



Transcript

Lynette Thomas: Prynawn da pawb a chroeso i'r Wyl Seicoleg. Good afternoon everyone and welcome to our OpenTalks Festival of Psychology. I'm Lynnette Thomas and I'm the Deputy Director for Strategy and Development at The Open University in Wales. It's wonderful to see so many of you here with us today, by name if not by picture, and I hope you find today's event to be thought-provoking and useful to your work and study. The Open University in Wales is a university with a social purpose. Our goal is to make learning possible for everyone, regardless of background or circumstances, to improve people's lives and have an impact on society. Today's event is part of our civic mission, and we're proud to be supporting academics to share and spread knowledge.

Over the next two hours, we want to give you the opportunity to hear about areas of psychology that you might not have considered before. Of course, it's always a welcome opportunity to showcase some of the fantastic research happening across the university sector throughout Wales. We're very fortunate to be joined today by colleagues from within The Open University, Wrexham Glyndŵr University, Bangor University and University of Wales Trinity Saint David.

We will introduce you to each of them as the afternoon goes on, but for now let me welcome them all and thank them for giving up some of their valuable time this afternoon. We're very pleased to have worked on today's festival alongside the British Psychological Society in Wales and I'd like to thank all those who were involved in organising today's activities. A big thank you also goes to my colleagues at the School of Psychology and Counselling, they've been the driving force behind today's event. And it's my pleasure to welcome a member of The Open University in Wales team, Stephen Robinson, who will be hosting the festival this afternoon.

Just a few final digital housekeeping points from me before I hand over to Stephen. Your microphones and cameras will remain off during the event, the chat is open if you want to say hello but please use the Q&A function to ask our speakers questions. Both the chat and Q&A can be found at the bottom of your screen, and both English and Welsh questions are welcome. It's been lovely to welcome you all here today, I hope you enjoy the event. Now, I handover to your host (with the most!) for the afternoon - welcome Stephen.

Stephen Robinson: Thank you Lynette. Prynawn da, croeso - good afternoon and welcome. My name's Stephen Robinson and I'm a staff tutor in psychology and counselling at the Open University in Wales. You're all very welcome to this Open Talks event, the inaugural Festival of Psychology in Wales, organised by The OU in association with the BPS. I'd like to thank my colleague Sharon Davis, for her original idea that led to this event, as well as Louise Newbigging and Helen Dare and her team for all of the work leading up to today's event.

In terms of our audience, we have a wide range of people joining us from locations across Wales and well beyond, and I'm really pleased to extend a warm welcome to all of you from the School of Psychology and Counselling and from The Open University in Wales.

Some of you may have joined us today because you already work in the field of psychology and others because you're studying psychology at school, college, or university. We hope that today's festival will give you an opportunity to enhance your learning through hearing from a number of researchers, who are experts in their fields of study. Others amongst you might be joining us because you're considering future careers in psychology, and hopefully you'll get plenty of inspiration today. Finally, some of you may not be studying psychology or considering a career, but rather just have a general interest in the discipline and how it can



inform us about aspects of human life and experience. But whatever your reasons are for joining us, we're really pleased that you've taken the decision to be here today. So thank you for that.

As many of you will be aware, psychology is a really diverse discipline. Many definitions will refer to the science of mind and behaviour, but I'd like to briefly share a broader definition that comes from the American Psychological Association as I think it captures the diversity of the research that we're going to be hearing about today. So, the definition is as follows:

'Psychology is the study of the mind and behaviour. The discipline embraces all aspects of the human experience, from the functions of the brain to actions of nations. From child development to care for the aged. In every conceivable setting from scientific research centres to mental health care services, the understanding of behaviour is the enterprise of psychologists.'

So as you can see, the definition shows the scope of the discipline, and I think it encapsulates really well the topics that are going to be discussed today.

So first we're going to be hearing about how children act as language brokers for parents after they've migrated to a new country, and how that affects the relationship between parent and child. We'll also learn about innovative online experimental research into Parkinson's disease and about online teaching and children's literacy learning through the pandemic. Finally, we'll learn about how our consideration of gender traits affects societal behaviour. So, a really broad range, and if you'd like more details in each speaker's talk, we are just about to post a link to the agenda in the chat now.

So, first of all, I'd like to extend a warm welcome to our keynote speaker Professor Sarah Crafter. Sarah is a professor in cultural developmental psychology at The Open University and is going to talk to us about migration and child language brokering. You're very welcome, Sarah.

Professor Sarah Crafter: Thank you, Stephen. Thank you Lynette, and thank you to all the organisers for inviting me. Prynawn da everybody. Good afternoon. It's a pleasure to be here. I'm just going to quickly upload my presentation and hope that you can all see that well.

So as Stephen said, what I am interested in as a cultural and developmental psychologist is the relationship between culture, so people and their social cultural context, and development. So I'm really interested in young peoples' experiences of migration, how that impacts on their everyday lives and particularly their transitions to adulthood. So what I'm going to talk about today, I suppose, is encompassed in all of that, through the lens of something called child language brokering.

So this is where, following migration to a new country, children and young people translate and interpret for family members, for peers, for the local community. And I've been very much interested in how that impacts on their everyday lives and experiences. Their social and emotional experiences, and so on.

So like all work, this is not just my individual work, it's a collective endeavour of all of these colleagues who I've worked with over many years while studying this topic. And now before I really get into the nitty-gritty of 'what is child language brokering?', 'why is it important?', 'how does it help us understand diverse childhoods?' I want to start with the story of Isabella, who was one of my participants in one of my studies.



When I first talked to Isabella she was 14 years old and was telling me about her role as a translator for her family. And I asked her whether she had ever encountered any tricky or difficult situations while language brokering, translating and interpreting for her family. She tells me the story of going to the doctors with her mother, who was ill. And they arrive at the doctor's surgery, and they're at the reception desk. And she says to me:

'One time it was a woman and I didn't know how to say that my mum was sick, she got a cold. And I didn't know what to say, what she needed. And the woman was saying, I don't know what she needs, so I can't tell you. She just told me to go away.'

So I asked Isabella, was this a doctor or a receptionist?

'A receptionist. I was like 'no. I need to tell you because my mum is sick, she needs something.' I don't like how some people don't have patience for ones who don't speak fluently.'

She told me. So I asked her and what did you do in that situation? did you say?

'I just asked the woman for other people that had time for me to express myself because I can't. It's also my fault that I couldn't speak English. I just asked for other people... Someone who had time and not like her, she just talked to me in a way that was disturbing...'

Now this quote is illustrative of quite a lot of what I want to talk to you today. Firstly, Isabella is having to navigate a new language. She's migrated with her mother and often when children learn the local language much more rapidly than their parents, they end up doing not just linguistic translation but also cultural mediation between this private world of the family and the public and institutional world of often authoritative figures who are in more powerful positions, let's say.

So Isabella is seeking something on behalf of the family member. She needs to help her mother, so she's advocating in what many would argue, and I think this is true, quite an adult-like situation. Part of the complexity is of course she's facing this hostile adult who doesn't appear to want to help her. But equally, I'm going to argue that this kind of activity, child language brokering, can be framed as a family care practice. She's trying to advocate on behalf of her mother, her mother needs something, and she's the one who is there, who's able to help. But it'll also speak to some of these audible racialised microaggressions that young people in our sample quite often faced when trying to translate and interpret for family members.

So, what I'm going to be focusing on in my presentation today is the dynamics of the family relationship in this arena of child language brokering. I want to critically discuss this notion, which I'll tell you about, that children are doing things that are too adult-like, that it's creating a role reversal, this notion of parentification. And I'm also going to introduce you to some psychological theories that have helped me understand my work - I'm going to introduce you to social cultural theory and critical developmental psychology to think through some of the main issues and debates that quite often sort of come up in this arena.

So, why focus on language brokering? Well, firstly, as I say, children are often cultural and linguistic brokers for family members when they arrive into the country and they're doing more than just transmitting linguistic knowledge, they're also transmitting cultural knowledge as well. The contentious bit for quite a few people comes into play because children can affect or change the message that's being spoken. So unlike professional interpreters, they are often agents. Some have described them as the right hand to the family, affecting this interaction between all the different key players.



They do it across all sorts of spaces and places; shops, you know retail, healthcare, social work, dentists, accident and emergency, lawyers' offices, housing offices, with landlords, everywhere and it comes in all sorts of different forms. Both in terms of oral translating and interpreting, reading medicine bottles, filling in forms, and so on, so there's a lot of complexity going on in that.

So as I say, I want to look at how this influences the family dynamic. How does it affect the child-parent relationship and the roles and responsibilities that they are placed under? So, I'm mostly, for this presentation, drawing on this study, which I did with Humera Iqbal. It was funded by the Arts and Humanities Research Council, and we used a variety of both qualitative social science and arts-based methods in order to explore young peoples' own experiences of child language brokering.

But what I want to draw your attention to is one of the methodologies that we used, which is qualitative vignette interviewing. So we presented the young people with four short stories. I'll let you read this one about Gabriela, which really is the one that sparked the most conversation amongst our participants. And then we would ask them questions about the character and then they would bring in their own real life scenarios as well.

