



**Maynooth
University**
National University
of Ireland Maynooth



Walk Me Back: Walking Reminiscence Interventions

ASI Webinar, Sept 4th 2024

Prof. Richard Roche

Department of Psychology, MU



Introduction/Background

- **Current interests:**
- **Memory, ageing, dementia, reminiscence**
- **Synaesthesia**
- **Art and Science**
- **Neuroscience Advocacy, Outreach & Engagement**

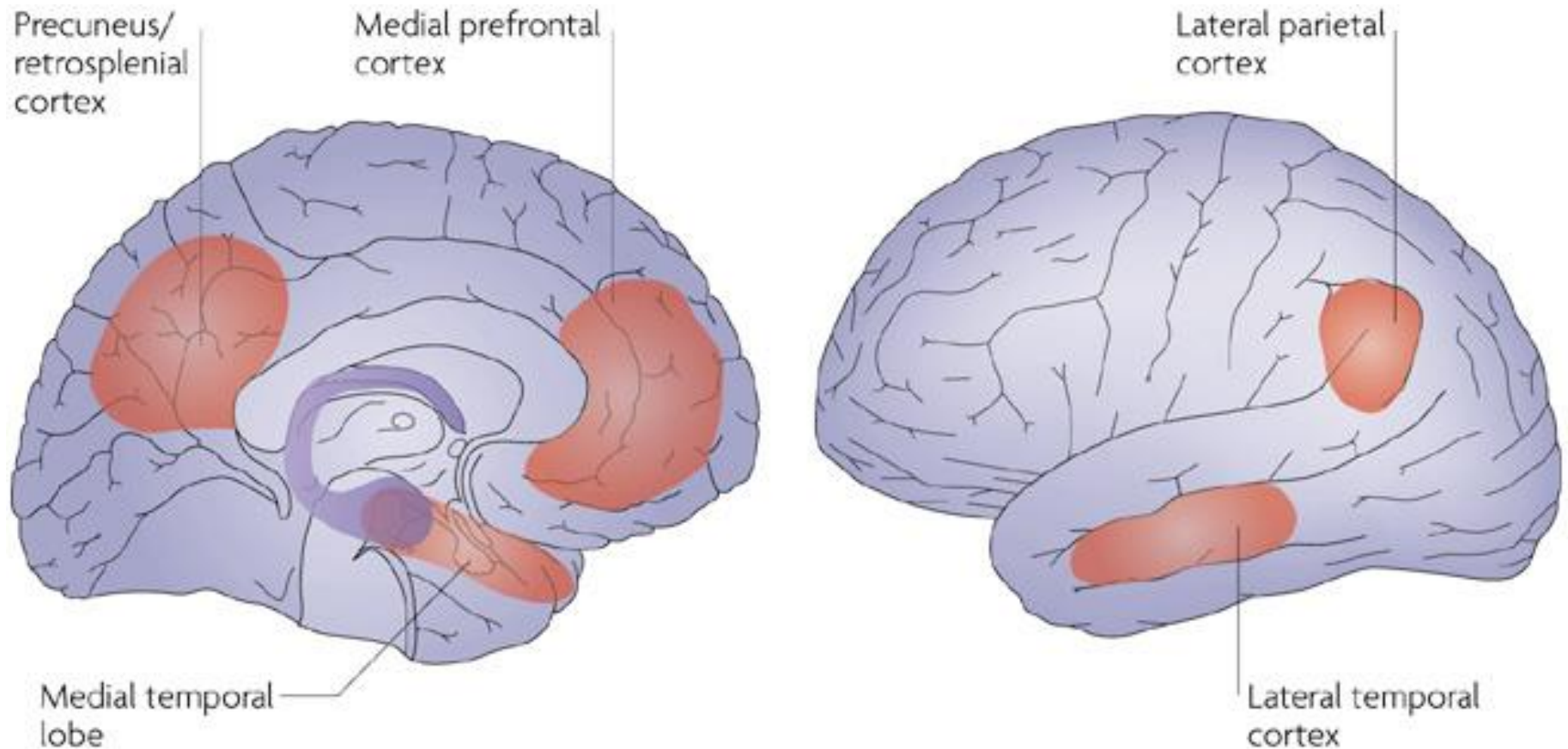


Overview

- Memory, Brain & Reminiscence
- **Recall Initiative** study (IRC New Horizons)
 - » IRC Ulysses funding
- **AIM WARM** study (IRC New Foundations)
- **TRIADICS** study (IRC Coalesce)
 - » IRC Ulysses funding



