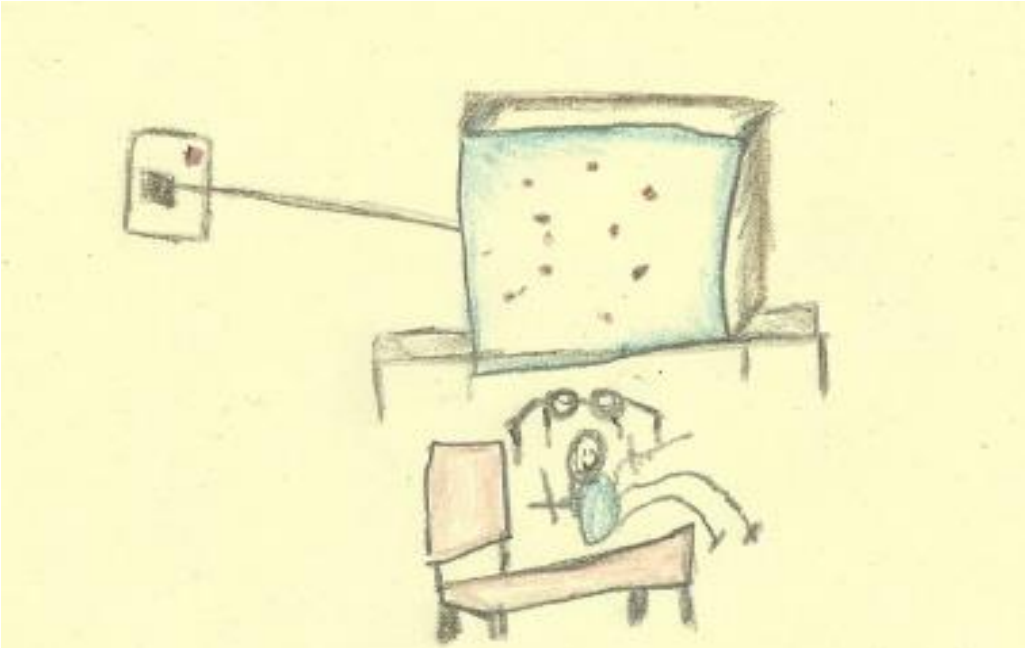


Ollie Hodgkinson, Age 7

Goldsmiths Action Lab Newsletter

CONDUCTING RESEARCH INTO ACTION, AND TAKING ACTION THROUGH RESEARCH

Introducing our Research Update Newsletter

Welcome to the Goldsmiths Action Lab Research Update newsletter! The lab was recently set up by Professor Elisabeth Hill to bring together researchers on several different types of projects in which she is involved. These projects range from investigations of typical and atypical development of motor skills and cognition (Research into Action), to studies relating to the experiences of individuals with neurodevelopmental disorders in everyday life, and the potential benefits of different interventions (Taking Action through Research).

The aim of this quarterly update is to keep in touch with those of you who have taken part in these research projects and to inform you about the results of these studies, as well as about further opportunities for participation.

The Newsletter

In each Research Update, we will highlight some of the studies being conducted by members of Goldsmiths Action Lab. This will include outlines of projects in which you may wish to participate, as well as the results of studies that have been completed. We will also aim to keep you up to date with presentations and publications of the research at conferences and in journal or news articles.

On the front of each newsletter, we would like to include a picture drawn by a child who has participated in one of our studies. The first ever front cover (above) has been designed by Ollie Hodgkinson (age 7). Ollie drew the picture after taking part in our 'Moving People' study, and it depicts his time doing experiments on the eye tracker, or "having his eye test". If your child has participated in one of our studies and would like to draw a picture relating to his/her experience, we would love to include it on a future newsletter. Please ensure that the picture does not take up any more room than the one shown above, and make it as colourful as you like. You can send the picture to Dr Emma Sumner at the address for the Department of Psychology, included on the back page of this newsletter.

We hope you feel that you have a better understanding of our research by the end of this newsletter, but do contact us if you would like further information.