So this one is about Gabriela, her father, and her need [to get] the heating fixed, it's broken in their flat. They have social housing, so they have to go to the housing office to get it sorted. The housing officer says the job's been booked in, he can't do anything else. Gabriela's father gets frustrated and tells Gabriella to call him a useless idiot, and from there the young people are asked to sort of say, what do you think about this situation and how would you handle it? I'm going to come back to that later on in the presentation when I get to the data.

So, as I mentioned, I'm keen to focus on the debates about language brokering and how it influences the family dynamics. Now, the literature is mixed on this. On the one hand, there's a range of literature that says that language brokering brings children and parents closer together; it helps the family bond, especially in the face of positive family dynamics and praise, and so on. And then there's a tranche of literature that says it brings in more tensions, has a negative effect on the family relationship, and is associated with stress and burden and anxiety. So it's a mixed picture.

And one of the major concerns is with this notion of role reversal. The idea that because children and young people doing this adult-like activity, it destabilises the family dynamic and the hierarchy is upset because children and young people have too much power. They're able to affect the conversation too much. They're perceived as too adult-like. And that parents become over emotionally and practically reliant on them, sometimes known as parentifications. That's one perspective.

The challenge to that perspective, and I think I would put myself in this camp, is that actually in the context of migration, child language brokering is really considered by those who undertake it as a normal practice, just a part of their everyday life and a part of the life that happens when you move to a new country, and have to learn a whole new set of skills.

Marjorie Orellana, for example, would say that actually these young people, with their families, work as a performance team, and that anyone migrating, often within the family you have a redistribution of the roles and responsibilities. And that actually the pitching in to family activities is very similar to undertaking domestic chores. It's no different from being asked to empty the dishwasher or do any of these other things.



However, it's worth considering that none of these debates, of course, exist in a vacuum. Just going back to Stephen's introduction about you know wider experience and nationhood. You know, these kinds of family dynamics take place within a wider social and cultural context. But what might that mean for our language brokers?

Well, let's consider for example, that language brokering is quite a complex, nuanced social and cultural activity. Yes, in potentially quite difficult situations and settings, as we've seen for Isabella. But actually, you could argue that it isn't language brokering per se that that's the problem, but rather the social, cultural, and political histories that lead children to be the ones to do this task. Since 2010, when there were new austerity measures introduced, there's been major cuts to public services like professional translating and interpreting services. Arguably, things like the Brexit referendum, to leave the EU, people have argued has led to a rise in anti immigrant sentiment in the wider social cultural milieu - sometimes known as the hostile immigration environment.

And, for language brokers who were there in the public world, like in an accident and emergency room or in a bank, they are very audibly visible. So it's quite a niche research area, and yet it actually is a task that's undertaken all the time in that kind of weird way, in a very public way. And some have argued that actually a lot of those conversations take place with an authority figure in very monolingual, white public spaces. Where the other adult has a lot of authority over the family and the child doing the language brokering. And that kind of tension can enhance tensions within the family as well.

So, how might some of the psychological theories that are available to us help us make sense of these experiences that these children, young people, and their families are having following migration where there are understandable concerns for the kinds of activities that young people are doing?

Well, I turn to two theories. One is sociocultural theory, which suggests that these kinds of practises like language brokering are routine everyday practises that are shared by members of a particular community. They're like a cultural tool, just like any language. I also draw on critical developmental psychology, which argues that, actually, our views of children, our notion of childhood itself is socially constructed and subject to change across history and across different social and cultural contexts. So, psychology, and you'll probably recognise this from this transitional developmental picture here, a really common developmental picture...Psychology has really promoted this notion that children go through a set of normative stages of growth, that they reach a kind of end transition point, wherein 18 years of age is arbitrary age - they've become fully fully grown. So you have to reach these certain milestones.

The question is, what if you're a child who transgresses some of these developmental milestones? And arguably language brokers do, because they sort of make us feel like they're doing these adult-like roles as the parentification notion suggests. So, critical developmental mental psychology suggests that actually childhood is bound up with these assumptions about school and play and socialisation, but that not all childhoods share that, and in fact we've come to accept this developmental model so much, it's deeply embedded in our consciousness.

Equally, we can really think of child language brokering as very nuanced, influenced by a whole set of different factors where it takes place, the relational influences, who is involved, the cultural setting - what are the norms of that setting? What is the type of task? Is the language complex? And what are the goals of all of those taking place? Taking part in that?



So where does that leave us then? For child language brokering and family care? So there is concern that this child language brokering does transgress normative developmental models that are said to perhaps rob children of their appropriate childhood. And yet, as I say, we can also think about what children do as part of a care continuum, part of the care that they just provide [for] their family.

Caring for others, as well as being cared for by others, is complex. It's not simple. It does involve a lot of emotional labour and entanglements and, you know, quite often we do see the care that children provide others in quite narrow form in psychology we think of adults taking care of children but not really the other way around, and that's what leaves us feeling a little bit discomfited, understandably.

I'm now going to turn to some of my data from the study that I showed you at the beginning that I did with Humera Iqbal. It's the language brokering across different spaces and places. And I'm going to draw an excerpt from the data that are illustrative of some of these ideas that I've been talking about and mentioning.

So we interviewed young people who are regular language brokers. They undertook the activity every day, sorry, every week. They were between 13 and 16 years old. And I mentioned the vignette of Gabriela at the beginning. So they were given this in other vignettes and asked to comment. And I'm going to talk about 3 areas of interest. The emotional and affective side, for them, of language brokering. The role of context and why that's important. And who managed who and how, and what the young people had to say about that.

So let me turn to the emotions first. There is no doubt that emotions and affective elements run strongly through what child language brokers tell us that they do, but they stressed quite a lot that this was by no means all a problem with parents as the parentification debate might suggest. Often, it's part, like Isabella with the difficult receptionist, of this tri-part relationship between the other adults as well. And young people expressed everything from pride to annoyance at giving their personal time and effort. But what they often said was that they felt a deep sense of empathy with their family members who couldn't communicate, realising how frustrating, and in fact some of them use the word 'lonely', that it could be.

One thing that many of them in our sample talked about though, was how important it was to stay calm in the face of hostile or different contextual situations. So I want to first give you a quote from Daria. So, Daria was asked to comment on what the housing officer might feel about Gabriela's father for getting angry. So I said: How do you think the housing officer feels about her dad?

'Probably they will feel he's an angry person, we can't do nothing with him. Because I know from me that if you're angry, and you're talking and you sound like that, they can't do nothing for you, they can't help you.'

He went on to say:

'You need to stay calm to talk with them, like you are now, because if you're angry you can't do nothing anymore...'

So sometimes you feel inside? I said

'Yeah, that it's too much. Yeah, but it's OK, I will be calm and then I can translate.'



Now, Daria was not the only respondent in our sample to engage in what I called this sort of emotional labour by ensuring that all parties in the situation were staying calm. But he also recognises that he needs to do this if he really wants to get what he needs for his family. So he's using it as a tactic for advocacy in order to achieve what he needs.

Equally though, this quote from Eztera next, shows how extremely difficult that can be in the face of a hostile other person. It's not always possible even for these young people to stay calm. Eztera, in this next discussion, is describing how she's trying to set up a phone contract for her mother, over the phone. She says she starts by being exceptionally polite, but recognising the lack of support from the other person on the end of the phone changes her tone:

'I mean at the beginning I was really, really nice to him. I've never seen myself being that kind of nice to anyone. I was extremely nice to him and he was just like ignoring me as much as he could. It was annoying so I started to kind of ignore him to just you know short sentences and stuff like this.'

I think it's quite remarkable what she does here, so she's also, you know, 14 years old, 15 years old. And she starts by being polite, as young people are taught to be with adults, especially in positions of authority. But as she realises that she's not getting a nice response back, she begins almost to mimic the conversational style of the adult. She takes, I think, quite an adult-like shift - using short sentences in order to try and redress, I would argue, the power imbalance that is caused perhaps by her age status, perhaps by her immigration status, or in fact I think an interaction of the two.

Now, I mentioned earlier on that context really matters, which is a slightly, I suppose, a silly thing to say. It's sort of obvious. But I think often psychology can ignore the importance of socio-political and economic situations in the wider world. And yet for language brokering, it really is sort of centre and front in terms of the dynamics of the interaction between the parent, the child, and this authoritative other.

Because, quite a few of our respondents talked about some of the both audible and racialised microaggressions that they faced while language brokering in public spaces. So I bring in Janine here, who is responding to a vignette story of Amrit who goes into the supermarket, doesn't have the English word for what his mother needs and the shop person is rude to him.

Janina says:

'Yeah they tried to get rid of me because when I tried to describe, I describe it very detailed things, so it's hard for them to understand.'

How do they treat you in this situation? I asked.

'They look at me like I just fell from the moon. And like I'm speaking an alien language and it's really awkward for me. And then my mother starts applying the pressure like 'what did you say?' 'What did you do? Tell me tell, me.'

These words - feeling alien, feeling like you fell from the moon. Her mother's interjection, you know, is probably sensing her unease, but in fact quite a few of our respondents said they found it really difficult if their parents interrupted them, and sometimes they would pre-arrange situations so that didn't happen.

And I just want to give this example from Rabiadou, because here she begins to tell the story of how her laptop was stolen. So, her and her mother go to the police station to try and report it missing. She says:



'I went once with my Mum because my laptop got stolen and I went there and they were like 'Oh'. I think it had something to do with race. They were like 'Oh'. Because it was a brand-new laptop that just came out. It was one of them and it got stolen and even went with the receipt.

