responsibility expected of his/her age group; this is usually determined by measuring an individual's social, communication, and daily living skills, areas where those with an HFASD generally have difficulties. There is evidence that deficiencies in social and communication skills are related to poorer friendship outcomes in TD populations; however, this is yet to be replicated in HFASD populations. Further, there is little data pertaining to the consequences of poor friendship outcomes on the emotional well-being of HFASD adolescents. Those with HFASD report more anxiety and depression than the TD population but it is unclear whether poorer friendship outcomes contribute to the over representation of anxiety and affective disorders in those with HFASD. The aims of the current study are to investigate: (1) the relationship between adaptive behaviour and friendships; and (2) relationships between friendship and mental health in HFASD adolescents compared with TD adolescents.

Method

Data pertaining to the friendships, adaptive behaviour, and emotional well-being of adolescents were collected from 20 adolescent males (10 HFASD, 10 TD) aged between 11 and 19 years and one of their parents.

Results and Discussion

Data are currently being analysed. Results will explore any differences between friendships in HFASD and TD adolescents and their relationship with adaptive behaviour and emotional well-being. The author is particularly interested to clarify whether adolescents' adaptive behaviour profiles predict friendship outcomes, and whether friendship outcomes predict emotional well-being in HFASD adolescents.

SESSION THREE
1:35 – 2:50pm
School Age

Chair: Associate Professor Sabine Hammond

A comparative study of the cognitive and executive function profiles of children with autism spectrum disorders and children with developmental language disorders

Researcher/s: Karen Wirth
Supervisors: Daryl Greaves¹ & Margot Prior¹
Research team: Philip Graves², Lawrie Bartak² and Cathie Hughes²
University/Institution: ¹University of Melbourne; ²Monash Medical Centre
Developmental Disabilities Clinic
Contact: karen.wirth@mcri.edu.au

Background

The differential diagnosis of Autism Spectrum Disorder (ASD) and Developmental Language Disorder (DLD) in young children is challenging given the overlap in communicative impairment, heterogeneity in the presentation of autistic symptomatology, and late onset of some symptoms. The importance of ASD and DLD comparative research is highlighted by follow-up studies showing that a subset of those diagnosed in childhood with DLD later in life share behavioural and social interaction deficits with those with ASD.

Objective(s)

This study examined the similarities and differences in cognitive, executive function, repetitive behaviour and communication profiles between young children from these two diagnostic groups. In addition to answering questions about distinguishing between ASD and DLD, this research also offered insight into executive dysfunction in ASD.

Method(s)

The sample comprised 13 females and 33 males between 4-years 0-months and 7-years 3-months (11 children with DLD and 35 with ASD [including AD, AS and PDD-NOS]). Children were administered the Wechsler Scale of Intelligence-3rd Edition (WPPSI-III), and executive function (EF) tasks. Parents provided information via the Children's Communication Checklist-2 (CCC-2), Repetitive Behaviours Questionnaire (RBQ), and Developmental Behaviour Questionnaire (Autism Screening Algorithm [DBC-ASA]).

Results

Children with ASD exhibited more deviant social interaction and greater deficits in response inhibition/working memory than children with DLD. Compared to children with PDD-NOS, children with AD/AS had weaker structural language abilities, higher levels of repetitive behaviour, and displayed difficulty shifting response-set when faced with a new EF task. Children with DLD displayed less deviant social interaction than those with PDD-NOS, but the groups closely resembled each other in terms of repetitive behaviour, and structural language skills.

Conclusion(s)

This study revealed those features associated with the presence of an ASD, and those that discriminate between subgroups of ASD. In addition, this research offered insight into the appropriateness of assessing executive functioning in these clinical populations at a young age.

SESSION THREE

School Age

Chair: Associate Professor Sabine Hammond

“Look at me! I’m Dragon Barbie”: Pretend play narratives in children with autism

Researcher/s: Susan Douglas
University/Institution: University of Melbourne
Contact: sdouglas@unimelb.edu.au

The narration of pretend play is a complex cognitive task which involves online production of the plot, as well as management of multiple roles, including narration of the story and character dialogue. It also requires the simultaneously occurring process of figure and object manipulation for scene setting, as well as enactment of the story as it unfolds. While early research noted the absence of pretence in children with autism (Kanner 1943; Asperger 1944), more recent studies have shown that children with autism can engage in pretend play, either when prompted or even spontaneously (Jarrold, Boucher & Smith 1996; Lewis & Boucher 1988; Mifsud, Kelly, Dissanayake & Leekam 2009). Studies on oral narratives in children with autism have tended to focus on production tasks in controlled settings using wordless picture books (Botting 2002; Losh & Capps 2003; Tager-Flusberg 1995). However, there are very few studies which examine narratives constructed as part of pretend play, in either typical development (Göncü & Klein 2001) or in autism.

The aim of the current study is to investigate pretend play narratives in the natural speech of five children with autism of various ages and abilities. The corpus consists of thirty hours of spontaneous interaction between the children and their mothers, and/or the researcher. There are six, one hour long sessions for each child which were videotaped and then transcribed.

Preliminary analysis reveals that while all of the participants engage in pretend play, there is considerable variation in the extent to which this occurs, and there are very few examples of pretend play accompanied by narratives. Assessment of the sophistication of the narratives is in progress, using measures taken from Göncü & Klein (2001). These measures include a three-scale assessment of the narrative quality, encompassing narrative organisation, complexity of plot and elaborateness of pretence; and a three-scale assessment of the level of imaginative object use.