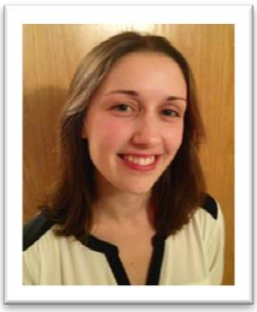
IN THIS ISSUE

Goldsmiths
UNIVERSITY OF LONDON

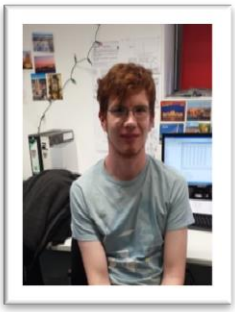
Introducing our team and our research

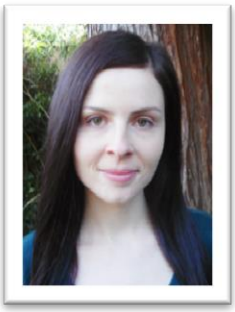
Professor Elisabeth Hill
Professor Hill has recently become the Pro-Warden for Teaching, Learning and Enhancement for Goldsmiths, but will continue her current research into neurodevelopmental disorders with the help of the Goldsmiths Action Lab members.
http://www.gold.ac.uk/psychology/staff/hill/

Dr Emma Sumner
Emma is a Postdoctoral Research Associate in the Department of Psychology at Goldsmiths. She is currently working with Professor Hill on a project concerning motor and social skills in neurodevelopmental disorders.
http://www.gold.ac.uk/psychology/staff/researchstaff/sumneremma/



Dr Laura Crane
Laura is currently a Research Fellow at City University, but completed her degree and PhD at Goldsmiths. As part of the Action Lab, she has been involved in projects exploring the experiences of receiving and communicating diagnoses of neurodevelopmental disorders.
http://www.city.ac.uk/health/staff-directory/dr-laura-crane





Dr Joanne Camp
Jo is a Postdoctoral Research Associate in the Department of Psychology at Goldsmiths, working with Dr Andy Bremner in the InfantLab. She is currently working on a project investigating how individuals with certain diagnoses understand and perceive their own bodies.

Dr Hayley Leonard
Hayley is a Postdoctoral Research Associate in the Department of Psychology at Goldsmiths.. She is currently working on a project investigating the effects of having an older sibling on infants' motor milestones.
http://www.gold.ac.uk/psychology/staff/researchstaff/leonardh/

Our research students and research assistants (from left to right on each row):

Dan Brady
PhD Candidate: Goldsmiths

Hana Kyjonkova
PhD Candidate: Goldsmiths

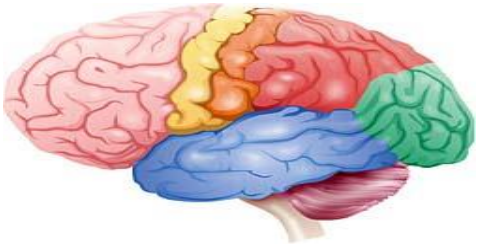
Lisa Dockery
PhD Candidate: Goldsmiths

Livia Bernardi
PhD Candidate: City University

Louise Balslev
MSc student and Research Assistant: Goldsmiths

Helen Baker
Research Assistant: Goldsmiths

NEURODEVELOPMENTAL DISORDERS



What are neurodevelopmental disorders, and which disorders do we research?

The term 'neurodevelopmental disorder' is used widely to describe atypicalities in brain processes and behaviour which are present from birth, and extend into adult life. Some neurodevelopmental disorders, such as Down syndrome and Williams syndrome, can be traced to changes in specific chromosomes, and can therefore be diagnosed around birth. Other disorders are diagnosed in childhood, and sometimes adulthood, and are likely to be caused by a number of genetic factors interacting with brain development over time. These neurodevelopmental disorders include Autism Spectrum Disorder (ASD) and Developmental Coordination Disorder (DCD), and these are the focus of the majority of our research. Both disorders are diagnosed on the basis of a number of behavioural symptoms, using criteria from the American Psychiatric Association and / or the World Health Organisation, along with clinical judgement.