And they were like 'Oh no', that they didn't care. They said they don't care and that it's probably not even my laptop that I probably stole it, the box and the thing.'

And I said, and did you tell your mum what they said?

'Yes.'

And what did she say?

'She said, she actually cursed them out and called them racist bastards and stuff like that and then she left.'

So you can see here, although it's a really difficult situation, her mother and her are actually working together, even in a contentious and difficult scenario.

I'm now going to turn to my last kind of code of data, as it were, where these young people talked about how they manage certain situations and who they managed, you know in this tri-part communication situation. Because these conversations, as you can see here, did sometimes become contentious with power differentials, age differentials, immigration status hierarchies all at play. But, on the whole, our respondents felt that their parents had ultimate responsibility in terms of who makes decisions.

Vasil, you will see now, put ultimate trust in his father, when unlike Gabriela, he went ahead and got their fridge fixed even though they were meant to wait for the housing local authority to bring someone out for them. And Vasil said:

'My dad told me to translate to him that he's not right in this situation, my dad is right because we can't stay without a fridge.'

So, you know, Vasil was one of one of the respondents, not the only one, but he was one of the respondents that fell firmly on believing that his father had ultimate authority. And now I turn to one last quote before I end my presentation. The young people draw on a range of strategies to help manage these emotional entanglements, these contextual complexities and these challenging situations that their families faced following migration to a new country. In this next quote, Kokumo defuses quite a difficult situation with humour. Depending on your perspective, you'll see whether you feel that that works out well for her or not. But her father is facing the same problem with the heating, [so] he asks her to call the gas people:

'Basically, we had the same problem with heaters...'

As Gabriella [did] in the vignettes, she's saying.

'...but my mum was at work and my father was at home. And my father called the gas people...and the woman was talking so fast, very fast. And we reached there [to the phone together] and I start talking. My father say 'Oh, she is stupid. We are saying we feel very cold in this house and she's saying you need to call your landlord. My father was so pissed off



that he started insulting her in Igbo. And I was there laughing. The woman talked like if you were insulted and she cut the phone. And I was in this situation like 'what can I do?' Yeah my father started getting angry with me because I was laughing at the phone but what can I do?'

[Kokumo said to her father] 'You were insulting her in Igbo.' It was funny because I was talking to her in English and my father was insulting her in Igbo. After I called back again, another one, a man this time, and then finished.'

So, you know they have a serious problem that they need to get fixed. They're cold, they have no heating. But Kokumo's caught between these two dilemmas; her father being rude on the one hand, this woman not being very nice to her on the other. And her laughter, I think, both ignites and defuses the situation. It ignites it in the sense that the person puts the phone down on them, but equally, it resets the whole situation so she can get it dealt with with a different person and a less stressful phone call.

So just to conclude, in my rapid delivery of this presentation, what I wanted to show to you is that I think it's important that we do not see children and young people as just passive recipients of care, you know, adults give the care and children take the care on. But actually children, especially if we're looking in the context of migration, but in lots of other contexts too, play a part in the contribution to family strategies and dynamics. Care is multidimensional, it's complex, But yes, when seen through the lens of this critical developmental psychology, where I was showing you, you know, this very well known formula of developmental stages, it does seem that it's an activity that transgresses some of our expectations about what young people should do, how they should do it. And how that's seen as part of the interdependent script of young people providing care, which Lisa Dornier argues, actually, we could rather see this as an apprenticeship to adulthood rather than a transgression of what young people should do. So I hope you have enjoyed the talk and thank you so much for listening.

Stephen Robinson: Thank you so much Sarah. That was really, really interesting and we have the chat box open for some questions at the minute. I have one, if that's OK, just to start us off and I'm sure others will as well. You mentioned the issue of power and power imbalance a few times during your talk, and that seems to be something that you've identified as being particularly crucial. And I guess I was thinking about how the factor, you know, race seemed to be a key factor there. And so I was thinking about, you know, intersectionality and what were these different factors that were sort of colliding to produce this situation? So race seemed to me to be a key factor, but I was also thinking about age and the fact that it's a young person. So age and race, you know, seemed to be coming together to a very significant extent. I was wondering about gender as well? I wondered if in your research you noticed any differences between the reactions to boys and girls?

Professor Sarah Crafter: Yeah, so I think yeah, I think that's really important. I think there is an intersection of these different facets - race being one of them, ethnicity being another, age status being another, and of course immigration status being another one. Because you know the kind of activities that you have to do also depend on your immigration status, and there's horrible examples, for example, of young people having to tell their own parents they're being deported out of the country, for example. So, immigration status is also a factor in that.

Gender's an interesting one, because that's quite...I haven't explored gender per say, but in the wider literature it's interesting, a mixed picture. So, stereotypically, it's the eldest girl of the family who takes on a lot of the translating and interpreting responsibilities. Other literature found there's been no gender differences, but I think what's more interesting about



more recent research is actually showing how the language brokering alters over time, and I mean in the full lifetime of the language broker, right into adulthood.

Because in fact, what often happens in some families is they negotiate roles that might change as some siblings leave the family home and go on [to] do other things. Also, some of our young respondents divided things up - so if their mum needed to go to the doctors about women's problems, the sister would go. Not always. Sometimes that wasn't a choice, but you know, sometimes they negotiated that if there were more than one sibling. So I think gender is an issue to some extent, but I think there's more to explore in terms of how that changes over time.

Stephen Robinson: Thank you. I'm looking in the chat box there as well, one person has just typed in there that this reminded her so much of her own experience. So it's really interesting to note that as well and various people thanking you there for your presentation as well, which I agree has been really interesting. Can I ask you just one other quick thing? I don't think we've got other questions coming through. So I'm just going to ask another one because I can.

So I just wondered, I know a bit about your research. I'm kind of mindful of the students that we have here as well today. And I wondered if you could just say something quickly about, and it may not be easy to answer this quickly, but your methodology is qualitative in nature and I was wondering whether you felt that that was a key to this particular type of research study?

Professor Sarah Crafter: I think they do different jobs, so there has been quantitative work done in this area, which has been very valuable, but it's actually quite old now, it looks at this sort of breakdown of who, what, where, how, when kind of approach. And I've also used a mixed methodology of a survey followed up by qualitative methods. And then I've done studies that are just social science, qualitative plus arts-based methodology as well to explore in different depths. It's interesting. Quantitatively, it's quite difficult to collect data in this area because, and and I think some of the chat is maybe showing this. A lot of people undertake this activity but don't know why you're asking about it. They simply don't feel it's very important or it's just such a part of their everyday life. It doesn't occur to them that, you know, that they answer a questionnaire on it. So when we've tried to do surveys around activity, it's actually been really hard to collect larger amounts of data. But I wish we could do that because that data is not really very available.

What qualitative work does, is of course, to explore these young people's experiences in more depth. That allows me to drill down a little bit more deeply into the nuances and the complexities and the meanings that those young people associate with their everyday activities. And the vignettes are particularly useful because the story stimulates in them different recollections which sometimes if you just ask them outright, don't spring to mind for them. So that as a methodology has been particularly useful for young people who maybe struggle to answer very direct questions and that you might have in a standard semi structured interview.

Stephen Robinson: Great. Sarah, thank you again. That was a really, really interesting talk and I know I really enjoyed it and I'm sure others really benefited from it as well. So thank you again for joining us today.

Professor Sarah Crafter: Thank you very much.

Stephen Robinson: So onto our next speaker, who is Dr Joshua Payne. Josh is a lecturer in cognitive psychology at Wrexham Glyndŵr University, and he's also the chair of the Welsh



branch of the British Psychological Society. It's great to have you with us Josh, and Josh is going to talk to us about his research with Parkinson's disease, including some next steps for online interventions in a post COVID-19 landscape. I'll let Josh tell you some more. Thank you.

Dr Joshua Payne: OK. So I'm going to present on some early kind of pilot work on non-pharmacological interventions for Parkinson's disease. So moving away from the traditional kind of drug based treatments and looking at kind of novel applications of cognitive neuroscience to target areas of the brain affected by the loss of dopamine in Parkinson's disease and look at kind of where we're going now that we've been forced online with COVID with these sorts of interventions, which is not necessarily a bad thing in this day and age.

So Parkinson's disease affects about 145,000 people in the UK, it's about 1 in 37 people we diagnose each year. Most of these cases, the vast majority of these cases, occur in people over the age of 50. With, you know, about 1 to 2% of cases characterised as early onset Parkinson's disease, with the prevalence primarily slightly higher in men of 1.4 to 1. It's a neurodegenerative condition and it's characterised by a loss of dopamine that results in a rigidity and trembling of the muscles, increased tone, a reduced arm swing, a tremor at rest and often associated with the shuffling gait, and then in the later stages, difficulties in terms of posture and maintaining postural stability. So, if you pull back on somebody with later stage Parkinson's disease on their shoulders, they tend not to be able to right themselves, so that's what we mean by postural stability in that case.

So Parkinson's disease is caused by a loss of cells in an area of the sub-brain called the substantia-nigra, and this area is responsible for generating dopamine and that loss of dopamine results in disruptive messaging within the basal ganglia and those connected cortical structures that control movement and motor-neurons within the brain.