SESSION THREE

School Age

Chair: Associate Professor Sabine Hammond

Differential olfactory identification in children with autism and Asperger's disorder: A comparative and longitudinal study

Researcher: Tamara May
Supervisors: Warrick Brewer¹, Peter Enticott², Nicole Rinehart², Avril Brereton², Bruce Tonge²
University/Institution: ¹Orygen Research Centre; University of Melbourne ²Monash University
Contact: tamara.may@med.monash.edu.au

Background

Neurobiological underpinnings of autism spectrum disorders are largely undetermined. There is controversy regarding whether Asperger's disorder (AD) is behaviourally and neurobiologically different to high functioning autism (HFA). Key neurocognitive and neurodevelopmental models of autism implicate orbitofrontal cortex (OFC) compromise associated with social and executive functioning impairments. Olfactory identification (OI) deficits are associated with OFC dysfunction. We previously demonstrated that children aged 5-9 years with HFA lacked the normal association of OI and age as found in matched controls. This suggested disorganised OFC maturation in HFA.

Objectives

We aimed to: (i) complete a 5-year follow-up of the HFA and control groups to test the hypothesis that they would grow into OFC functional deficit; and (ii) compare unilateral OI in 12 children with HFA, and 12 with AD, to 12 age- and gender-matched controls.

Methods

The University of Pennsylvania Smell Identification Test (UPSIT) visual analogue was utilised birhinally for aim I, and unirhinally for aim II. Intellectual ability was assessed using the Wechsler Intelligence Scales for Children IV.

Results: Both HFA and control groups had improved UPSIT scores at 5-years post-baseline, however, an HFA subgroup had declined OI ability. OI deficits in both nostrils were found in the HFA group compared to controls. In contrast the AD group did not differ from HFA or controls for OI across nostrils. Different IQ and unirhinal OI relationships existed between HFA, AD, and controls.

Conclusion

OI decline in a HFA subgroup suggests deterioration of the orbitofrontal regions and provides evidence of heterogeneous orbitofrontal development in HFA. Unirhinal findings suggest bilateral orbitofrontal compromise in HFA, whereas orbitofrontal compromise in AD may not be pronounced at this developmental stage. The UPSIT may be a useful non-invasive probe of OFC functional development, where our results suggest differing patterns of orbitofrontal dysfunction mediating neuropathology in HFA and AD.

SESSION THREE

2:50 – 3:15pm

Biological

Chair: Associate Professor Sabine Hammond

Cell biology of autism: Role of Golgi-casein kinase

Researcher: Naomi Bishop
University/Institution: La Trobe University
Contact: n.bishop@latrobe.edu.au

The molecular and cellular mechanisms of autism remain unknown. A common emerging theme in autism is abnormal levels of many neurotransmitters, monoamines, neuropeptides, and neurotrophins. All these factors are secreted via the cellular secretory pathway and may play a role in the aetiology of autism. However, the data do not suggest a gross defect in secretion, as many secreted factors remain unchanged, but rather suggest a defect in regulation of secretion of some factors.

A regulatory defect in secretion is supported by studies on oxytocin, a secreted neuropeptide implicated in autism, where decreased levels of plasma oxytocin occur in ASD patients (reviewed by McDougle et al., 2005). The most exciting finding, however, was that decreased levels of secreted mature oxytocin were accompanied by increased levels of the immature prohormone form (Green et al., 2001). This indicated for the first time that regulation of prohormone processing, a key process in secretion, is defective in autism. Prohormone activation requires the action of “convertases”, which are activated by binding chaperones, such as “7B2”, within the lumen of the Golgi apparatus of cells. This activation process, in turn, requires phosphorylation of 7B2 by the enzyme known as the “Golgi-casein kinase” (G-CK).

The molecular identity of the G-CK is one of the biggest mysteries of cell biology, and its action is thought to regulate processing and secretion of many cellular factors. Strikingly, many of its known substrates are factors implicated in autism. Other substrates have roles in digestion and immune function. Therefore reduced G-GK activity may contribute to the co-morbidities associated with autism. Salivary peptides are also a substrate for the G-CK, and the most direct evidence for a role of the G-CK in autism comes from a recent study which found hypo-phosphorylation of salivary peptides in 70% of patients with autism (Castagnola et al., 2008).

I will present the latest findings from my lab, where we are attempting to solve the mystery of the G-CK, identify its substrates, determine how it is regulated, and elucidate its role in cellular secretion. These studies will be pivotal to our understanding of autism at the molecular level.

SESSION FOUR

3:35 – 4:50pm

Intervention

Chair: Associate Professor Amanda Richdale

<i>The effects of a Picture Exchange Communication System (PECS) intervention on non-vocal and vocal communication for a child with autism</i>

Researcher/s: Annie (Jung-ae) Yoon
Supervisor: Dennis Moore & Angelika Anderson
University/Institution: Monash University
Contact: annieyoon@gmail.com

Background

The Picture Exchange Communication System (PECS) is widely used in the teaching of children with autism. However, there is limited research on the impact of PECS training on children's communication (vocal and non-vocal) and the effects of training in the home setting on such communication in different settings. The present study focuses on PECS training conducted by the researcher in the home environment.