What is Autism Spectrum Disorder (ASD)?

ASD is thought to affect around 1 in 100 individuals in the UK. It is diagnosed on the basis of repetitive behaviours and restricted interests, along with difficulties in social communication and language. Although certain symptoms or atypicalities are present from birth, they may not be recognised until around the time that the child begins to talk, or until much later in childhood or adulthood. As well as having difficulties in social situations, which may be related to the understanding of social cues, individuals with ASD also often require strict routines. Some may also have unusual responses to sensory stimuli, such as bright lights, loud noises, strong flavours or certain fabrics. ASD is defined as a 'spectrum' because of the wide range of abilities and behaviour seen in different individuals with a diagnosis, with the most severely affected remaining nonverbal, while others leading high-flying careers, such as Temple Grandin (pictured, centre). Our research focuses on the development of motor and social skills, as well as the long-term employment outcomes and experiences of diagnosis of individuals with ASD.

What is Developmental Coordination Disorder (DCD)?

DCD is thought to affect around 5% of the population, meaning that it is likely that there is at least one child with DCD in most classrooms. It is diagnosed on the basis of difficulties with motor skills that have a significant impact on academic achievement and activities of daily living. Examples of these difficulties include handwriting and dressing, or in the case of Daniel Radcliffe, who has the disorder, tying shoelaces (pictured, centre). In the UK, the term 'dyspraxia' is sometimes used to describe these motor difficultes, while in other instances, 'dyspraxia' is used to describe more widespread difficulties. Within the diagnostic framework used within the UK, however, only DCD is specified, complying with recommendations from leading academics and clinicians in a European Consensus Statement. Like ASD, DCD is usually diagnosed in childhood, but difficulties continue into adulthood, including associated problems with time management and organisation, and social-emotional difficulties. Our research focuses on a number of these areas of difficulty, including motor skills, processing of information, and social abilities. We also investigate the long-term effects of DCD on adult life, and the different experiences of receiving a diagnosis at different ages.

Left: Temple Grandin is a Professor of Animal Science at Colorado State University, and also lectures on her experiences of growing up with ASD; *Right*: Daniel Radcliffe (Harry Potter) explains that he uses Velcro on his shoes as he still cannot tie his shoelaces.

Key Organisations

The National Autistic Society:
http://www.autism.org.uk/

Movement Matters:
http://www.movementmattersuk.org/

MOTOR SKILLS

Gross Motor Skills
These include crawling, walking, and movements that require coordination of a number of different parts of the body, such as throwing and catching.

Fine Motor Skills
These include grasping objects, and smaller movements that require manual dexterity, such as cutting with scissors or holding a pencil to write.

Our research investigates both types of motor skills in infants, children, adolescents and adults, with and without neurodevelopmental disorders.

COGNITIVE SKILLS

The term 'cognition' refers to the processing of information that occurs in the brain; if we consider the human mind as a computer, cognition would be the storage and processing of information being 'inputted' through our senses. The type of experiences we have affects this input, and the development of our motor skills influences the types of experiences we have. We therefore conduct research into the relationships between motor and cognitive skills over development.

Social Cognition

Social cognition involves the processing of social information, including the monitoring of one's own behaviour and the interpretation of others' social cues, thoughts and emotions. This is an area of difficulty that is central to ASD. We are currently conducting research to help us understand if there are similar difficulties in DCD, and whether these are related to motor abilities in both ASD and DCD.

Executive Functions

Executive functions are high-level cognitive abilities, such as planning and multi-tasking. Difficulties in these skills are often reported in both ASD and DCD. We have investigated a wide range of executive functions in children with DCD, and a summary of our findings are included in this issue.

ACTION

The term 'action' is related to both motor skills and cognition, as it involves the processing of information to perform a particular motor act. Our 'Research into Action' therefore combines these areas of study in those of different ages, with and without neurodevelopmental disorders.