The Brain's Memory Systems

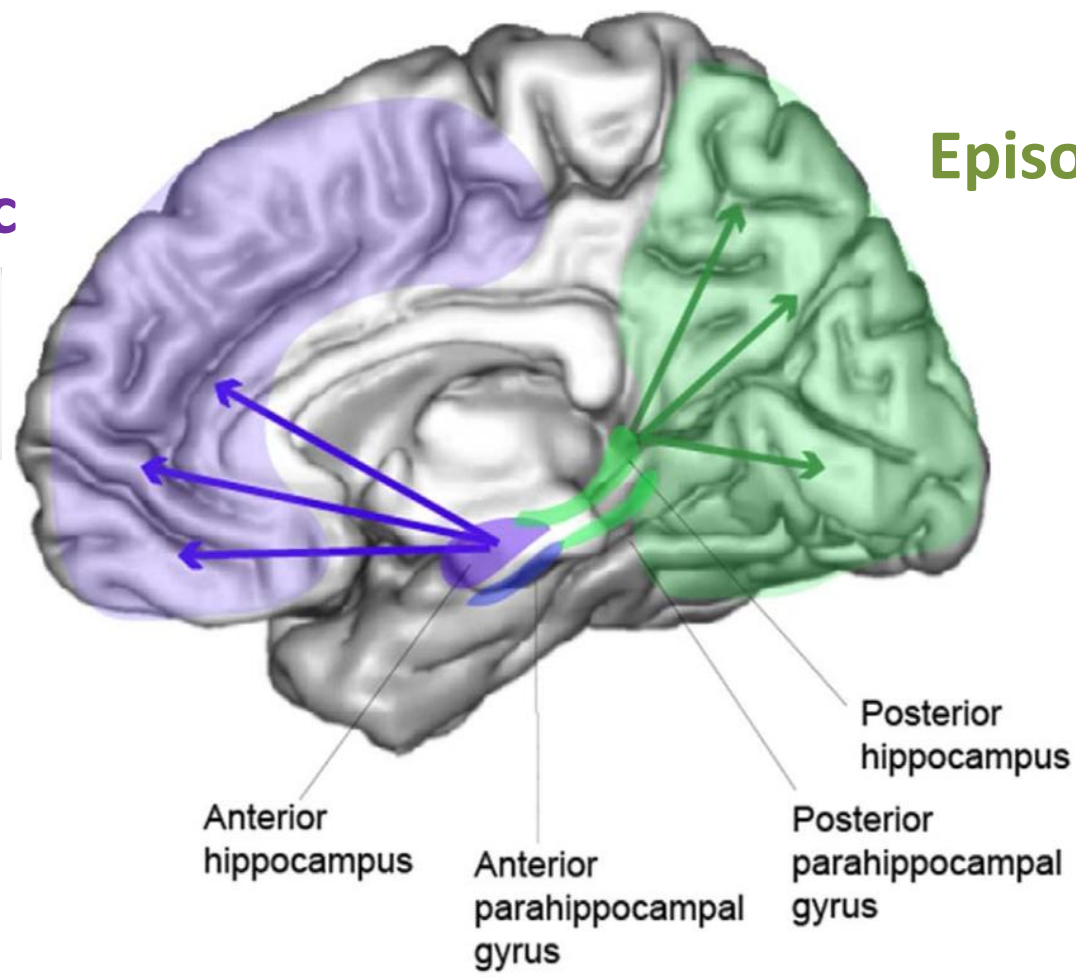


Autobiographical Memory Network

Semantic



Episodic



Memory and Brain

- Interest in non-pharmacological / lifestyle-based approaches to cognitive health, esp. **memory**
- Increase in “*social prescribing*” from doctors
- MRS study on rote learning of poetry in healthy older (2009)

BMC Neuroscience



Research article

Open Access

Prolonged rote learning produces delayed memory facilitation and metabolic changes in the hippocampus of the ageing human brain

