Neurolab Newsletter

Summer Issue, August 2023

In this issue

University of East Anglia

Neurolab

Thank you from all of us at the UEA Neurolab!

Welcome to the summer issue of our Neuropsychology lab (Neurolab) newsletter. We hope you are keeping well. We are excited to share with you updates on our progress on several research projects, publications, and work that you are kindly supporting. Our progress would not be possible without your contribution! Thank you for all the support you have given us by taking part. We hope you enjoy our newsletter!

Neurolab contact:

neurolab@uea.ac.uk

www.stephanierossit.com

01603591674

@UEANeuroLab

Current research

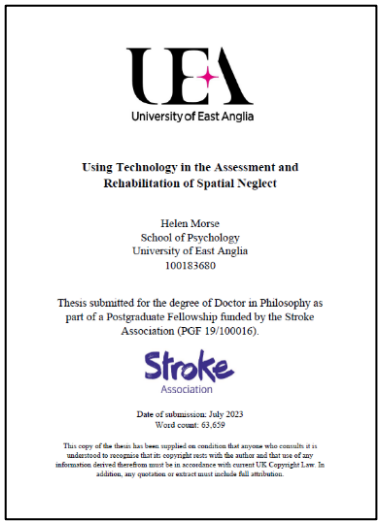
Update from Dr. Stéphanie Rossit!

It's been an incredibly busy and rewarding time in the lab since the last newsletter. I am incredibly proud of what everyone in the lab has achieved and thankful to all our participants, collaborators, and supporters.

Since last Autumn, I am excited to tell you that together with our industry partner we have been awarded a research grant from the National Institute of Health Research (NIHR). This will allow us to further develop our EyeFocus app for rehabilitation of vision and attention post-stroke. Stroke survivors, carers and clinicians are very much at the centre of this work so keep an eye out for a call for participants.

I am also excited to tell you that our Stroke Association funded Postgraduate Fellow, Helen Morse, has submitted her PhD thesis (her PhD examination is booked for September) and secured a post at the Norwich Clinical Trials Unit. Helen's work has been pivotal to the lab. She also had a paper accepted about our new diagnostic measure of attention post-stroke – CENT. I am sure you'll join me congratulating her for this achievement!

Dr. Stéphanie Rossit



University of East Anglia

Using Technology in the Assessment and Rehabilitation of Spatial Neglect

Helen Morse
School of Psychology
University of East Anglia
100183680

Thesis submitted for the degree of Doctor in Philosophy as part of a Postgraduate Fellowship funded by the Stroke Association (PGF 19/100016).

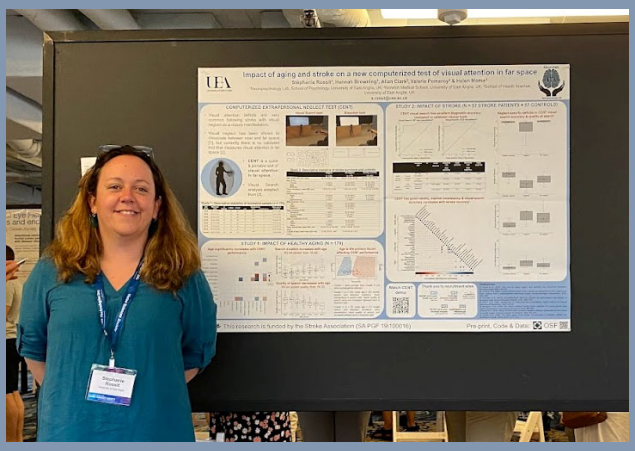
Stroke Association

Date of submission: July 2023
Word count: 63,659

This copy of the thesis has been supplied on condition that anyone who consults it is understood to recognise that its copyright rests with the author and that use of any information derived therefrom must be in accordance with current UK Copyright Law. In addition, any quotation or extract must include full attribution.

In January I gave a talk at the prestigious BIU Vision seminar series organized by Bar Ilan University School of Optometry and Vision Science. My talk entitled ‘Human see, human do? Tool use knowledge representations during picture viewing, pantomiming and real grasping’ has been recorded and if you’d like to watch it, you can scan this QR code with your phone:

In May I had the privilege to present our Stroke Association research at the Annual Meeting of the Vision Sciences Society in Florida (USA). The feedback we received was excellent and I also learned a lot from the presentations from other groups there. I also forged new collaborations with colleagues at Essex (UK), Iceland and MIT (USA) and look forward to telling you more about this new research!