Objectives

The aim of this study is to assess the effects of a PECS intervention on the communication of a child with autism in the home setting. The aim of this study is also to evaluate the extent to which these effects of PECS generalised to non-trained settings.

Method

A single subject changing criterion design was used to evaluate the effect of PECS intervention. Three dependent variables including Independent PECS exchange, incorrect responses, and vocal mand for each PECS trial were recorded during PECS training. In addition, other non-vocal (e.g. independent PECS mand, other non-vocal mand & other non-vocal initiation); and vocal communications were collected in no-treatment generalisation settings using momentary 10 second interval time sampling and an event recording system.

Results

The participant completed to criterion all six phases of the PECS program over a seven-month period. The observational data indicate that she rarely utilised non-vocal communication (PECS mands, other non-vocal mands & initiations) in the home and kindergarten generalisation settings. However the measures of vocal communication (new words spoken, MLU, initiations, mands) all show marked increases in association with the PECS training, though some of these gains were not evident at follow up.

Discussion

The positive effects of PECS training on increasing vocal communication is considered together with further consideration of why low rates of PECS use in generalisation settings were observed. Possible strategies to scaffold the use of PECS are outlined.

SESSION FOUR
3:35 – 4:50pm
Intervention

Chair: Associate Professor Amanda Richdale

A study of approaches and methods of practice in early intervention in autism and related disorders

Researcher/s: Helen Chau
Supervisor: Amanda Richdale & Susana Gavidia-Payne
University/Institution: RMIT University
Contact: h.chau@bigpond.net.au

Background

Early intervention is known to be crucial in the treatment of young children with an autism spectrum disorder (ASD). The present research consisted of three studies: (1) a survey of early intervention (EI) in 1998, (2) a six-year follow-up in 2004, and (3) a longitudinal study of 12 children in their first 12 months of EI during 2000 to 2006. The investigations examined the approaches and methods of practice of EI in Victoria, including relationships among program, child, and family variables, and treatment outcomes for children with an ASD. Study 3 is the focus of this report.

Method

Study 3 followed 12 preschool children (*Range* 33-62 months) with an ASD over a 12-month period from their commencement in EI. Children's autism severity, IQ, language, interpersonal relationships and play, and autism-related behaviour were measured at commencement of intervention and 12 months later; autism-related behaviours were also measured at 6 months. Parents' coping strategies were ascertained at the commencement of intervention and 12 months later.

Results and Discussion

Children participated in autism-specific EI, generic EI or home-based ABA programs. Some children changed their intervention setting over the 12-month period so any impact of type of EI could not be examined. Over the 12 months there were no significant differences at commencement and review for IQ, language, interpersonal relationships, play skills or autism severity when the age of start or IQ at start was controlled as appropriate. However, there were some trends for age of start: (1) younger children made more gains in IQ; (2) older children made more gains in interpersonal relationships; and (3) older children made more gains in language. With regard to autism-related behaviours, a larger improvement was found at 6 months after commencing EI, than at 12 months and the change was more prominent in EI than at pre-school. Overall there was no change in parent coping over the 12 months period.

SESSION FOUR

3:35 – 4:50pm

Intervention

Chair: Associate Professor Amanda Richdale

A novel intervention devised to address the needs of high-functioning children with autism, based on the principles of drama in education, cognitive and behavioural theories

Researcher/s: Haris Karnezi and Kevin Tierney

University/Institution: Trinity College, Dublin

Contact: xapisharis@yahoo.gr

This study is an action research project which sets out to introduce and evaluate an intervention model specifically designed to meet the needs of high functioning children with autism, integrating principles from Behavioural and Cognitive therapy into the art form of drama.

The model was applied to a number of problems encountered by high functioning children with autism including difficulties in social interaction and phobias. The study involved six separate interventions and employed both single case and group designs. Overall 8 children aged between 6 to 13 years, diagnosed with ASD participated in the study. Outcomes were measured using theory of mind tests, executive functioning tests, behavioural observations, pre and post intervention standardised social competence questionnaires for parents and teachers.

Collectively, the results indicated positive changes in the self esteem and behaviour of all eight participants. In particular, improvements in the ability to solve theory of mind tasks were noted in the younger group; and qualitative improvements in social communication, in terms of verbal (content) and non verbal expression (body posture, vocal expression, fluency, eye contact, reduction of ritualistic mannerisms) were noted in the older group. Finally, decreases in fear related behaviours were noted in the three cases of children for whom a reduction of fear motivated avoidance was the intervention's target. Reliable changes in the standardised measures of social competence were not observed.

The need for reliable impact measures to assess the effectiveness of the model in generating global changes in the participants' behaviour outside the therapeutic context was identified.

Poster Presentations

“Deleted in Autism 1” (DIA1) and the Golgi-casein kinase pathway

Researcher/s: Azhari Aziz & Sean Harrop
Supervisor: Naomi Bishop
University/Institution: La Trobe University
Contact: ababdaziz@students.latrobe.edu.au

Autism spectrum disorder (ASD) is among the most heritable of all neurological conditions. Current evidence implicates multiple genes and multiple genotypes in development of an ASD phenotype. Disease prevalence estimates vary, with 1:100 being commonly accepted, similar to the prevalence of schizophrenia. However, by contrast to schizophrenia which typically has adult onset, ASD is typically diagnosed early in life and causes life-long disability. The cause of ASD is unknown.