Richard AP Roche*^{1,2}, Sinéad L Mullally¹, Jonathan P McNulty³,
Judy Hayden¹, Paul Brennan⁴, Colin P Doherty⁴, Mary Fitzsimons⁴,
Deirdre McMackin⁵, Julie Prendergast⁴, Sunita Sukumaran⁴,
Maeve A Mangaoang⁵, Ian H Robertson¹ and Shane M O'Mara¹

Reminiscence & Storytelling



- Eddie Lenihan, *seanchaí* (storyteller)

Reminiscence

- Until 1960s, reminiscing in old age seen as a negative sign (regressing)
- **Butler (1961)** – adaptive means of resolving affairs, giving meaning to life etc.
 - Benefits to mood, self-esteem, life satisfaction
- Subsequent research on Reminiscence Therapy (RT)

Reminiscence Therapy



- ‘Sup
- IRC



The Recall Initiative



@RecallEire FOLLOWS @RROCHENEURO

Examining reminiscence, memory & well-being in older adults.
 Maynooth University. Irish Research Council funded. #Psychology
 #Neuroscience #OralHistory
 Kildare, Ireland

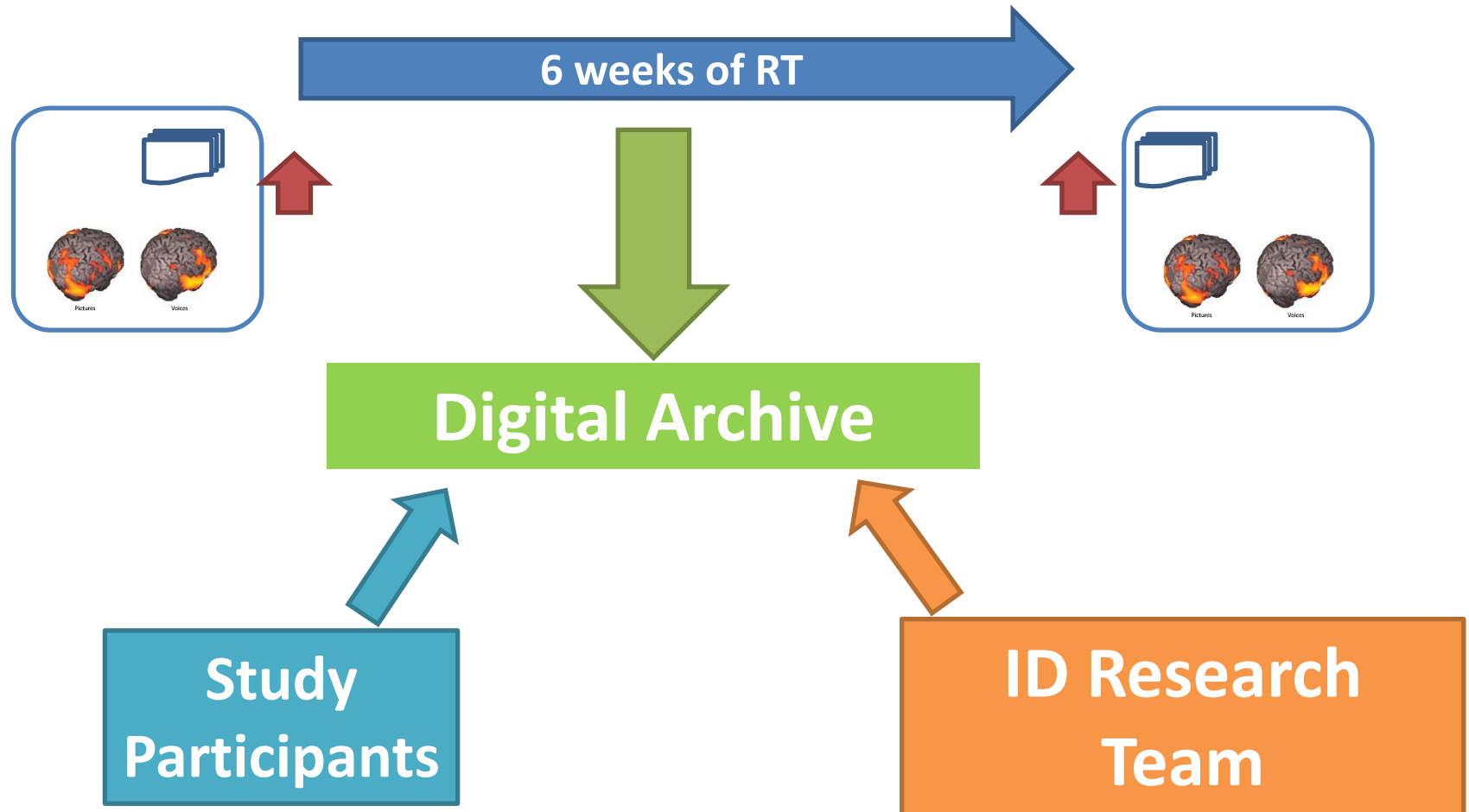
esis’