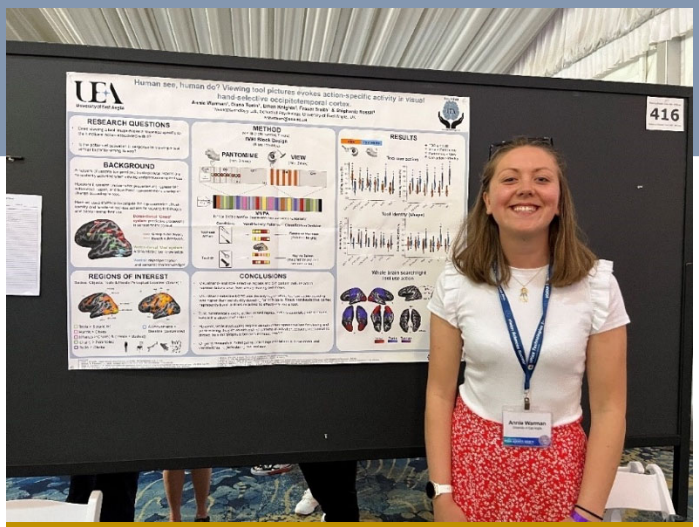
Since the 1st of July I am lucky enough to be on research leave or sabbatical. My plan is to continue working with our incredible team of researchers and collaborators, including stroke survivors and their carers, to write-up and disseminate our stroke research and submit a large grant in January 2024. Fingers crossed!

Update from Annie Warman on her PhD research and publications!

I'm now a good way through the third year of my PhD research, and I'm very pleased to have submitted a chapter of my PhD to the Quarterly Journal of Experimental Psychology. This was a registered report which means that my methods and analysis plans were peer reviewed and accepted before we collected data to reduce publication bias towards significant results. We found evidence of a lower visual field advantage in action and affordances to pictures of objects that we can grasp by the handle. I took this study to my first ever in-person talk at the UEA Psychology Postgraduate Conference recently and got some great feedback.

In May, Stephanie and I attended the Vision Sciences Society Conference in St Pete Beach, Florida. It was great to meet so many experts from all over the world and keep up to date with the latest vision research. I presented a poster on another of my PhD chapters where we found that hand areas of the brain represent the actions required to effectively use a tool and had some fascinating conversations with academic 'celebrities'.

I am now wrapping up my PhD studies and analysing iPad reaching task data which we collected before and after COVID with participants with mild cognitive impairment and Alzheimer's dementia. Thank you so much to everyone who took part, and I hope to have results soon!



Annie Warman
PhD candidate

Update from our EyeFocus study and what we are doing now

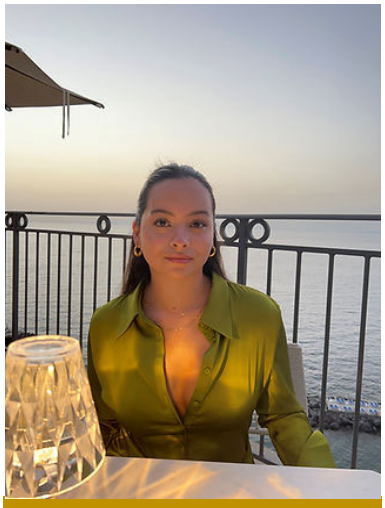
Thomas and Ava on their experience with the Eye Focus study

For our undergraduate research, we explored the feasibility and potential efficacy of EyeFocus, which is an innovative telerehabilitation approach for stroke survivors living with spatial inattention.

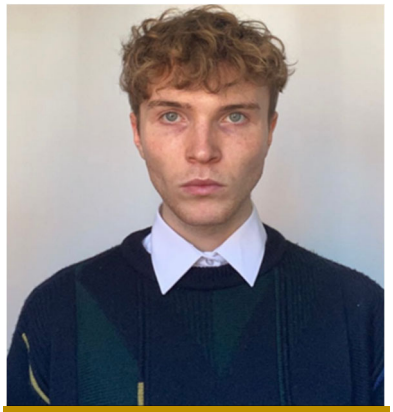
EyeFocus is an app installed on a mobile tablet that is set up in stroke survivors' homes for people to use independently.

The app is grounded in existing successful interventions and works by encouraging eye movements to the neglected side.

We hope the EyeFocus app will address the unmet need for effective rehabilitation approaches for spatial inattention and reduce current barriers (e.g., transport to medical centres and long sessions) for stroke survivors who would benefit from rehabilitation.



Ava Redston
Undergraduate Psychology student graduated summer 2023!



Thomas Hunter
Undergraduate Psychology student graduated summer 2023!

Update from our EyeFocus study and what we are doing now

What are we doing now?

Ava Redston

Whilst completing my final year, I worked with a social venture that endeavoured to help strengthen and maintain family ties between those in prison and their loved ones. The company has strong ties with prior academic psychological research and has been shown to play a key role in the well-being of inmates and their rehabilitation.
EyeFocus provided me with real-world research skills. In the future, I hope to continue my research to both develop and help others improve current rehabilitative methodologies in neurological disorders.