Research Update

CONDUCTING RESEARCH INTO ACTION

'Moving On Up' study

Dr Hayley Leonard, Professor Elisabeth Hill, Livia Bernardi & Professor Lucy Henry (City University)

Children completed a number of executive function tasks, some of which used verbal information and required them to solve them using their language skills. The other tasks used nonverbal information and required them to solve them using motor skills or by processing visual information. They also completed some tests of their movement ability, including measures of throwing and catching, balance, drawing and small movements with their hands, such as placing pegs in a peg board.

What did we find out?

We found that motor skills were related to children's performance on some of the executive function tasks, but only when these tasks involved processing visual information or required a motor response (so did not rely on their language skills). When we compared the children with DCD with peers without a diagnosis, children with poor motor skills had the most difficulty with the nonverbal measures of complex thinking skills.

Why is this important?

Executive functions are extremely important in the classroom and everyday life, and understanding the factors that affect these skills will help us to identify children at risk of falling behind and give them extra support. For example, if a child is having a lot of difficulty with handwriting (a motor skill), they may find it extremely challenging to take in new instructions and copy down work from the whiteboard while they are concentrating on the skill of writing. Knowing more about the problems that children like this might have during class activities will allow teachers to plan appropriate support for them.

What are we doing next?

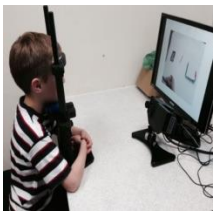
We are delighted that Livia, the research assistant on this project, has now been awarded funding to complete her PhD at City University. She is currently recruiting more children with DCD between the ages of 7-11, so if you are interested in taking part, please contact her on the DCD Project email address: DCDproject@gold.ac.uk.

'Moving People' study

Dr Emma Sumner, Professor Elisabeth Hill, & Dr Hayley Leonard

Motor skills support the way we interact with the environment and those around us. Professor Hill and Dr Sumner are investigating the relationship between motor abilities and social cognition in three separate groups: children with DCD children with ASD, and a control group of typically-developing children.

Innovative eye-tracking games have been developed, which examine action perception, oculomotor function, and processing of social scenarios. These measures support the more standardised cognitive and motor assessments that children complete during the research session. This is a great way to further our understanding of the link between motor and social functioning. Even better, children love seeing the eye-tracking technology we have here at Goldsmiths!



We are seeking children who have a diagnosis of DCD / dyspraxia **or** ASD (but not with a dual diagnosis of the two disorders) aged 7-10 years, to take part In this study. Please contact Dr Emma Sumner on the project email address: DCDproject@gold.ac.uk, or on e.sumner@gold.ac.uk (for parents of children with ASD).

'Movers and Shakers' study

Dr Hayley Leonard, Professor Elisabeth Hill, Louise Balslev, & Dr Andy Bremner

The achievement of motor milestones, such as rolling over, crawling and walking, are important landmarks in an infant's development, and are the beginning of a more independent and socially-active life. It might be expected that having an older sibling could affect how quickly an infant reaches these milestones, by providing a 'model' of the actions that the infant wants to achieve. However, this might depend on the older sibling's own motor development and the relationship between the siblings. This study is investigating the different influences on an infant's motor development, using a diary in which parents keep track of when their infant reaches different milestones between the ages of 4 and 18 months. Information is also collected about the older sibling's motor skills and the relationship between the siblings. The study will give us a better understanding of a number of factors affecting motor development, which we know is important for later social and cognitive development. The knowledge we gain can also be applied to situations in which an older sibling might have poor motor skills, perhaps due to having a neurodevelopmental disorder.

Louise Balslev will be recruiting some more infants for her own MSc project. Louise will need parents of infants who are 12 months old to complete some questionnaires relating to their child's motor skills. These infants can be firstborns or have one older sibling. If you are interested in participating, or know anyone who would like to hear more about the study, please email Louise on lbalso01@gold.ac.uk.