- Exp 1a: Behav study of RT with older controls
- Exp 1b: Scanning with older controls
- Exp 2: Behav study with AD group
 (Peamount Hospital)



Recall Initiative overview



Digital Repository of Ireland



English



HOME DISCOVER ORGANISATIONS ABOUT ▾ TEAM ▾ WORKSPACE

Newest ▾ 9 Results ▾

Recall Initiative: from Memory and Life History, to Ireland and History | x Clear All

Collections Sub-Collections **Objects**

1 | 2 |

Interview about Dandelion Market in 1970's



Audio

Interview about cinemas in Dublin



Audio

Interview about 1916 commemoration in 1966 and Nelson's Pillar



Audio

Refine your search ▾ 11

Creation Date >

Subject (Temporal) >

Places >

Names >

Language >

Mediatype >

Digital Repository of Ireland

- Go to dri.ie and search for “Recall Initiative”
- Or click directly on this link:
- [https://repository.dri.ie/catalog?mode=collections&search field=all fields&show subs=false&q=recall+initiative](https://repository.dri.ie/catalog?mode=collections&search%20field=all%20fields&show%20subs=false&q=recall+initiative)

Next Steps

- Next Project – combine **Reminiscence with Walking** (IRC New Foundations)
- Work with local groups around Maynooth – **Age Friendly Ireland, Alzheimer Society of Ireland & Irish Prison Service**
- **Combine** with breathwork, meditation, music etc. (IRC Coalesce & Ulysses)

Memory and Place

- Idea of “place” as a powerful memory cue...



3. AIM WARM Project

- **Walk And Recall Memories:** combine **walking** with reminiscence for people living with dementia in the community
- Routes tailored to Maynooth town specifically
- Worked with ASI's **Dementia Research Advisory Team (DRAT)** and **Team-Up for Dementia Research** for PPI and recruitment

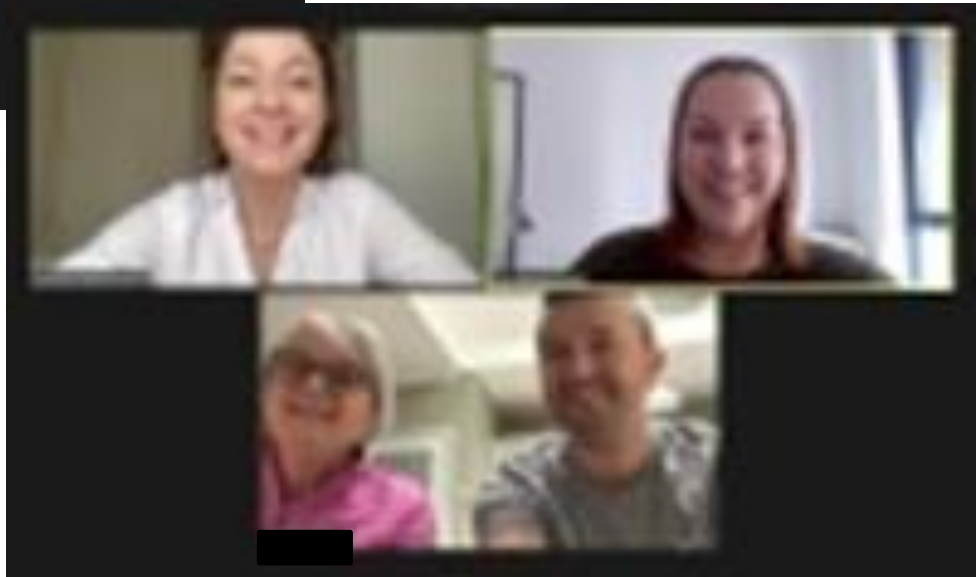


PPI

- Used a **Patient and Public Involvement (PPI)** approach, where PPI contributors helped us to co-design every aspect of this intervention (e.g. opinions on the ideal **time of day, routes** to be walked etc.)
- PPI contributors were people living with AD, and their family members, via ASI's DRAT panel