Tom Hunter

Alongside my final year dissertation, I began my role within Child and Adolescent Mental Health Services (CAMHS) as a Developmental Assistant Practitioner. It is with great joy that I have now stepped into the role of Assistant Practitioner and Equality and Diversity Champion within my team. The knowledge and skills gained from working on the EyeFocus project have nurtured my ability to provide more holistic and informed care in my current position.

Collaborating on this project was especially rewarding, and we would like to express our deepest thanks to those who generously gave their time and trust to this project. We are also hoping to submit a journal article from our research projects in due course.

Hannah Browning's PhD project!

Hannah Browning
PhD candidate

Photo (above) of Hannah and her son Max

Hello, my name is Hannah Browning, and I am a first year PhD student with the Neurolab at UEA. My research area focuses predominantly on perception and action and how sensorimotor experience shapes this. For example, how losing an arm might impact how we process and perceive information about objects (for example, cutlery). In those with two hands, research has shown that when viewing objects, we have a bias to certain areas. However, much of this work has been designed using 2D images presented on a screen as a proxy to real world 3D objects. My first study will see if we can replicate these findings using real world 3D object replicas and if this changes between people with one hand vs two hands. In addition, I am planning a brain imaging study to see which brain areas represent how to use a tool correctly.

If you or somebody you know would like to take part in this research, we are currently seeking one handed and two-handed participants to take part later this year and next year. To find out more please contact us!

Additionally, you might have seen us on ITV news Anglia recently, if you missed it you can find out more about our upcoming research by scanning this QR code:

Updates from Emily Mason and Piotr Barc on their experiences of the Graspability project and some exciting results!

Earlier work with stroke survivors discovered that visual inattention to one side of space could be improved by object graspability. Participants were able to locate graspable objects, like mugs, on their affected side.

In our last newsletter, I announced plans to continue data collection for the object graspability eye-tracking project, exploring whether participants who had not had a stroke, demonstrated a similar bias towards graspable objects. A total of 64 participants agreed to have their eye movements tracked, while they searched for graspable and non-graspable target objects, amongst a mix of irrelevant graspable and non-graspable objects.

I am thrilled to announce that we have finished data collection for this study, and the results are in! The graspability of an object was found to improve attention during search, as graspable objects were located faster than non-graspable ones. These findings suggest that the improved attention to graspable objects is not unique to stroke survivors.

Currently, I am working on writing the paper, and aim to submit it for publication by the end of the year. If successful, this will be my first publication. I also hope to present the work at the Experimental Psychology Society conference in January, and at the European Conference on Visual Perception, in August 2024.

Emily Mason
PhD candidate

Updates from Emily Mason and Piotr Barc on their experiences of the Graspability project and some exciting results!

Attentional dysfunction is a common consequence of brain injury, manifesting in disorders such as visual neglect and extinction. These leave patients with an inability to attend the affected side of space, impacting their ability to navigate everyday life. Research has shown that features of objects, as colour, novelty and salience typically, can modulate attention. Subsequently research has also indicated that action-based features, such as if an object is graspable or not, have been shown to enhance attention to these objects. These effects have been demonstrated in clinical samples. However, little work has been done in healthy adult populations.

As part of this project which I undertook for my undergraduate dissertation, began by PhD student Emily Mason, and under the mentorship of Dr Stephanie Rossit, we aimed to investigate if such positive effects on attention could be found. Using a novel visual search task, we sought to investigate if objects with action-based features enhance attentional allocation to themselves.

Using an eye-tracker, participants had their eye-movements monitored whilst they searched for a target object, against an array of other objects. Our findings showed that graspable objects were faster located then non-graspable objects, and further receive prioritisation during a visual search task. The similarity between healthy adults and those found in patient populations suggests that this line of research may be promising in beginning of a new rehabilitative program for those dealing with visual neglect or extinctions.

A huge thank you to everyone who participated and aided in the completion of this project! It has been a truly transformative experience.

Piotr Barc
Undergraduate Psychology student graduated this summer!

Update from our former lab member Amy Jolly!

Amy Jolly
Previous lab member & current PhD student at the University of Cambridge

Hi, I am Amy, a former student at the Neurolab. I was first introduced to Neurolab through my third-year undergraduate project, where I investigated the role of visuomotor feedback training on pseudoneglect in healthy populations and in those with autistic traits. I enjoyed my time at Neurolab so much that I decided to remain at UEA and continue my studies through an MSc in Cognitive Neuroscience, with Stéphanie kindly agreeing to remain my supervisor (despite being on research sabbatical!).