Traditionally, we've treated Parkinson's disease with long-term dopamine therapies, so these are very effective at replacing some of that dopamine at reducing the symptoms in most people with Parkinson's disease. But as that dose increases, as your symptoms get worse, it starts to lead to those limiting side effects, particularly at those higher doses. So, Levodopa, which used to be used by itself, results in quite severe nausea and is now combined with what's called Carbidopa. That reduces the nausea. and has an antiemetic effect, but other aspects in terms of increasing the frequency of that tremor, increasing the severity of that tremor, once you get to those higher doses becomes a problem in terms of quality of life, in terms of people's ability to cope with those side effects associated with Parkinson's disease. And so eventually, those medications have to be stopped, or they're left at that top level of treatment. And so obviously there's some implications there for trying to reduce the dependency, or at least reduce the speed at which we increase dosages of medication for individuals' Parkinson's disease to try and improve quality of life for a longer period of time and stave off that kind of decrement in motor performance and increase in fatigue that's associated with Parkinson's as it develops.

And the use of deep brain stimulation for Parkinson's disease is becoming more and more common. But these invasive technologies have a lot of contraindications. There are very few people that can access these treatments, and so it's not going to be a treatment for everybody in the long term. So, we need to be looking for things that we can apply as an adjunct to traditional therapy to try and reduce and maintain people's ability for longer.

So the aim of trying to utilise targeted non-pharmacological interventions, is to use what we know about functional brain anatomy from basic research in psychology and cognitive neuroscience, to try and avoid these invasive and expensive interventions in order to



improve or maintain the motor function and decrease fatigue levels when we're doing these motor movements of people with Parkinson's disease, so that we can reduce the need to increase dosages quite as early, reduce the reliance on medication. It's a working hypothesis. We don't know really at the moment whether this is going to work. It's a double hypothesis based on some of the work that Charles Leek and colleagues have done over the period of the last 10-15 years or so.

So in Parkinson's disease, the basal ganglia is primarily implicated, so the substantia-nigra, this area in grey here, we start to see a loss of dopamine - which results in less dopamine in the striatum and decreased activity. That feeds in. We get increased inhibition in globus pallidus, and then we start to see problems in information being passed towards the brainstem, increased inhibition of the thalamus and then less signal getting through to cortical regions, in some cases, and sometimes we get not enough inhibition, sometimes we get too much inhibition and this can lead to different problems in most symptoms. So the increased activity leads to this tremor, uncontrolled kind of gating reflex. But, in other aspects, are affecting the premotor and prefrontal cortex.

We also start to see a decrease in cognitive function over time, and sometimes with Parkinson's disease those systems are preceded by that decline in cognitive function. So you get, in later stages quite often, what's called Parkinsonian dementia, so we get characteristics, dementia associated with Parkinson's as well. So if we can reduce the severity of this over time and try to regulate this system with cognitive or with non-drug based treatments, then we might be able to improve the outlook for individuals with Parkinson's disease as it progresses.

So the area that we're going to focus on is the supplementary motor area. Now, traditionally this area is associated with planning, preparation and online control of movement, but it's also been implicated in postural stability and also in motor learning. Two areas that we know are impaired in Parkinson's disease as the disease progresses, so this area in yellow is the lateral surface. This is the primary motor cortex, and this is the medial supplementary motor area at the top here, just on the inside of the brain. And what we see in Parkinson's disease when we look at fMRI studies, is that we get reduced activation in Parkinson's disease. It's associated with postural instability, with poor motor learning performance, with poorer movement sequence learning as well. And this is due to disruptive signalling throughout the motor network that over time with the loss of dopamine, results in the loss of cells in the supplementary motor area. So we end up with increased problems in cognitive areas associated with this region, as well as those motor systems.

And recent work suggests there's subdivisions of the motor area that we might be able to target, that aren't just involved in this planning and preparation online control, but that might be involved in more abstract processes. So this paper, I'm not going into too much detail into what they did here, but this paper shows the different subdivisions. And the take-home here is really that we think the pre-SMA, this area in yellow, that's got a more direct connection with the middle parts of the basal ganglia, with the putamen and aspects of the frontal striatum - that might be associated more with abstract processes that we can perhaps target using these cognitive tasks, to try and improve that downstream effect on the motor symptoms that we see in Parkinson's disease.

So, a classical task we use is what's called mental rotation. So you see figures like this on the screen, presented in two, and you have to essentially say whether these figures are the same or different. So you'll have them presented in the same orientation, [and] at 60 degrees here. They're clearly the same objects, but they're at different angles, and then at 120 degrees, which is slightly more difficult. And the classical effect we see in terms of response time is this increasing kind of linear function, where the more disparity there is



between stimulus A and stimulus B, the longer it takes you to actually make a decision about whether they're the same or not. There's a lot of processes that go on in terms of managing that mental rotation in terms of mapping one stimulus onto another. And this is going to form the functional basis of the treatments that we're proposing within this study.

Some early work from Johnson, Leek and colleagues identified this area in the pre-SMA, this pre-supplementary motor area, that is activated specifically to orientation dependence stimuli. So you have two sets of stimuli here, that are presented in a modified recognition paradigm. So set A have objects that share visual features that are very similar, that are very difficult to distinguish in our orientation dependent. Whereas you've got set B that have similar features, but they're all obviously different to one another, so these are orientation independent stimuli.

And what you see is when you make the contrast between the upright and then rotated stimuli, is that you see this increased activation in the pre-SMA as well as the fusiform gyrus and the parietal lobe. And these are just indexing visual processing and spatial orientation, respectively. But this key area, this key activation for these stimulus orientation objects tells us that the pre-SMA is doing more than just planning movement. It's tracking the relative space, the relative orientation of those objects in space, as part of a broader network within the frontal lobe, the superior parietal lobe and the fusiform gyrus.

And so we can think of this in the similar sort of way [that] we do [when] making a vector transformation or planning our movements to pick up a cup of coffee. So your hand is in one area in 3, - 5, and you've got a cup of coffee that you're trying to reach forward for here. So the idea is we make this transformation. We map on the relative position during movement planning to create those vectors, and we calculate the angle that we need, and we map that through continuous monitoring. We're signalling to the cerebellum and through that basal ganglia network and through the parietal system utilising pre-SMA. The same idea here for the tracking elements of these stimuli for mental rotation is in play here, so there's slight differences in terms of the orientation of these objects. We find that peak key point, we map the vectors, and then we can use one to make a transformation into the other. And so we can take this analogy in terms of movement planning and visual mental rotation, as relying on the same sort of network and this idea of spatial remapping.

And so the first stage really in this early aspect of the research was looking at whether we can generalise this idea of the spatial vector transformation to other tasks that involve visual spatial tasks. Not just these classical visual rotation tasks, but also into other tasks that involve visual transformation. And this forms the basis of the task that we focused on in our recent pilot work. So I'm just going to give you a demonstration of this visual transformation task, which is now what we've called the grid navigation task because of the purpose of the task, the focus of the treatment.

So a participant will see this grid on the screen with 9 squares and at the beginning they'll have the start grid highlighted in red. And there will be a sequence of arrows and hash marks. And every arrow you have to imagine that this grid is moving in that direction by one grid and keep track of that movement across the grid, until you get to the final stimulus where you have to make a same or different decision about that final position. And so this would move to the right. There's no movement there. It would move down. There's no movement there. It would move to the right, and then you are asked 'same or different', and this would be a 'same' response in this setting, if you've been able to track that properly. So it involves vector transformation, it involves keeping track of that object in memory, in spatial memory, and in a kind of virtual imaginary space. And it's quite challenging, actually more so for the longer sequences, where there's a delay between your relative position, it's very easy to get distracted on this task, so it's quite challenging.



And so the first step, we did this in a scanner, well Charles did with Johnson again, in the scanner and they showed this similar persistent activation of pre-SME, this visual transformation task, as with those classical mental rotations. So we know this is activating similar sorts of networks and is activating the pre-SMA in a way that we need in order to advance this hypothesis. So then we take this grid navigation and we show the shared reliance on spatial transformation.

So the implications for Parkinson's disease here are that, well, we know that Parkinson's disease is associated with cognitive impairment, and we know about the reduced activation of the pre-SMA in PD, as well as these other motor symptoms. So we can ask questions like what can we learn about the pre-SMA from Parkinson's disease and on the flip side, can we then use that knowledge to improve motor function and fatigue in people with Parkinson's disease by reverse engineering those mechanisms around that shared network and those shared regions, and that's what we're trying to do.

So we know from the classical literature that people with Parkinson's disease show visual spatial processing deficits. They're impaired in motor learning, they're impaired in making decisions about stimulus orientation - those classical mental rotation tasks. So here you've got a control group that shows this typical slope, where there is an increase in response time over angular disparity. So they start around 680 milliseconds, on average, and up to around 740 milliseconds here for 120 degrees. There's a substantial overall main effect here, where people with Parkinson's disease just start overall worse, but that slope, that change, is significantly larger in comparison to that control group. So there's increased impairment over that angular disparity. If you look at the size of regression slopes here, it's almost twice the size as that control group.

So we know that visual facial processing is impaired in Parkinson's disease owing to this disruption of the signalling in the pre-SMA. And if we look at the sequential vector transformation in that grid navigation task, we also see that there those people with Parkinson's disease accuracy on the left, response time on the right, and Parkinson's patients are in grey, this light grey colour here, versus controls. Accuracy is impaired across all of those sequence lengths, particularly for those shorter sequences, but not by much, and especially in response times for making decisions and keeping track of that, once you get to this correct or incorrect finishing location across those sequence lengths. So as well as classical mental rotation, they're also impaired in this grid navigation task.