Cassandra Dinius

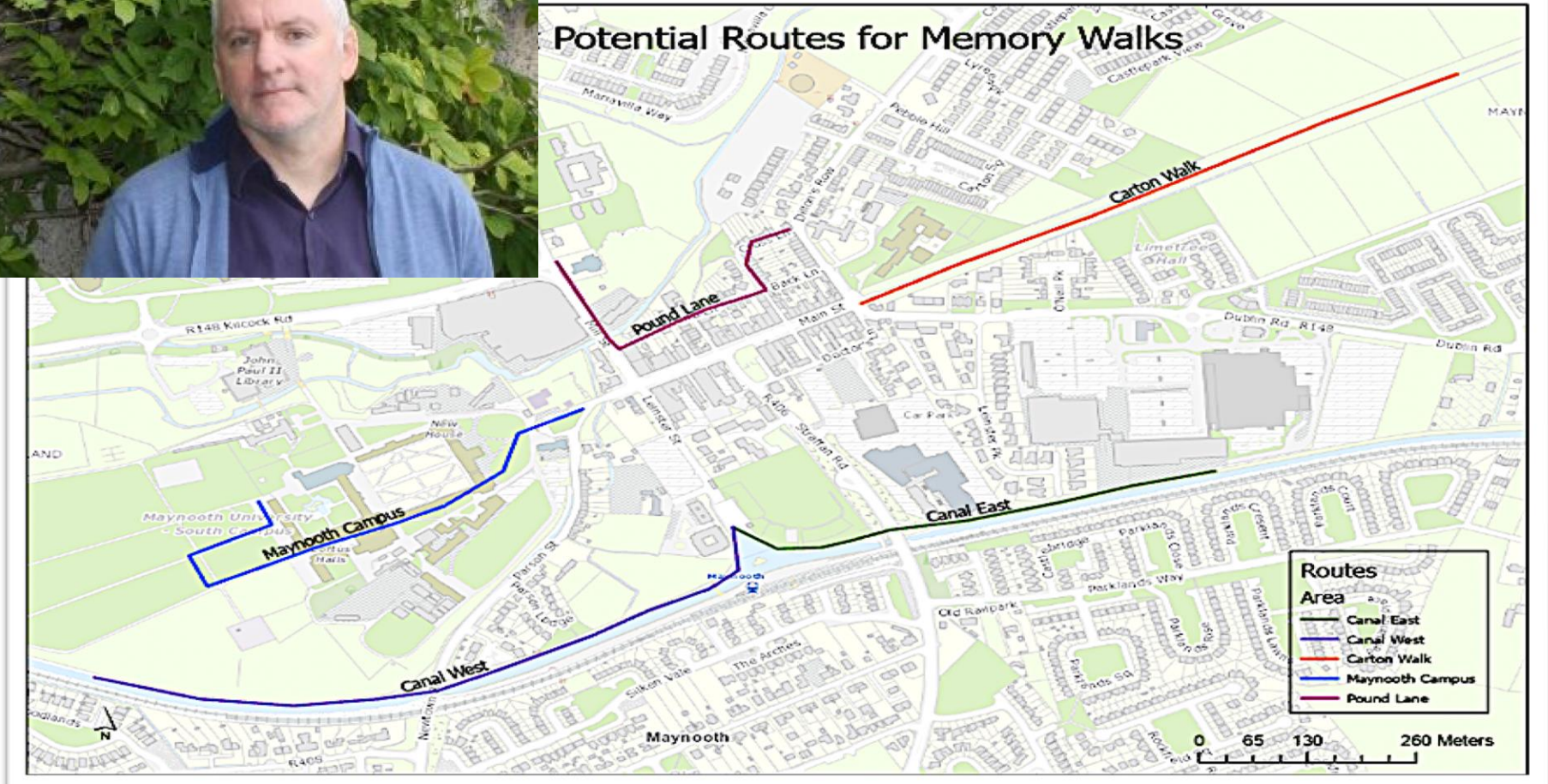


Carmen Pocknell

Routes



Potential Routes for Memory Walks



Design

Week 1

Weeks 2 and 3 (two memory routes per week)