During my MSc project I travelled around Norfolk collecting pilot usability data for the C-SIGHT trial; this was an incredibly rewarding experience and taught me many valuable skills needed for running a trial. In addition, I collected normative data for the CENT software, more can be read about this normative data in Neurolab's recent publication (see page 13)!

I look back fondly on my time at Neurolab, Stéphanie was a brilliant supervisor and mentor and I am grateful for the time I spent there. Many skills I learnt at Neurolab I still use for my current roles within the Stroke Research Group, based at the University of Cambridge. I have been working within the group for four years, first as a Research Assistant and currently as a PhD student. My research aims to better understand neuropsychiatric symptoms and fatigue in cerebral small vessel disease.

Quick Hello from Hannah Clarke

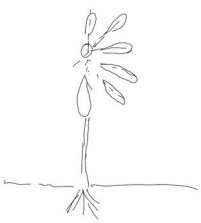
Hannah Clarke
Neurolab Intern and Undergraduate Psychology Student

Hi, I'm Hannah, I'm currently undertaking my BSc in Psychology. Since January I've been interning with Dr Stephanie Rossit and the Neurolab. This experience has been invaluable and has supported me with having a greater understanding of research methods, understanding the impact strokes can have on people's lives, and the various neuropsychological tests and rehabilitation methods used in stroke recovery.

I have mainly been working on the visual representation project where stroke survivors (with and without spatial neglect) and younger and older controls were asked to draw a daisy, a butterfly, themselves, and someone else. I have been involved with the coding of this data and preparing it ready for analysis. Alongside this I have been coding some of the hand laterality task data where participants saw either the top or the palm of a left or a right hand and had to say whether the hand was a left or right hand. Finally, I have also begun learning how to map stroke locations on brain scans.

Hopefully some of this data will be ready for analysis over the next few months. I am also hoping to be able to write my dissertation on this exciting research and hopefully we can share some of these results with you in the future.

Below are examples of drawings from our stroke survivors



Stroke Interventions Trial Update

Crina Ene
Trainee Clinical Psychologist

We are in the process of writing up results of our Feasibility Randomised Controlled Trial of two online psychological interventions for stroke survivors, conducted as part of my professional doctoral training as a Clinical Psychologist at the University of East Anglia. We greatly appreciate the contribution of the NeuroLab members who kindly agreed to take part and provided valuable feedback. Thanks to your input we were able to obtain a fantastic dataset!

We developed two interventions for this study, one to help stroke survivors set goals, plan and problem-solve, and the other to provide information about stroke and the brain. We aimed to find out if it would be feasible and acceptable to investigate the efficacy of online executive function rehabilitation in a full clinical trial. Our results suggest that a full clinical trial would be feasible and acceptable to stroke survivors and services. Both interventions received positive feedback from stroke survivors, which we were very happy to hear. We experienced challenges finding participants for our study, and this is one of the most common difficulties researchers encounter when conducting studies in stroke, so we plan to think carefully about ways in which to find participants in a future study.

Other news

Congratulations to all Neurolab students for their graduation!!!

Paper published in Aging, Neuropsychology and Cognition!

› Neuropsychol Dev Cogn B Aging Neuropsychol Cogn. 2023 Jun 14;1-22.
doi: 10.1080/13825585.2023.2223903. Online ahead of print.

Aging effects on extrapersonal (far-space) attention: cancellation and line bisection performance from 179 healthy adults

Helen Morse [1], Amy A Jolly [2], Hannah Browning [1], Allan Clark [3], Valerie Pomeroy [4 5], Stéphanie Rossit [1]

Affiliations + expand

PMID: 37314105 DOI: 10.1080/13825585.2023.2223903

Are you going to the FESN HNPS meeting in Greece? Come say hi!

Dr. Rossit is leading a symposium sponsored by the British Neuropsychological Society on 'Leveraging technology to improve diagnosis of attentional deficits post-stroke'. She will be presenting our new assessment tool for spatial neglect and colleagues from Switzerland, USA and Belgium will be presenting their work.

Are you going to the UK Stroke Forum? Come say hi!

----Parallel stream 3D (day 2)----

Dr. Rossit is leading a parallel session with Dr. Vancleef (University of Durham) on *Assessment and Rehabilitation of visual perceptual and attentional impairments after stroke.*

---Exhibitor SIGHT Stand (all 3 days)---

Come to our stand for the official launch of our new neglect test! Come say hi and try some of our tools!

& we have some posters too!

Stroke Association

Contact us

Want to be a participant in our research or help?

Please e-mail: neurolab@uea.ac.uk

Or call and leave a message: 01603591674

Feel free to share this newsletter with family and friends and if you know anyone interested in helping our work, please do encourage them to contact us.

We are always looking for volunteers for our research projects and love to receive feedback about our work.

If you would like to be removed from our mailing list please e-mail: ***neurolab@uea.ac.uk***

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