One of the most exciting recent papers in the ASD field was the finding by Castagnola and colleagues last year that salivary peptides are hypo-phosphorylated in around 70% of patients with ASD. While their study does not implicate salivary peptides in the aetiology of ASD, their work implicates malfunction in the cellular process of secreted protein phosphorylation, an activity which takes part in the intracellular compartment known as the “Golgi apparatus”. This finding may be key to understanding the cause of a majority of ASD cases. Unfortunately, the enzyme responsible, the “Golgi-casein kinase”, has never been identified at the molecular level.

We have been studying the *Deleted In Autism 1* gene (*DIA1*), which was recently identified as an autosomal recessive gene deleted in ASD. While the normal cellular function of *DIA1* is unknown, the *DIA1* gene product localises to the Golgi apparatus. We are investigating whether *DIA1* plays a role in phosphorylation of proteins in the Golgi apparatus, and will present our latest findings.

Characterising cellular role of *DIA1* and the mystery of the Golgi-casein kinase pathway involved in ASD is vital to furthering understanding of the biological basis of ASD, and play a major role in improving molecular diagnosis and therapy for those with ASD.

Role of DIA1 family proteins in autism and mental retardation

Researcher/s: Sean Harrop & Azhari Aziz
Supervisor: Naomi Bishop
University/Institution: La Trobe University
Contact: spharrop@students.latrobe.edu.au

Autism spectrum disorder (ASD) is among the most heritable of all neurological conditions. Variation in, or deletion of, a single gene can be sufficient for ASD, but involvement of multiple genes has been suggested. The *Deleted In Autism 1* (*DIA1*) gene was recently identified in a study designed to identify recessive autism genes. The normal cellular function of the *DIA1* gene product is unknown.

We have carried out detailed bioinformatics-based analyses of *DIA1* which has revealed a closely related human gene. We have named this gene *DIA1R*, for *DIA1-related*. *DIA1R* was generated by a gene duplication event preceding the divergence of vertebrates. While deletion of *DIA1* is implicated in development of ASD, *DIA1R* localises to a region of the X chromosome implicated in mental retardation. We found both gene products expressed in brain tissue, with *DIA1* being expressed at high levels in the cerebellum, a region of the brain implicated in ASD. At the cellular level, both proteins have predicted signal peptides, indicating a role in the secretory pathway. We are currently investigating the subcellular localisation and cellular role of both *DIA1* and *DIA1R*.

Characterising the role of genes involved in ASD will lead to a better understanding of the biological basis of ASD, leading to opportunities for improved diagnosis and therapy for those with ASD.

Assessing visual acuity in a mouse model of autism

Researcher/s: Suzie Hosie, Rhonda Dorman, Steven Petrou & Elisa Hill
University/Institution: Howard Florey Institute, University of Melbourne
Contact: elisa.hill@florey.edu.au

Background: Alterations in sensory modulation (i.e. tactile, auditory and visual acuity) are widely reported in ASD patients and may contribute to behavioural features including social avoidance and stereotypic behaviours in autism. Interestingly, individuals with autism have demonstrated enhanced visual perception via the Block Design and Embedded Figures tests compared with age-matched typical control subjects. Recently, vastly increased visual acuity has been reported in adult males with high functioning autism and Asperger Syndrome (Ashwin et al., 2008). Here, we aim to investigate visual acuity in a mouse model of autism with a view to elucidating mechanisms underlying abnormal neuronal network function in ASD. NL3(R451C) mice harbour a gene mutation identified in two brothers with ASD. This mutated gene codes for a synaptic adhesion protein (Neurologin-3) which plays an important role in regulating neuronal communication.

Objective: This project aims to examine whether alterations in visual acuity, as demonstrated in patients, are recapitulated in the NL3(R451C) mouse model.

Methods: Rodent visual acuity assessment utilises the non-invasive virtual reality OptoKinetic Tracking Response system in awake, unrestrained mice which involves the projection of moving visual gratings of varying frequencies around the stationary animal and the tracking of head movements by the observer.

Results: Preliminary data suggest that the ASD mouse model exhibits enhanced visual acuity compared to unaffected littermates.

Conclusions: These data suggest that the enhanced visual acuity seen in patients with ASD may be recapitulated in the NL3(R451C) mouse model. These behavioural observations form the basis for further work to elucidate functional changes in the visual cortex to advance our understanding of neural mechanisms underpinning ASD.

Neuromotor functioning in children with high-functioning autism: Furthering current neurobehavioural and clinical definitions

Researcher/s: Nicole Papadopoulos, Nicole Rinehart, Bruce Tonge, Jennifer McGinley, Ashwini Nayate & John Bradshaw
University/Institution: Monash University
Contact: nicole.papadopoulos@med.monash.edu.au

Background: Autism and ADHD represent the most common childhood onset psychiatric disorders. Autism is defined by social difficulties and repetitive behaviours whilst ADHD is primarily defined by inattention, impulsivity and motor restlessness. Despite the DSM-IV currently precluding a dual diagnosis of autism and ADHD, clinical and epidemiological studies report such co-morbidity in up to 59-75% of children diagnosed with autism. Recent evidence also suggests that children who exhibit co-occurring autistic and ADHD symptoms report greater motor difficulties. This study aims to investigate the neuromotor profile of individuals diagnosed with autism, taking into consideration the influence of co-morbid hyperactive symptoms and their relationship to motor difficulties.