Week 4

Memory &
Mood
Measures

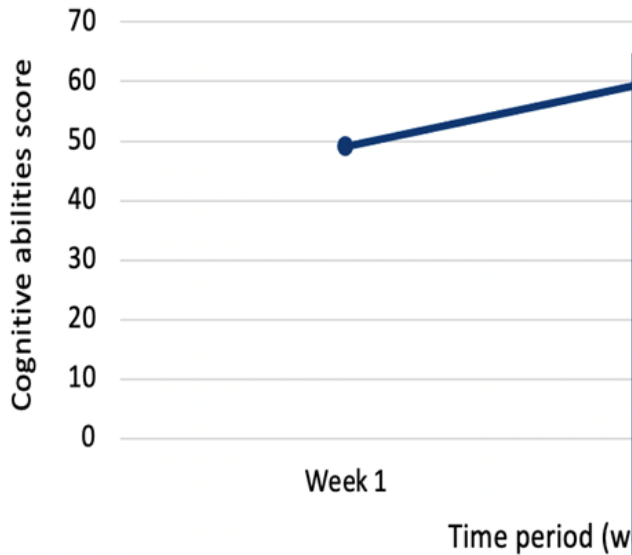
Memory &
Mood
Measures



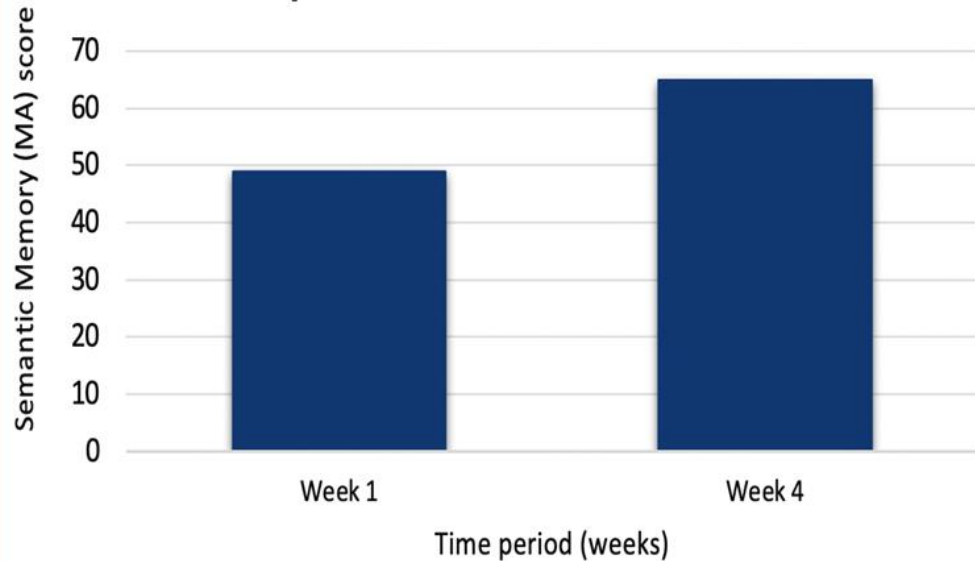
Carried out in May/June 2022

Results

Global Cognitive performance pre- & post- 4 week-intervention



Semantic Memory (MA) performance pre- & post- 4 week intervention



Results

Global cognitive performance score increased (24.5 to 28)



Psychological well-being increased (42.5 to 64)



Satisfaction With Life maintained pre-post (28.5)



Semantic memory for Middle Adulthood period increased (4.75 to 11)



Summary

- **PPI** was central to the design of AIM WARM study, and continued to shape the content of our TRIADICS study
- The Alzheimer Society of Ireland (ASI) were a fantastic support, via the Dementia Research Advisory Team (DRAT), for both PPI and recruitment
- Very small pilot sample (n=2) but encouraging trends and retention of participants; positive anecdotal feedback.
- **Community links** – Maynooth Arthritis Walking group