And as with any sort of treatment, we need some sensible control tasks. So we have a non-transformational task which uses memory spatial locations. And I feel sorry for anybody that ends up in this condition because it's not the most engaging, the most exciting of tasks. You're shown a grid, you sit there for five seconds and wait for these hash marks to come across and you have to remember whether it's in the same or different location. It's very easy to get distracted, as it's very easy. The other task, which actually is right at the other end of the spectrum, depending on how good you are with mental arithmetic. And I hate this task, I'm awful at it. You start with a number, rather than a square in that grid, and you have to do serial number subtraction over the course of this task and track whether that's the correct or incorrect answer. This is hard, it's quite difficult, but actually serves as a nice active control task, because subtraction also activates a mental rotation and mental transformation in the brain and activates pre-SMA.

So if it's something to do with the spatial aspect, then we should see better improvement or more improvement for people with Parkinson's disease when they do grid navigation versus serial subtraction. And we shouldn't really see any change, we may see a decrement due to fatigue and boredom during the spatial memory tasks. And so we don't see any real change



in people with Parkinson's disease compared to controls from spatial memory, in response times or inaccuracy. We do see some slight changes in response times for PDs versus controls, but not anything to write home about here. So we're still a good active control task. Not really different to controls.

But what we do see, utilising this kind of functional targeting hypothesis, using this novel hypothesis driven approach, utilising this task to target pre-SMA, is... actually I've jumped a few slides here. But what I want to show you is this data, because I'm conscious I want to get to a Q&A as well and have time for questions.

What do we see when we introduce people with this paradigm as an intervention? We see, following the intervention with 20 minutes of training on this visual spatial grid navigation task, is [that] we get significant improvements for those people with Parkinson's disease in terms of onsets of the time, from release of a button, to actually making a movement in space to three objects that they need to point at and so we've got this behavioural evidence using this grid here, so these lights. These rods light up and at the beginning of a trial you press this button and you have to make a movement to the rod that's lit up and you get an onset time. So the time to release that button and also a time to make that movement and as two primary outcome measures.

In Parkinson's disease, following 20 minutes of that intervention, we see substantial improvements in terms of onset time and also in terms of time to complete that action, relative to the control of the sequence memory task. Whereas our control participants don't really show much of a difference at all following that training. So we might be onto something, but this is a very early behavioural pilot with 16 participants with Parkinson's disease in a lab based setting that may or may not have implications over time.

And we adapted this, and we published a study protocol for a home-based, computer-based intervention where we transferred that analogue light board into a touchscreen laptop. So I went around and we recruited patients from movement disorders clinics and I visited them at home 5 times over a period of two weeks. I took a laptop and some touch screen gloves that we use for finger tapping and this digital version of this reaching task to try and capture this data. We had three groups participants, one then doing grid navigation, one of them doing sequential subtraction and one of them doing spatial memory.

And really, what I wanted to know was whether this was doable in that setting, whether it's feasible or not. And actually, it was very difficult to do. It's a little bit impractical in terms of scheduling and recruiting people. It's very time consuming. It's quite disruptive for individuals because I'm in your house with all of this equipment on your dining room kitchen table and our equipment broke a lot because we wired up some touchscreen gloves to a mouse and we did this on a shoestring, trying to do these things. And it's highly variable. People with Parkinson's disease progress with the disease at different rates and performance in this test was highly variable. So these face to face in-home settings are probably not practicable in the long run, and certainly not feasible as an intervention in the long run to try and track how we're going on here.

So with COVID-19 we've been forced online. Which actually is a good thing, it's allowed us to think pragmatically about how we're going to look at these data in a pilot RCT. Taking that physical at-home based treatment and converting it online in a way that means we can reach many more people with Parkinson's disease who a) maybe didn't want us in their house in the first place, or who couldn't travel to clinics to be able to actually make use of that treatment. It allows us to look at reliable assessment of those intervention effects, and we can get a realistic picture of how people might integrate this into their day-to-day, which is important I think. Many RCTs are a little bit inflexible, it makes it difficult to determine how



effective these things are going to be in reality, if we're asking people to actually engage with them at home by themselves.

So we're looking at the moment, and we're at the very early stage, we're about to start testing with this online protocol using Gorilla in collaboration with the Walton Centre. So hopefully in a year's time or so, we'll have some data, or we'll get an idea of whether this is actually feasible and whether we're seeing any improvements in motor symptoms and fatigue in Parkinson's disease. And just thank you to all the collaborators that have been involved in this project at different points. That's it from me and I think we've probably just got about 5 minutes for some questions.

Stephen Robinson: Thank you Josh. A really interesting talk and a real contrast in focus and topic and methodology from what Sarah was talking about. So again, it's nice to see the diversity within the discipline. There's a couple of questions that have come in here. So one from Nick: Given that women are generally considered to be poor at mental rotation tasks, is this exercise as effective for them?

Dr Joshua Payne: To be honest, as far as I'm aware we've not had - we've not really focused on any sort of gender comparisons or sex differences. I would imagine the sex difference effects tend to be relatively small in a lot of cases with this literature, and I mean you have to be careful about methodological rigour in a lot of that early work around spatial rotation, spatial mapping in terms of those sex differences in these tasks. I think that the networks are essentially the same. There's nothing fundamentally different about how men and women actually perform these tasks. And there's this whole conversation to be had about the the social aspects of play and how you develop these networks in children and whether that contributes to those kind of observed sex differences.

But I don't think you'd expect sex differences to interact necessarily with this treatment in people with Parkinson's disease, at least not from the impression that I got with the early stage treatments with these sort things. And how Parkinson's tend to present in men and women is very similar.

Stephen Robinson: Great, and one other very quick question, we've just about 2 minutes left. So will this research be relevant, do you think, for other conditions, someone has asked, such as Huntington's?

Dr Joshua Payne: So there's actually a Huntington's trial in a very similar vein going on out of Cardiff University that's in a slightly later stage than this, although I've not seen an update for that data for a while. There is a protocol paper published in the BMC Journal, I can hunt out and link to if people are interested. But it's certainly possible, although the mechanisms for Huntington's disease are quite different to Parkinson's disease, but it's possible there might be something there. It's certainly an area that people are moving towards. This idea of functional targeting of cognitive training, rather than the pseudoscience kind of brain training that proposes kind of general benefits by just, you know, playing with some tasks. That doesn't tend to be that effective. You need that hypothesis driven, theory driven, network based approach to approach even remotely kind of modifying these networks over a longer period of time. And so that's what's going to be important as we kind of move into this phase of non-pharmacological treatments in these sorts of disorders.

Stephen Robinson: Great, sounds really exciting Josh, and I'm sure it will have a great future. Thank you so much for joining us and for presenting today. I really appreciate it.

Dr Joshua Payne: Thank you.



Stephen Robinson: OK, so next up we have Dr Manon Jones who is a senior lecturer in the School of Health and Behavioural Sciences at Bangor University, and she's also the director of the Miles Dyslexia Centre. Manon is joining us to talk about research from the Remote Instruction of Language and Literacy, the RILL project. Thank you very much Manon.

Dr Manon Jones: Thank you very much. I am just going to have that awkward moment of trying to share my screen, just a second....OK. And then we'll put it into presenter view. OK, and I'll move everybody to the side...final thing. Right. OK, so thank you very much for inviting me to give this talk today. Yes, I am Manon Jones from Bangor University and I'm just going to present one quick slide on who I am and what our group does before I launch in. So, I lead the Reading Brain Lab in our school and it's basically dedicated to neuroscientific work on reading dyslexia and bilingualism. I'm a cognitive neuroscientist by training, but I also do applied work through my role in the Miles Dyslexia Centre. So the MDC has been established for over 50 years and it offers assessments and specialist teaching to children and adults who struggle with literacy. So we really try to integrate, research and practise as much as possible. And so basically I've chosen to speak about the RILL project today because it kind of spans the scientific and the practical elements of what we do. So it's got a foot in both, and that's going to be the focus of my talk.

So as we are very much aware, in March 2020 we were put into this national and the first national lockdown, and we knew that schools would obviously close, and they'd be doing their very best to teach children remotely, but it was a very unsettling period for everyone. And many of them didn't really have the infrastructure to accomplish remote teaching quickly and indeed it did take a number of months and that there were other factors to consider, like children's wellbeing, parents' wellbeing, and so forth. So schools basically didn't have the training capacity necessary to implement anything very quickly, and we also discovered by speaking to our teachers that their approach was very varied.

So with this in mind, we were concerned about the effect that the first and future lockdowns would have on children's language and literacy skills. And this, of course, is particularly salient for children who struggle with reading and literacy, so children with developmental dyslexia. So we developed a programme called Remote Instruction of Language and Literacy or RILL, and the purpose of it was to bridge language and literacy learning during the pandemic. So, the original aim of the programme was to maintain and improve key literacy skills during the pandemic and to kind of ensure that children were ready to continue learning when they got back into the classroom.