Method: Movement was examined using a computerised upper limb touchscreen task and the Movement Assessment Battery for children. Normally intelligent children aged between 7-12 years participated in the study and were matched according to age, sex and IQ.

Results: Children diagnosed with high-functioning autism (HFA) displayed quicker movement execution times with no difference in error rates on the touchscreen task compared to normally developing children. However, the HFA group showed cerebellar- type variability in end-point error. Interestingly, variability in movement was shown to be positively correlated to hyperactive symptoms in children with HFA.

Implications: These results suggest that it may be the combination of autistic and ADHD symptoms which actually underlie motor dysfunction in children diagnosed with HFA. The findings suggest that it is clinically important to define ADHD symptoms in children with autism to improve definition and management.

Multisensory integration in children with low functioning autism spectrum disorder or non-specific intellectual disability is more representative of non-verbal mental age than clinical diagnosis

Researcher/s: Nahal Goharpey & Eva Constantinou
Supervisors: Sheila Crewther, David Crewther
University/Institution: Swinburne University
Contact: goharpey@hotmail.com

Multisensory processing was compared between groups of typically developing (TD) children and those of the same non-verbal mental age (as assessed by the Raven's Coloured Progressive Matrices) with low functioning with Autism Spectrum Disorder (ASD), idiopathic intellectual disability (ID). All children performed 2 auditory discrimination tasks 2 visual change detection tasks and 2 audiovisual tasks in a two alternate forced choice pseudo random counterbalanced design. Task performance was compared in terms of a ratio of mean motor reaction time and percentage correct responses for each group. As no significant difference in task performance was seen between ID and ASD children, their results were collated and compared to TD children in order to further investigate the effect of intellectual disability on task performance. TD children were significantly faster and more accurate than ID children on the visual colour change detection task and on the auditory discrimination task (familiar animal and household sounds). In addition, all groups performed similarly on the audiovisual tasks, indicating that audiovisual integration *per se* is not further compromised than expected for mental age in low functioning children with ASD compared to RCPM mental age matched ID and TD children. Such findings have implications for education of low functioning children with ASD.

Parent survey: Current ASD diagnosis, therapies, and their perceived effectiveness

Researcher/s: Dennis Crowley
University/Institution: D. M. Crowley & Associates
Contact: crowleyd@tpg.com.au

Background: As far as the author is aware, there has never been an internet parent survey regarding the diagnosis of ASD and the perceived effectiveness of various therapies carried out in Australia/NZ.

Objectives: To provide indicative information on: a) the delay between the parents' first suspicions of autism and diagnosis, and reasons for the delay; and b) the different types of treatments being used with a view to obtaining parent perspectives on their effectiveness

Methodology: Ongoing internet-based questionnaire. According to the ABS in 2006/7 64% of Australian households had home internet access. New Zealand probably has a comparable percentage. A similar parent survey was carried out by Green et. al (2006)*

Results: Total usable responses: 331 (79% complete). Initial indications are:

1. There is an average delay of 24 months between parents' first suspicions of something not being right with their child, and official diagnosis. The main reasons appear to be related to GP (28.4%) and/or paediatric (24.7%) advice that the child's initial delayed development is normal, "...and there is nothing to worry about".

2. Behavioural improvements within one month were noted with the following therapies (note - parents usually employ multiple therapies)

ABA	40.6% (n=79)	GF/CF diet	58.3% (n=96) [#]
Occupational therapy	24.6% (n=126)	GF/CF/SF diet	64.2% (n=67)
Speech therapy	25.4% (n=157)		

[#] cf ARI Publ. 34 August 2004 Parent Ratings of Behavioural Effects of Biomedical Intervention: 63% "Got better" (n=1109).

Conclusions: The data obtained suggests there is complacency towards ASD within the medical profession. Dietary regimes appear to offer substantial immediate behavioural benefits. There is a need for a distinct improvement in training within the medical profession, and a quantitative (biochemical) testing protocol for ASD.

* Green, V.A. et al., (2006). Internet survey of treatments used by parents of children with autism. *Research in Developmental Disabilities*, 27(1), 70-84.

Drama as a method to address fears in high functioning children with autism

Researcher/s: Haris Karnezi & Kevin Tierney
University/Institution: Trinity College, Dublin
Contact: xapisharis@yahoo.gr

This study is an action research project which sets out to introduce and evaluate an intervention model specifically designed to meet the needs of high functioning children with autism, integrating principles from Behavioural and Cognitive therapy into the art form of drama.

The model was applied to a number of problems encountered by high functioning children with autism including difficulties in social interaction and phobias. The study involved six separate interventions and employed both single case and group designs. Overall 8 children aged between 6 to 13 years, diagnosed with ASD participated in the study. Outcomes were measured using theory of mind tests, executive functioning tests, behavioural observations, pre and post intervention standardised social competence questionnaires for parents and teachers.

Collectively, the results indicated positive changes in the self esteem and behaviour of all eight participants. In particular, improvements in the ability to solve theory of mind tasks were noted in the younger group; and qualitative improvements in social communication, in terms of verbal (content) and non verbal expression (body posture, vocal expression, fluency, eye contact, reduction of ritualistic mannerisms) were noted in the older group. Finally, decreases in fear related behaviours were noted in the three cases of children for whom a reduction of fear motivated avoidance was the intervention's target. Reliable changes in the standardised measures of social competence were not observed.