TAKING ACTION THROUGH RESEARCH

Diagnosing DCD: The Parents' Perspective

Dr Laura Crane, Professor Elisabeth Hill, & Claudia Alonso (former MSc student, Goldsmiths)

As part of her MSc project, Claudia developed an online survey about parents' views and experiences of receiving a diagnosis of DCD for their child. In total, 228 parents completed our survey; sharing their insightful views on what works well, and what needs to be improved, when it comes to diagnosing DCD.

Our survey showed that, on average, a diagnosis of DCD was confirmed two and a half years after parents initially sought help in relation to their child's motor difficulties. Disappointingly, around half of the parents we surveyed reported that the professional they first contacted in relation to their child's difficulties (usually a GP, Health Visitor, or their child's teacher) had no knowledge of DCD, or very superficial knowledge. This emphasises the importance of raising awareness about the signs and symptoms of DCD, which is a very under-recognised disorder, even though it is not uncommon.

Taking into account the whole diagnostic process (from the point at which a professional was first contacted, to the stage at which post-diagnostic support was being sought), we found that parents' views were very mixed: 45% of parents were dissatisfied and 39% were satisfied. We found that there were three key aspects that tended to predict whether parents were satisfied with the diagnostic process: (1) The level of stress the parents experienced while seeking a diagnosis for their child, (2) The manner of the professional that gave the diagnosis of DCD to their child, and (3) How satisfied the parents were with the support they were given after the diagnosis.

Importantly, the support that parents were given post-diagnosis was seen as most unsatisfactory, with 43% of parents not offered any practical help or support during the diagnostic process or in follow up appointments. This is an area in which small, cost-effective changes to current procedures could make a real and important impact on parents' satisfaction with the diagnostic process. It is also a priority for future research; identifying what support parents value, plus which aspects of post-diagnostic support are most in need of improvement.

We are currently analysing these results in greater depth and hope to publish the findings in 2015. For more information on this project, please contact the research team on DCDproject@gold.ac.uk. If you are interested in a related project in ASD, feel free to contact Dr Laura Crane on Laura.Crane.2@city.ac.uk.

The Effectiveness of Shared Reading as a Whole Population Health Intervention

Professor Elisabeth Hill, Helen Baker, & Professor Philip Davis & Fiona Magee (University of Liverpool).

Organised groups in which individuals get together to read ('shared reading groups') are proving to have profound health implications. Research has shown these groups tackle the problems associated with poor health, including chronic loneliness and isolation, and can help people to improve their social functioning, self-confidence and self-esteem. However, despite research suggesting that shared reading groups are beneficial for mental health, the effects have only been examined in a limited number of people. The purpose of this study is to investigate whether shared reading groups, delivered by the charitable social enterprise The Reader Organisation, are an effective whole population health intervention by working with seven distinct populations of people: i) adults in the community, ii) older adults in the community, iii) adults suffering from a physical health condition, iv) students vulnerable to mental health problems, v) adults with mental health problems, vi) adults suffering from addiction problems, and vii) children in schools. For each group of people, we hope to determine what the specific and cross group effects are of shared reading. If you are interested in learning more about the Reader Organisation, please visit their website: http://www.thereader.org.uk/

School Science Days

We are always grateful when schools agree to take part in research and help us to reach lots of children. As a way of saying thank you to the local schools that have participated in the ***'Moving People'*** study so far, we organised three fun-filled science days in the psychology department at Goldsmiths in 2014. We were very lucky that this particular project is in a position to support such a day, and also that we have enthusiastic members of the lab, and wider in the department, that offered to run various psychology-related activities for the children.

Children's hand prints were measured and compared to their height in their own experiment

There were two aims for the science days. The first aim was that the children would learn about psychology and the research taking place in our department. The second aim was that the children completed the 'eye tracking' games that form part of the ***Moving People*** study. This meant they experienced the technology that we have here at Goldsmiths – that which is really advancing psychological research.

Each science day started with an introduction to psychology and then moved on to practical activities that explored: music and the mind, sleep and the brain, social psychology, magic and cognition, and demonstrations of the eye tracking, EEG and motion capture systems.