So we focused our efforts on key stage two, so these children are between 7 and 11 years old, so kind of [the] latter half of primary school. And they're at a critical period of literacy development because they kind of learned the foundational skills, but they really need to be in a stage of practising and really being exposed to a lot of written language to kind of consolidate and fully own those skills.

So as researchers and practitioners, we already know which skills are critical, foundation skills for reading and spelling because there's 30 or 40 years of research into that. So this odd looking diagram is called the reading rope, and it shows the strategic and automatic skills that children need to develop to become good readers. So they need to develop really good language comprehension skills, and that includes things like developing a really good consolidated vocabulary and overt knowledge about literacy. But those conscious skills need to be combined with word recognition skills, and so these are kind of automatic type skills that can only really get better with practice.

So there's a lot of research showing how to improve these sorts of skills in school and in the classroom where you have a teacher child interaction. But what we didn't really know when



we set ourselves this task was how best to teach these skills remotely. So when teaching remotely there are two commonly used instructional methods. One is called synchronous teaching, which basically, broadly defined, is where the teacher and child are present at the same time, so they're communicating over video and audio, and they kind of work together to complete a task. And it's roughly similar, it's not identical obviously, but it's roughly similar to what you do when you're working in the classroom, because there's an interactive element.

The alternative is asynchronous learning, and that's broadly defined as when the teacher will set the work to be completed by the child independently, and then the child receives feedback after they've done the work. So there's a clear economic advantage of having the asynchronous method, but we really don't know whether that's effective when you compare it to the more synchronous interactive components.

So I'm just going to show you a couple of videos to give you a better idea, because these terms are quite abstract if you're not used to them. So I'm going to show you an example first of all, of synchronous interaction between one of our specialist teachers, Ruth, who was doing the 'word of the day' exercise with one of the children. So she's using Microsoft Teams to project her image and talk to the child, Maisie, and she's sharing her screen at the same time, so they're looking at the same thing. OK, so let's have a look at a few minutes of this.

[VIDEO]

Teacher: So do you want to read the first word of the day?

Student: Displaying. The Peacock was displaying his feathers.

Teacher: Oh, beautiful reading! Our next word is....

Student: 'Strutterd.'

Teacher: Strutt-ED. See I like this video, what do you think of that one? So do you want to read the sentence below?

Student: The goats strutted down the street.

Teacher: Brilliant! So to strut means to walk in a stiff, proud, boastful way. Now I think those goats have got it nailed.

Student: Yeah, definitely.

Teacher: Would you like to strut around the room Maisie? You gonna go for it?

Student: OK.

Teacher: You ready for this? Go on then!

Dr Manon Jones: OK, we could watch that for half an hour, we haven't got time. OK, so you can see there's Ruth talking to a child at home, during the first lockdown period, in our pilot study. And you can see it's a very interactive teaching style where they're having fun, they're laughing, there's a lot of content there. And I'm going to contrast that now with the same sort of content, but in asynchronous method delivery.



[VIDEO]

Teacher: This is my sentence using the word gigantic: The earth digger was gigantic. If something is gigantic, it means that it is huge or enormous. It's really big. Look at this picture. And try and think of a sentence using the word gigantic.

Dr Manon Jones: So you can see in the asynchronous version there's the same concept again, but the child sees a pre-recorded video of Ruth describing the word.

All right, so now we have to go to the science bit. So we developed this RILL programme then to deliver the same content, but it could be used synchronously or asynchronously and I'm just showing you those examples. So with this in mind, we asked ourselves two questions. The first main question was does the real programme provide any added benefits to language and literacy skills beyond what children were already receiving from their schools? And the second was where the synchronous and asynchronous delivery were equally effective, and if not, which method was the most effective?

So to address these questions, we assigned children to three groups, so these children were recruited from across the UK - many of them came from the south of England, actually. And in our final sample we had about 230 that were split into these groups, so groups A, B and C. All children received tests of language and literacy skills at three time points. So at time one, which was before the programme, at time 2, which is the midway point at about four weeks and at time 3, which was the end of the programme at 8 weeks.

So children in Group A received synchronous teaching for the first four weeks or eight lessons, and that was followed by asynchronous teaching then for the remaining period. And then Group B had the opposite, so they had asynchronous teaching first, followed by synchronous teaching, and then of course we had a weightless control. So the weightless control children also received the programme, but it was after the first two groups so that we could compare the increase in skills for the RILL group compared to children who did not receive the RILL group. Sorry, the RILL training.

OK, so here's a quick visual of a single RILL lesson, which follows the same structure every time. And the rationale for that is that the child recognises the rhythm and it brings a certain familiarity and confidence as the course progresses. So the skills that we're developing are in grey and the corresponding activity and associated time course is in green. So the first thing that happens in this synchronous lesson is that the child and teacher have a good chat, and they open the session. They recap the previous lesson and the emphasis is on positive feedback and discussion throughout. So the lesson begins with words of the day, two words of the day, and those words are then embedded in a story format in what's called the passage of the day where the child basically reads out loud to the teacher.

The teacher and child then do some word games to build on what's called phonological or word sound skills before they do a spelling exercise. And then the session ends with the child working on their own individual story, which is really popular, actually, where they build the narrative and they turn it into a story, an audiobook, right at the end of the programme. And then they finally revisit the words of the day to really consolidate that vocabulary learning, and they have a quick chat with the teacher to close the session.

So I'm going to give you a quick example of the 'word of the day' activity. We saw it with Ruth. We made a lot of use of things like GIFs and other kind of IT features, basically, to enhance the engagement element so that the children were really kind of excited and keen to continue instead of with just static images. And also on Microsoft Teams, it's got nice features like the child can request control using this feature here, and that means that they



can change things on the screen, they can put text in themselves and it gives them ownership over what they're doing, rather than just being kind of passive observers. And so it's a lot more sort of like being in the classroom context. Then we had these words embedded into the 'passage of the day', as I mentioned, and then a few comprehension questions around that.

OK, so I'm not going to show you a whole bunch of graphs. I'm going to just describe the results to you. You can ask me about the data if you want afterwards. Basically, to summarise this pilot study, what we found was that RILL improved literacy and language skills over and above typical schooling over this eight week period in the first lockdown. We also found that the synchronous teaching method, so that was the live interaction, was more effective for teaching fluency in word learning and speech sounds. So basically anything that involved the kind of verbal component, where it was presumably beneficial to see the teacher's mouth articulating certain words. It was better to have that live interaction, but synchronous and asynchronous methods were kind of equally effective for things like reading accuracy and spelling. OK, so it shows that basically some skills can be taught quite effectively asynchronously, but perhaps targeted oral language skills should be taught in a sort of face-to-face environment.

We know it's important to try to connect research to policy and influence society, when it's relevant to do so. So our recommendations from this work was that we really should be integrating learning technologies in the classroom that couldn't be implemented at home when required. So even beyond the lockdown and the pandemic, many children can't attend school because of chronic illness and things. So these kinds of things should be routinely used and teachers should be trained to use these kinds of methods so that no child has to suffer lack of education on that account.

We also recommended upscaling and creating CPD opportunities for educational practitioners to assist in this kind of evolution of classroom teaching. And we also recommended to ensure that agendas from the Welsh Government, like Cymraeg 2050, you know that many Welsh citizens actually speak Welsh, that we invest in the development of high quality Welsh materials as well, commensurate with English materials. So this was entirely done through the medium of English because we recruited across the UK, but I'll come to the Welsh components in a minute. And we also recommended that they invest in scientific studies to examine the efficacy of different remote teaching methods and teaching platforms, as we had done. This was funded by the Economic and Social Research Council, but really it makes sense for the Government to invest in these things as well.

So we actually have, you know, made headway on all of these points. But what we're really happy about and very keen to share, is that we have developed RILL since its original format in comparing synchronous and asynchronous. So we've got a RILL Cymraeg now, which is our Welsh language version. And it includes bespoke materials that are created from scratch by Welsh authors. So typically what you'll know if you deal with any kind of Welsh language material is that things are just translated from English, and that does work some of the time. But if you really want a good programme, especially for educational purposes, it's important to take into account things like the idiosyncrasies of the Welsh language, like different spelling patterns, mutations that can occur, and the fact that those are the challenges really for Welsh learners.

We've also got RILL-in-school developing now, which is a version that teachers can use in the classroom as kind of additional material for classroom teaching. And we've got RILL for carers, which is a summer catch up programme delivered by the carers of looked after children to help with their learning. So we've got many directions that it's going in.



So basically from this work, what we're really keen on promoting is that we really need to invest, post-COVID, in resources to train teachers across Wales in the use of programmes like RILL. We need resources to adapt and administer RILL to a range of children with different languages, abilities and environments. So we're thinking of, you know, immigrants across the UK, and perhaps RILL programmes that can kind of ease them into learning English in a sort of better way that bridges across their native language as well. And we need research to fully comprehend which types of remote learning are most effective.

OK. So we do have a website where you can look up our latest activities, and we are quite active, we're applying for grants now to expand this on a UK level. So we're hopeful that this will continue, and we're certainly updating everything on this, so please do keep in touch if you'd like to. And it just remains for me to say thank you. Thank you for all for the feedback we've had from the children that have taken part, their parents and the teachers who have spent a lot of time giving us feedback on the materials and all the training that we've given them. All my collaborators, including Josh, who's here, and the Miles Dyslexia Centre that's given us an amazing framework from which to launch this work. And that's it!