The need for reliable impact measures to assess the effectiveness of the model in generating global changes in the participants' behaviour outside the therapeutic context was identified.

Adult siblings of individuals with autism or psychosis

Researcher/s: Angeline Ho
Supervisor: Sabine Hammond
University/Institution: Australian Catholic University
Contact: angelinehtt@gmail.com

Siblings play an integral role in most children's social world by providing companionship and emotional support. In families where a sibling has a pervasive developmental disorder such as autism or a severe mental illness such as psychosis, the role of the sibling without autism or psychosis may change to involve more of a care-giving role. This research aims to address the role of stressors, appraisals and coping strategies of having a sibling with autism or psychosis and whether any of those factors predict depression, anxiety and stress, and quality of life. Participants were adult siblings of individuals with autism (N = 42) and with psychosis (N=13). Participants were recruited through notices on sibling, autism and psychosis websites. Measures were completed via a secure internet website and included a Demographics Questionnaire, Screening Measure for Autism, Schizophrenia Outcome Module, the Control Attribution Scale as a measure of the sibling's appraisal of the degree of control to which the individual has over their problems, Caregiver's Burden Scale, Brief COPE as a measure of coping strategies, Depression, Anxiety and Stress Scale, and Comprehensive Quality of Life Scale-Adult. Preliminary analyses using t-tests found no significant differences on all study variables except for the behaviour problems exhibited by their siblings with autism or psychosis. Caregiver burden was positively correlated with behaviour problems, degree of perceived control held by the individual with autism or psychosis, dysfunctional coping style, stress, anxiety and depression. The preliminary results indicate that there are similarities in the experiences of adult siblings of individuals with autism or psychosis, in terms of their burden of care, attribution of control their siblings with autism or psychosis have over their behaviour problems, coping styles and their perceived quality of life, depression, anxiety, and stress.

Music therapy and children with autism: The effect of family centred music therapy on the social communication skills of young children with autism

Researcher/s: Grace Thompson
Supervisor: Katrina McFerran
University/Institution: University of Melbourne
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The use of music therapy to assist children with autism to develop social and communication skills stems back to the UK in the 1970's. Music therapists are trained to use music (which is by nature a non-verbal medium) to motivate, evoke and elicit responses and interactions from children with social and communication impairments such as autism. While the use of music therapy with children with autism has been widely described, the evidence has primarily taken the form of case studies.

This project aims to identify to what degree the early social and communication skills of children with autism aged between 3 and 5 years are impacted on by participating in music therapy sessions with their parent (primary carer). The parent will be asked to continue the musical communication strategies between sessions. The main research questions to be addressed are:

1. Do young children affected by autism show observable and measurable changes in early social and communication skills in response to family centred music therapy?
2. Does the effectiveness of music therapy vary depending on the amount of between-session music activities provided by the child's parent?
3. What do parents of children with autism experience during music therapy sessions?

It is anticipated that 24 participants (the child with autism and their parent) will take part in 12 music therapy sessions over a period of 4 months. The parent will complete 3 questionnaires pre and post intervention, and at a 3 month follow up, including the Vineland, MacArthur Child Development Inventory-words and gestures, and the Social Responsiveness Scale-3yo version. The ADOS will be completed pre, post and at follow up, and the parent will also participate in a semi-structured interview post treatment.

At this research forum I will be presenting the results of my pilot study in preparation for the RCT described above. Initial results will be shared in context of the existing evidence and the research design will be explored in this context.

Friendship, loneliness and behavioural and emotional problems in adolescents with high-functioning autism spectrum disorders

Researcher/s: Rebecca Nadalin
Supervisor: Amanda Richdale
University/Institution: RMIT University
Contact: s3137550@student.rmit.edu.au

Background: Adolescents with high-functioning autism spectrum disorders (HFASD) are known to experience difficulties forming and maintaining friendships, tend to have fewer friends and spend less time with their friends than TD adolescents. They also experience higher incidences of loneliness and behavioural and emotional difficulties than their TD peers. The relationship between friendship, loneliness, and emotional and behavioural problems in adolescents in HFASD has important implications for interventions. One study previous study at RMIT investigated such relationships using parent reports, finding very few relationships and it was hypothesised that in future studies adolescent self-reports may be more revealing.

Objectives: This study investigated the friendships, loneliness, and behavioural and emotional problems of adolescents with HFASD compared with TD peers. The aims were: (1) to investigate the differences between parent and adolescent reports of friendship, and behavioural and emotional problems in the HFASD and TD groups; (2) to investigate group differences in friendship including number of friends, difficulties forming and maintaining friendships, time spent interacting with friends, mode of interaction with friends, and loneliness of the HFASD and TD groups; (3) to investigate the relationships between friendships, loneliness, and behavioural and emotional problems in adolescents with HFASD.

Method: Ten male adolescents (age 11 – 19 years) with HFASD, and 10 age-matched TD males, and one parent of each adolescent participated in the study. Parents completed the Social Communication Questionnaire (SCQ), Strengths and Difficulties Questionnaire (SDQ) and a friendship questionnaire. The adolescents completed the WISC Arithmetic and Vocabulary subtests, a friendship questionnaire, the Louvian Loneliness Scale for Children and Adolescents, and the SDQ.

Results: Data collection and analysis are currently nearing completion.