Children also had the opportunity to be a young scientist on the day and conduct their own research project. They investigated the relationship between hand size and height, taking measurements and plotting them on a graph – with some hand painting thrown in for good measure!

At the end of each day, the children made posters to showcase what they had learned. We were really impressed at how much the children could remember! The picture shown below is an example from a section of one super poster from the science day.

For most of the children, it was their first experience of a university, and we hope it was inspiring and as enjoyable for them, as it was for us. Thanks to everyone involved!

A PARTING WORD

We would like to thank everyone who has participated in our studies so far:

The children, parents and teachers from Fairlawn, All Saints', Edmund Waller Primary School, Rosendale School, and Goose Green School (SE London); all the individuals with ASD and DCD, as well as their parents; Dr Andy Bremner and the Goldsmiths InfantLab team; the Reader Organisation; Goldsmiths staff who contributed to the Science Days, as well as our technical team, headed by Maurice Douglas.

If you are interested in learning more about our research, you can visit the Goldsmiths Department of Psychology website, www.gold.ac.uk/psychology

We are excited to tell you that we will be setting up our own Goldsmiths Action Lab website this year, which will provide further details about ongoing and completed projects, links to relevant organisations and materials, videos and documents relating to presentations and projects, and plenty more. We hope to be able to update you about this website in our next newsletter!

We are looking forward to the year ahead, and hope that 2015 proves to be a happy and successful year for you and your family.

Happy New Year!

Goldsmiths Action Lab
Newsletter

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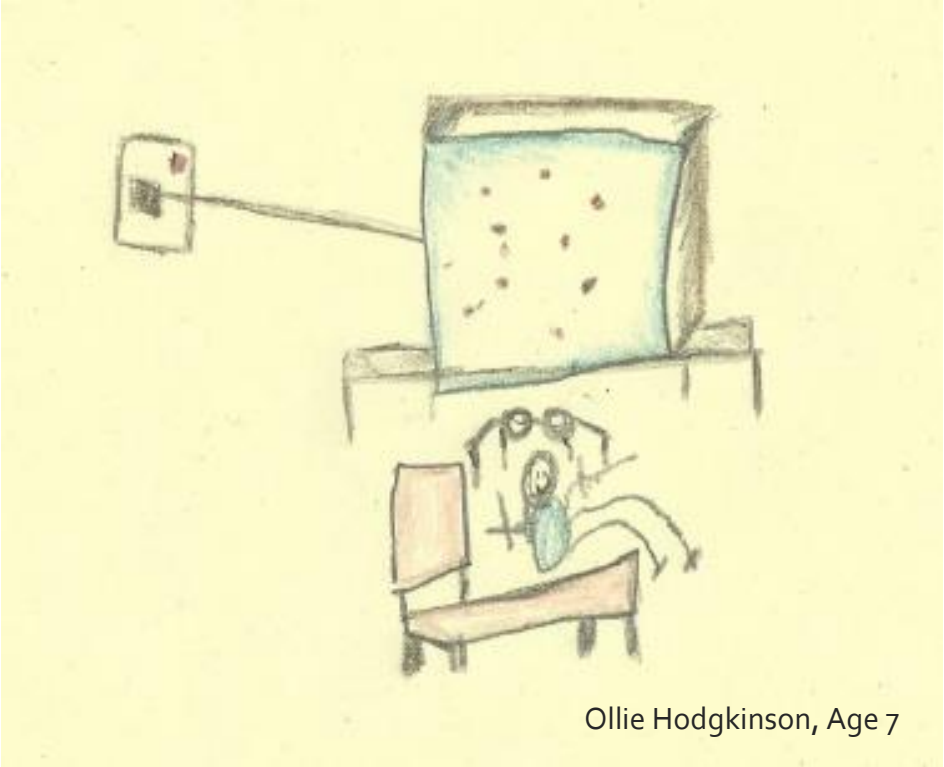

Ollie Hodgkinson, Age 7

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