Stephen Robinson: Great, Manon thank you very much and another really interesting talk and interesting to hear some potential overlaps with Sarah's work as well. Or the children that she works with rather than for Sarah specifically. I'm keeping the Q&A open, we do have a few minutes. I had just a question about - you mentioned briefly there the feedback from teachers and from parents I think you said as well, and I was wondering in particular about the teachers. So I'm just aware that a lot of teachers during lockdowns find it very deflating and tiring, actually, to be working asynchronously. So I just wondered what the feedback was in relation to the synchronous teaching?

Dr Manon Jones: That's a very good point. Basically, we didn't really do the pilots through schools in the end, because the schools were so incredibly overtaxed by having to, you know, kind of completely change to online learning, that they just couldn't engage. We had a couple of schools that did engage and took part, but most of our recruitment was through social media with very desperate parents who could not get their child to learn anything and they were working themselves. And this was a bit of a silver bullet, actually, for a lot of them. So that's what I mean by the parental feedback, it was absolutely, you know, we had people coming and saying we would have gone absolutely mad if it wasn't for this programme where we just - we depended on that. And it meant that they'd had their literacy learning kind of done. And we didn't have to scramble around with other materials ourselves. So it was really a social media effort with parents, and then the second iteration which runs in English and in Welsh is through schools. So we're rolling this out in about 50 north Wales schools at the moment, and it keeps, you know, the demand for it keeps growing. Actually, it's really nice to see.

Stephen Robinson: That addresses another question that's come in there and somebody has asked. They believe it's available in north Wales and is it likely to be spreading to south Wales anytime soon?

Dr Manon Jones: We hope so, yeah! It's just quite a task to do the training, so that's the bottleneck at the moment. We've got to find a way of streamlining the training for teachers so that it can be done at scale. I think that's always the issue with this kind of work, there's a huge demand for it and we've got quite a large waiting list and it's just a matter of having enough specialist teachers who can train other teachers to use it. So it's just time and grant money basically.



Stephen Robinson: I'm sure it's a big undertaking to train the teachers. We have one minute left, so I'll just do a quick question here from Gem. Are there associations or implications for working with other co-presenting conditions such as Irlen's syndrome?

Dr Manon Jones: Oh, I'm not sure actually. Would that person like to elaborate a bit? How would they envisage that? Why that particular syndrome?

Stephen Robinson: It's not a syndrome I've heard of to be quite honest Manon, so I'm afraid I'm no help to you there.

Dr Manon Jones: Happy to engage afterwards if you want to email me.

Stephen Robinson: Yeah, that might be a really good solution actually. We can pass on your email address maybe if that's OK.

Dr Manon Jones: Very happy to, yeah.

Stephen Robinson: Super. Manon, thank you very much. That was a really interesting talk as well. Really useful and really interesting indeed. So thank you. OK, so we've come to our final speaker of the afternoon and this is Associate Professor Paul Hutchings from University of Wales, Trinity St David. Paul is the Assistant Director at the Centre for Psychology and Counselling at the University, and he's going to close this afternoon by talking to us about gender traits across the world and our ability to recognise and understand people's gender views. You're very welcome, Paul.

Associate Professor Paul B. Hutchings: Thanks very much. As a Teams user, I'm just getting used to Zoom - so hopefully this will go fairly smoothly if I share my screen now. How's that? Everybody see that OK?

Stephen Robinson: Perfect, yeah.

Associate Professor Paul B. Hutchings: Excellent. Yes, thanks very much for coming to this short presentation on what has been a massive undertaking by the research teams right away across the world to examine this issue. And it is one that's of importance for so many societies, and it has been for so many years. And namely, really, how far along the road to gender equality are we as a global society and what are the barriers to achieving it? So, I'm giving this talk, but I'm only representing a huge group of people from across the world, and in particular also representing the Project ImpEx research team at UWTSU that carries out a lot of research into prejudice and discrimination in general. And in particular, Dr Katie Sullivan, who did much of the data collection on our part for this study.

So, I'd just like to start by describing a couple of scenarios that may surprise some of you, but for others, especially the females, you may find them all too familiar. They are fairly anecdotal, but they do highlight some of the issues that we're talking about here. So in the first case, a few years ago, a female applying for a gym membership completed her online form and ticked the box for 'doctor', and she then went to pick up her access card from the reception desk and decided to have a session in the gym. Then when she went to try and get into the locker room, she found that her card didn't work on the female changing room door, but it did open the male changing room door.

In another case, a woman who'd booked into a single occupancy room in a hotel, went to pay her bill the following day, and the hotel wanted to charge her for double occupancy, and they said she'd clearly had a man staying with her. How did they know? Well, basically a



copy of the Financial Times had been ordered for the room and clearly only men read the Financial Times, so she must have had a man in the room with her.

Taken in isolation and as a one-off occurrence...if it happens once or twice in your life, it might be an amusing anecdote to tell friends. But you only have to look at the #everydaysexism on Twitter to see that these types of things are happening over and over again, and to see the patterns - that these things are occurring.

So what we're seeing here are expectations that are based upon two different types of stereotype. First of all, we have what we call these descriptive stereotypes, so how people actually behave. We do know that, by and large, the readership of the Financial Times is likely to be male. So the stereotype of a male reader is fairly reasonable, but it doesn't mean that women don't read the Financial Times. In fact, around 20% of their readers are estimated to be female. But there is another type of stereotype that we're concerned with, not merely based upon how people behave, but on how they should behave, and this is called a prescriptive stereotype, and it's often here that we see the most pervasive elements of cultural norms and society come into play with people's attitudes. Where they make judgments about whether the behaviours that an individual carries out in society are actually correct.

When it comes to the ways that different genders behave, we've come a long way from the time of the suffragettes and women being seen as inferior to men in many cultures. However, this concept of difference has remained quite steadfast. John Gray's book from the early 1990s remains one of the biggest sellers of all time, and it supports what's being called a bi-polar assumption. This idea that men possess male traits, females possess female traits and, by and large, never the twain shall meet. But what does the research evidence say? Well, the early evidence supported this to quite an extent. This research from Broverman et al. in the early 1970s asked males and females about the traits that they associated with each other. And they found that there were a number of traits that could indeed be considered to be bi-polar. Females as gentle and passive versus males as aggressive, females as emotional versus males as non-emotional and females as indecisive versus males as decisive.

As we moved into the 1980s, the early 90s, Williams and Best carried out research across a number of countries and also looked at the traits identified by Broverman et al. in the original study. And they found that even though they identified less of these traits, those broad definitions still seem to capture many of the elements that are seen in the original study, the female traits seem to be focused around what we call communal traits - such as nurturing and fostering relationships. And the male traits were still far more associated with strength and dominance and what we call agency, and this is seen in many cultures across the world.

So in 2019, a project was put together by the University of Gdańsk and the University of Southern Florida to replicate and extend the Williams and Best study for the 30th anniversary of their 1990 study. I mean, a lot can change in those 30 years. So they recruited research teams across the world and were able to gather data from over 60 countries using identical translations of these validated scales to examine a number of different issues related to traits and stereotypes, which are linked to gender.

So what did we do? First of all, we asked participants, both male and female, to rate themselves on over 50 traits, such as how compassionate they are, how dominant, how sensitive. Then they also rated men in general, and women in general for the same traits, which gives us an indication of how they rated their in-groups or their out-groups depending upon their gender. And then, importantly, we could look at how they rated themselves against either their in-group or their out-group. There are a number of different measures



that we took in this research, but I just want to identify a couple of them because they're important for what I'm going to talk about next.

So we measured what we call hostile and ambivalent sexism towards females by males. Because this is known to be a powerful predictor of attitudes towards women in a number of societies. You can see some of the questions that we asked here, which give us these measures. And we also measured these attitudes, both male and female, about what it means to be a 'real man' and a 'real woman'. I'm going to focus on the 'real man' bit here because of some of the findings. Because this is an issue in a number of societies, where men are expected to behave in a certain way. So when I talked about that prescriptive stereotype earlier, there is an expectation in many cultures that men should behave in a 'real' way in order to be seen as 'real men', and to not behave in that way can lead to a loss of manhood. So we can see again some of the questions that we asked about this.

So I'm just going to run very quickly through some of the global data. This is by no means all of the data, because with the amount of participants that we've got in the number of countries involved, we're still going on calculating a lot of these data, but several of the papers have already come out from this. In this first paper, which came out in the European Journal of Social Psychology in 2020, we examined responses from over 6000 men in 42 countries. Including several hundred people in our Welsh cohort as well, and so this includes males from the Welsh cohort as well. And what we were looking at, was their support for collective action to promote gender equality - such as signing a petition, actively engaging in an initiative to promote gender equality. Because we know from the literature, that this type of alliance from men to promote gender equality is a key driver for equality in many countries. So to look at this, we examined what we call men's zero-sum beliefs, whether they feel that gains for women are going to result in a loss for men, and we also then looked at this issue of hostile sexism.

So as you can see here from this analysis, and I'll clear it up and make it nice and simple, that basically a higher belief in zero-sum beliefs leads to less likelihood to support collective action. And this was also moderated by hostile sexism, so the more hostile sexism somebody has, the less likely they are to engage in collective action. No particular surprises there, but it is good for us to be able to look at this across these different nations in the way that we were able to.