Delayed self recognition in children with autistic disorder: Evidence for a temporally extended self

Researcher/s: Cheryl Dissanayake, Joh Schembrey & Thomas Suddendorf
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Background: While clear evidence exists for the ability of children with autism to recognise themselves in real time, assessed via mirror self-recognition, little is known of their ability to recognise themselves over time. Temporal self awareness, as assessed via the delayed self-recognition (DSR) task, has been postulated to be associated with the ability to metarepresent. This ability, assessed using standard false belief tasks, is characteristically impaired in children with Autistic Disorder. However, those with Asperger’s Disorder are more able to pass false belief tests. Objectives: The objective in the two studies reported here was to explore delayed self recognition in children with Autistic Disorder and Asperger’s Disorder relative to one another and to their typically developing peers. A secondary aim was to establish whether performance on DSR was related to the ability to pass false belief tasks. Children’s affective response to their marked image was also explored to distinguish between ‘physical’ and ‘psychological’ self awareness.

Methods: Three groups of male children aged between 5- to 9-years comprising 15 children with high functioning Autistic Disorder (HFAD), 12 children with Asperger’s Disorder (AspD), and 15 typically developing (TD) children, participated in Study 1. Study 2 included younger children aged 4- to 7-years (18 HFAD and 18 TD). All children participated in a self recognition mark test using delayed video feedback, and a test of false belief. Affective responses displayed by the children when viewing the marked video image of themselves was also coded. Results: Children with HFAD, AspD and the TD children were equally able to use delayed video feedback to recognise themselves, independent of their performance on the test false belief, and their ability to use personal pronouns. Furthermore, no differences were found in their affective responses to their marked video image.

Conclusions: The results cast doubt on the proposed metarepresentational basis for the development of a temporally extended self, with children in all groups showing intact self recognition. Despite some deficits in false belief understanding and the use of pronouns, the children with HFAD were able to not only show delayed self recognition but they also showed positive affect when confronted with their marked image, as did the TD children indicating a level of psychological, in addition to physical, self awareness. Moreover, the finding that children with AspD and HFAD performed similarly on the DSR task adds to the increasing evidence that these conditions are not distinct diagnostic entities.

Parent and child factors associated with sleep problems in pervasive developmental disorders, Down syndrome and intellectual disability

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Background: Parent-reported sleep problems are common in children with a developmental disability, particularly those with a pervasive developmental disorder (PDD). Child sleep difficulties have been associated with challenging behaviour, child psychopathology and parent stress, but whether or not the relationship of these factors with child sleep differs across developmental disorders is largely unexplored.

Objectives: The aim was to examine whether parent or child factors purported to be associated with problematic child sleep differed for children with PDD, Down syndrome (DS) or intellectual disability (ID).

Methods: This was part of a larger study examining the influence of parent and child characteristics on sleep in children with a developmental disability. Parents (N = 76) completed demographics, Behavioural Evaluation of Disorders of Sleep (BEDS), Developmental Behavioural Checklist (DBC), Adaptive Behaviour Assessment System, Eysenck Personality Questionnaire-R, Parenting Sense of Competence, Parenting Hassles Scale, Levenson's Locus of Control Scale, and rated perceived control over their child's sleep and behaviour. Using BEDS scores children (M = 10.6 years, SD = 4.4) were classified into 3 groups: Recognised Sleep Problem (RSP), Unrecognised Sleep Problem (USP), and No Sleep Problem (NSP). Within the 76 families, three main developmental groups (N = 62) were also identified PDD (n = 30), ID (n = 18) or DS (n = 14). A series of Kruskal-Wallis tests and multiple comparisons using Mann-Whitney tests (Bonferroni adjusted alpha = .017) were used to examine differences between the 3 sleep groups within each developmental group for these parent and child measures.

Results: For the PDD group the sleep groups differed significantly on the DBC total score, the DBC self-absorbed, depression and hyperactivity subscales and the DBC autism screen. Hyperactivity differed for the RSP and USP, and RSP and NSP groups whereas for the other DBC scores only the RSP and NSP groups differed. For the DS group the sleep groups differed on parents' perceived control over their child's sleep behaviour with the RSP and NSP groups differing. No other child measures and no parent measures differed for the PDD or DS groups. No significant sleep group differences were found for any measure for the ID group.

Conclusions: Factors associated with sleep problems differed for children with a PDD, DS or ID. Sleep problems were related to behaviour for children with a PDD, particularly hyperactivity, but this was not so for DS or ID. Thus behavioural issues play a significant part in sleep difficulties in children with a PDD compared with other disabilities. This underscores that examining sleep and behaviour in mixed disability groups may obscure findings. It reinforces that when examining relationships between child sleep and parent or child behaviour, developmental disorders should be investigated separately. Further research with larger sample sizes is needed to confirm our results.

Parenting a child with an autism spectrum disorder: An exploration of the relationship between parental wellbeing, social support and parenting self-esteem

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Parents of children with an Autism Spectrum Disorder (ASD) are at increased risk of experiencing stress, depression and anxiety. Links between high parenting stress and corresponding problems in child and parent functioning have been reported for families with typically developing children. Parenting self-esteem (self-efficacy) can directly affect the quality of care, with improved self-efficacy being associated with increased quality of mother-child interactions. Furthermore, high parenting self-efficacy is strongly related to maternal ability to foster a healthy and happy childrearing environment.