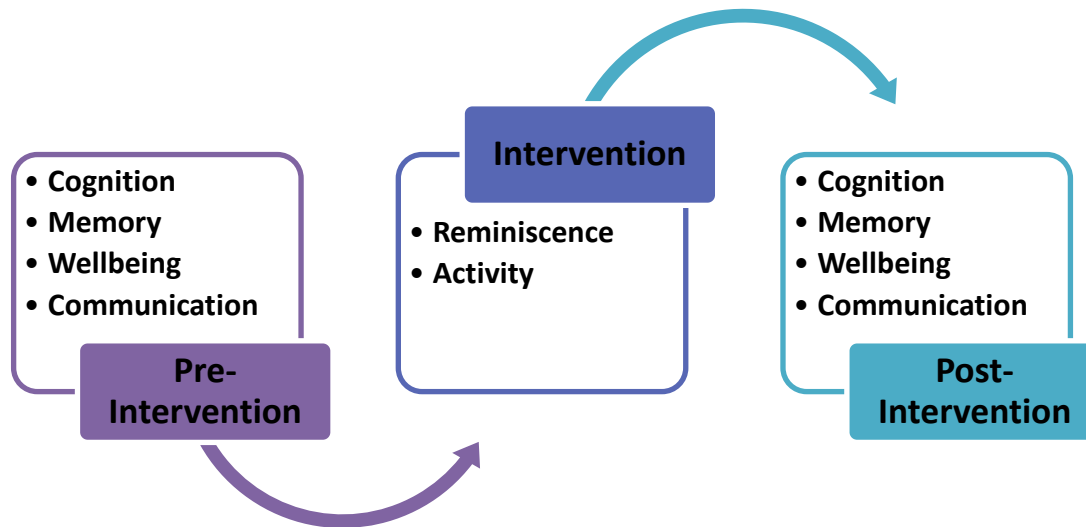
4. TRIADICS

- IRC Coalesce-funded study on **Tailored Reminiscence Interventions for Ageing & Dementia in Community Settings**
- **Combine** RT with (PPI-selected) complementary activities (e.g. walking, music, t'ai chi) for increased benefits
- Work with **4 different samples**: Community Older, Alzheimer-type Dementia, Semantic Dementia/PPA, Prisoners
- Further **scanning study**

TRIADICS PPI Workshops



Tailored Interventions



Cognitively healthy

- Reminiscence
- T'ai Chi
- Breathwork

Living with dementia

- Reminiscence
- Walking**
- Music

Semantic disorders

- Reminiscence
- T'ai Chi
- Breathwork
- Walking
- Music

People in custody

- Reminiscence
- T'ai Chi
- Breathwork
- Walking
- Music

Tailored Interventions

Cognitively healthy

- Reminiscence
- T'ai Chi
- Breathwork



Tailored Interventions

Semantic disorders

- Reminiscence
- T'ai Chi
- Breathwork
- Walking
- Music



Tailored Interventions

People in custody

- Reminiscence
- T'ai Chi
- Breathwork
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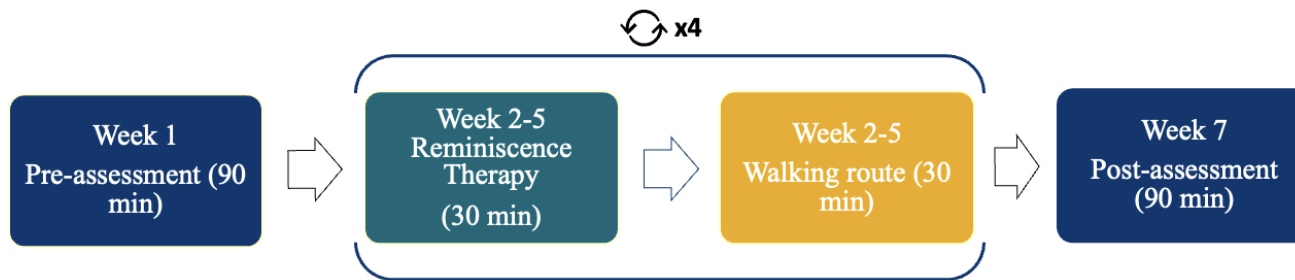


- Via Emma Regan-Black & Maggie McGovern, IPS
- **Completed PPI, April 2023**
 - 10 men, all aged 60+
 - Highly active group, interested in all activities
 - All activities to examine feasibility and engagement
- Completed December 2023.