What was surprising though was that countries who score higher on what's called the global Gender Gap Index, which indicates a greater parity in country between males and females, negatively predicted collective intention actions. So basically the more equality within a society, the less likely the males were in that society to support future collective action. Naturally, this is going to require quite a bit more research to understand fully why it is, but there are a couple of potential reasons for this. So the first is, that it could be that many of these countries consider that equality has pretty much been achieved, and that there's nothing left for them to do - and so there is no requirement for them to take collective action. Another alternative is that they may see the advances that women have made as a threat if they continue to be able to make these advances, and that may seem odd, but it does explain somewhat what's been called the Nordic paradox. That in some of the most gender equal countries in the world, we also get reports of some of the highest rates of intimate partner violence.

Our next study looked at this issue of precarious manhood belief, so this idea of whether it's felt that in a society, manhood is something that can be lost by not behaving in the ways that would be expected of a 'real man'. So the darker colours on the map indicate these higher levels of concern and belief, and this was across 62 countries and we asked both males and females, so this was a participant pool of 33,000 participants. And we can see some really



clear distinctions coming through with these different cultures and nations, and so again, we're starting to be able to really explore this at a depth right the way across the globe, being able to explore in so many different countries.

I think it's worth highlighting something here that is also fairly obvious from looking at this map, which is that when it's relating to the research methodology, there is a huge paucity of research being carried out on the African continent. We just found it so difficult to get into these areas, a mixture of a lack of access to research teams, limits on the teams in terms of having the facilities to carry out this type of research, and the issues that may arise, for participants and research teams alike, in responding to questions relating to this type of topic make it clear that far more needs to be done when carrying out research of this type in Africa.

The previous couple of slides might appear to be a bit negative, especially that last one, showing that precarious manhood beliefs, and this idea of being a 'real man' is quite prevalent in a number of countries. But this map suggests that actually something may be being done about it, and so this map now looks at whether people are actually doing something about this. So this is looking at the collective intention of males in those countries. And what we tend to see is that, apart from a couple of notable exceptions, it almost mirrors the previous map that we saw. And so whilst we may have precarious manhood being quite high in certain nations, it's almost recognised in those nations and people are taking steps with collective action to address these issues in that society. So in countries where being a 'real man' is seen as an important factor, these are also the countries that are most likely to be reporting steps to address this through this greater collective action.

So I want to finish looking at the global findings by going back to something that I talked about earlier in the coverage of the studies from the 1970s and the 1990s, and that was the issue of females being seen as more communal than males. Because, as we can see here, this is still the case. The blue dots represent females in individual countries, the red dots represent males. And in many of the cases, in fact in most of the cases, females rate themselves as more communal than males do. So this chart shows differences across countries based on what we call power distance, which is the extent to which those with less power in a society expect and accept unequal power distributions, with countries on the left of the chart being low in power distance, and so more egalitarian. And what we can see here, which might seem rather strange, is that regardless of power distance, women show a similar level of communal self-views. So the blue line there is pretty much straight across.

So regardless of power distance, females in a society tend to view themselves as being more communal. And we can also see here that in every case it's much higher than for the males. But what we also see is that men in more egalitarian nations show less communal self-views and greater agentic views, this agency, being this 'doing' side of things. The gap narrows, although it isn't eradicated in countries which have this higher power distance, and these cultures tend to be more collectivistic in their approach to society as opposed to the more individualistic societies, associated with lower power distance. So still issues that need to be resolved there.

Before I finish as well, I'd just like to talk about an individual study that we're carrying out, which is a sort of step down from the global data, but is exploring things with our own Welsh data sets. And it's completely different from what we've seen before, far less charts for a start. And [as] part of the study, we were able to ask a free text question, to ask what people thought it meant to be a man or a woman in Welsh society. And the responses to the questions about the women were quite varied, and so we weren't able to particularly pull out any themes. But a real theme came through when examining the responses about men, using content analysis.



Women's responses about what a 'real man' was, was someone who was there for their family, shared responsibilities, particularly with childcare and division of chores. The men, however, saw a 'real man' as being someone who went out with their male friends drinking and chatting up women, and who played sports such as rugby. But one of the things that was really interesting here, is that many of the men who responded weren't saying this about themselves. They were talking about how they felt they were expected to behave in order to be seen as a real man. So once again we're back to that prescriptive stereotype that seems to be so hard to shake. So clearly we've come a long way, but there's still much further to go.

So thank you very much for listening, and once again I'd just like to recognise all the contributors to this project. As I said, data analysis is still ongoing and particular thanks to Katie Sullivan at UWTSO and the teams at the University of Gdańsk and the University of Southern Florida who organised the global research. And thanks very much.

Stephen Robinson: Thanks very much Paul, that was great and bang on time as well - which is always appreciated. OK, so we've got a couple of questions for you as we've still got some time which is good. The question here from Nick: Really interesting, I'd be curious to see how this links to the rise of incel 'men going their way' groups online and actions offline.

Associate Professor Paul B. Hutchings: Yeah, I mean, as we dive down into the data we're hoping to see things because...and it's a really interesting thing here. Well, one of the reasons why I've sort of, with my script, interspersed the terms male, female, men, women is almost to identify that across different global societies, there are so many different things going on. You know, if you think about the things happening in UK society, in American Society in particular, it dominates our thinking quite often. But of course, it can be very different in many societies around the world, especially when you know people may not even necessarily consider issues such as, you know, gender fluidity, transitioning - these just aren't even issues in some countries, and exactly the same when it comes to the incel movement in particular. I think as we dive down into individual data, we'll be able to explore these things in far greater detail, but I'll admit we're nowhere near that in the data analysis at the moment, we're still on the global level. But undoubtedly, I think that in certain cultures we will see these things coming through, I certainly hope we're able to see those things coming through anyway, because I do think that they will be there in some of them.

Stephen Robinson: Yeah, and can I ask you just about you mentioned your content analysis there at the end, I thought that was really interesting. How, when, you kind of said it seemed like the men weren't talking about themselves, that they were kind of...there was still sort of evidence of a stereotype there wasn't there of men as 'drinking and playing rugby'. And I mean do you agree then...I mean well, I have two parts. Well, I'll ask you one question. Do you think that there was variation across countries in that particular...was that one of the things that was represented on your map? Do you think? I'm kind of wondering about the variety there in terms of which cultures were noticing that change, and if there were some that were very resistant, and I guess that might be the black areas on your first map.

Associate Professor Paul B. Hutchings: It's really difficult, because it was never part of the original analysis or it was never part of the original analysis plan for the global thing. So, we looked at it. We were just looking through the data and when we saw some of this stuff, we thought we needed to actually do a content analysis on that. But there was never a global plan of 'everybody look at it', so we're in touch with some of the other research teams now to almost discuss, you know, them looking at some of it as well to see if we can match things up, and whether there are things there. So that one has very much been quite an



individual thing. But yeah, I can't wait to write, I'm desperately trying to find some time to write the paper because it was amazing how strongly it did come through. Particularly this, as you say, it was men saying, you know, 'I'm completely different to this', but I don't feel like I'm a 'real man' because I'm expected to behave like this. When actually the women and the women's comments were almost universal when it came to what they wanted in a man. It wasn't this rugby playing bloke going out-

Stephen Robinson: -not what the men thought they wanted, yes.

Associate Professor Paul B. Hutchings: Yeah, they wanted someone being there for them and you know, being there for their family and all these sorts of things, and very few of the men actually responded with that. It shows this disconnect that seems to exist, certainly in our population.

Stephen Robinson: One last one for you Paul, if that's OK. Lauren has asked, she says it's been really fascinating, she's enjoyed it and she's wondering what got you interested in this particular area of study?

Associate Professor Paul B. Hutchings: I don't often make forays into gender areas in particular, because my focus is mainly on issues of race and class, so I do a lot of stuff on prejudice and discrimination in general. But, you know, gender is clearly comes that comes in that area of prejudice and discrimination. And so, through discussions with people in other nations, this idea of this collaborative project was, it was a fantastic one to be involved with. It was very, very difficult and you know, as I said, I'm just giving the talk here and I did a very, you know, a small part of it in Wales. The University of Gdańsk, in particular, they've got a team of researchers, they did a fantastic job of pulling all this together. As I say, you know, well over 30 odd thousand responses, participants, you know, literally millions of bits of data, and they've been fantastic with it.

Stephen Robinson: Yeah, incredible, thank you. Thanks Paul, that was a really interesting talk to draw our event to a close today. I just want to extend another thank you to all of our speakers, I've really enjoyed all of the talks, it's been really fascinating. And a lot of our audience has stayed with us, we've lost very few people as we've gone through the afternoon, so that's a really good sign as well - that you've engaged with the audience effectively as well. So thank you very much for that.

Thanks also to everyone who has joined us and it's been really lovely to have you here for this festival of psychology. And I would point out that we are going to post some links into the chat to free OpenLearn Wales resources. OpenLearn is the OU's free online learning platform and there's lots there to explore and to build on your learning. So we hope that you enjoy those as well. You can also keep a careful eye on The Open University in Wales Facebook page. I feel like I'm advertising here, but that's OK. And the website for future OpenTalks events, and it's great that we've been able to use this OpenTalks format for our event today.

So it just remains to say a final thank you to everyone, we really appreciate you joining us. So thank you very much. You've really all made it a great success for us. Thank you. Goodbye everyone.