Longitudinal research has shown that social-emotional support predicts enhanced parental wellbeing. Self-efficacy can be influenced directly through social persuasion in that a parent can be reassured about their parenting behaviour via feedback from observations from support people. Social support has been found to have main-effects on self-efficacy in addition to buffering-effects.

While there is much research supporting higher levels of stress and depression in parents of children with an ASD, the influence of wellbeing factors on parenting self-esteem is less understood. Findings for social support are also conflicting.

The aim of the current study was to examine the relationship between parental well-being and parenting self-esteem in parents of children with an ASD (aged 0-6 years) compared to parents of typically developing children. An additional aim was to examine whether social support played a moderating or mediating role between wellbeing and self-efficacy.

Participants completed an online or paper and pencil questionnaire. So far, 57 parents of children with an ASD have completed the questionnaire. Data for the comparison group will be drawn from an existing data base. Data are currently being analysed. It is anticipated that the findings will inform the development of prevention and intervention strategies addressing parenting wellbeing and parenting self-esteem, in order to best help families adapt to the challenges of parenting a child with ASD.

Parenting a child with an autism spectrum disorder: An exploration of the role of parental sleep and fatigue in the relationship between child characteristics, family functioning and the home learning environment

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Children with ASD often exhibit more problematic behaviours than typically developing children, which can be challenging for parents and families. Qualitative research has shown that parenting a child with an ASD is perceived as exhausting and fatiguing, yet fatigue has received little attention in parents beyond the post-natal period. Sleep disruption is common in children with ASD with parents of these children also experiencing more sleep problems than parents of typically developing children. Parental sleep and fatigue could impact on aspects of the parenting role and family functioning.

The aim of the current study was to explore the relationship between child behaviour and parenting outcomes, adapting an existing model to incorporate parental sleep and fatigue. Parenting outcomes included family functioning and the home learning environment. A further aim was to determine whether sleep, fatigue, family functioning and the home learning environment are more problematic in parents of a child with an ASD as compared to typically developing children.

Parents of children aged 2-5 years completed questionnaires online or in paper-and pencil format. So far, 40 parents of a typically developing child, and 44 parents of a child with ASD have participated in the study. A series of multiple regression analyses will be conducted to determine whether parental sleep and fatigue partially mediate the relationship between problematic child behaviours and family functioning/the home learning environment. Analysis of variance and t-tests will be used to determine group differences on the key independent and dependent variables, as well as demographic characteristics of the sample.

It is anticipated that the findings will have implications for identifying specific areas in which parents require additional support to assist their child in development and improve family functioning.

Using functional behavioural assessment to design an intervention package of Social Story™ and self-management

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Children with autism frequently develop problem behaviours. These behaviours are thought to reflect a skill deficit and frequently serve communicative functions. Effective interventions to address problem behaviour need to be based on functional behavioural assessment to derive individualised interventions that frequently include the teaching of functionally equivalent skills.

Carrying out functional assessments in natural environments is associated with a number of challenges including reactivity effects and the logistics of being present when problem behaviour occurs, especially for low rate problem behaviour, or behaviour most likely to occur at awkward times such as bed-time. Recent technological innovations have been designed to overcome these limitations. BI capture is a computer- and internet-based program that facilitates the video capture of behavioural events, including the antecedents to problem behaviour linked with a safe web-based interface to allow remote analysis of the data.

The current study was designed to examine the effectiveness of functional behavioural assessment using BI Capture technology leading to an intervention incorporating self-management procedures to decrease the occurrence of problem behaviours and increase compliance. The intervention study employed a within subject research design. The participant was a pre-school aged child with autism who exhibited high rates of non-compliance and aggression. The independent variables were the functional behavioural assessment, and a social story and self-management intervention. The dependent variables were the occurrence of problem behaviours and compliance.

The intervention was successful in increasing rates of compliance and reducing the occurrence of problem behaviour in several targeted situations (play time, meal time and getting dressed). The results will be discussed in relation to the existing research, and in relation to issues of social validity.

The acquisition of social functioning through video modelling

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Background: A deficit in social skills is one of the core features of autism spectrum disorders (ASD). Improvements in social functioning (initiations, pretend play, compliance) have therefore been identified as an important goal for remediation. Recent research has identified video modelling as a beneficial teaching format for children with ASD. Video modelling is a versatile intervention that capitalises on the potency of observational learning and is well suited to addressing the educational needs of children with autism. Video modelling interventions involve a child watching specifically made videotapes of positive examples of adults, peers or him or herself engaging in a behaviour that is being taught.

Objectives: We will report on a series of studies examining the effectiveness of video modelling and video self-modelling in improving the social functioning of young children with ASD. Studies vary in the type of setting where the intervention occurs, the specific target behaviours and additional elements used (incorporating prompting, social stories, reinforcement and peers). This series of studies extend previous research by systematically replicating existing studies and thereby contributing to the evidence base on video modelling. Furthermore, these studies address the limitations of existing research by also assessing social validity, intervention fidelity, maintenance, and generalisation.

Method: Studies utilised single subject research methodology. The participants were individual pre-school-aged children with ASD. The independent variable was a video-modelling intervention targeting specific social skills. The dependent variables were direct observational measures of the targeted social skills.

Results: Desired behaviour changes were observed in all cases. The findings are discussed in terms of variables and conditions that either enhance or limit the effectiveness of video-modelling procedures. Also discussed are issues of social validity of video modelling.