Tailored Interventions

Living with dementia

- Reminiscence
- Walking
- Music



- **March 2023:** recruitment (n=10); **April/May:** pre-assessment & Intervention
- **June:** post-assessment

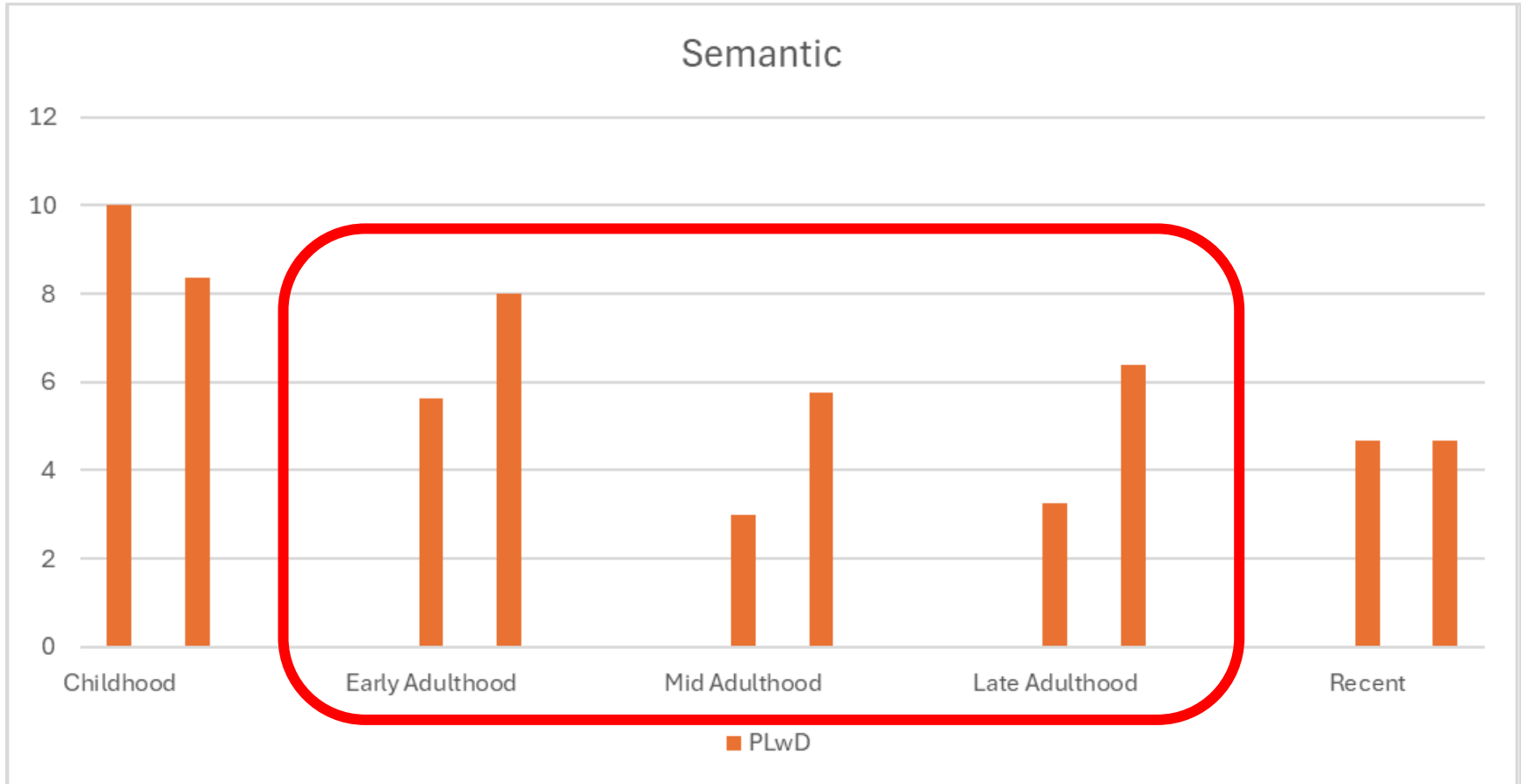
Tailored Interventions

Living with dementia

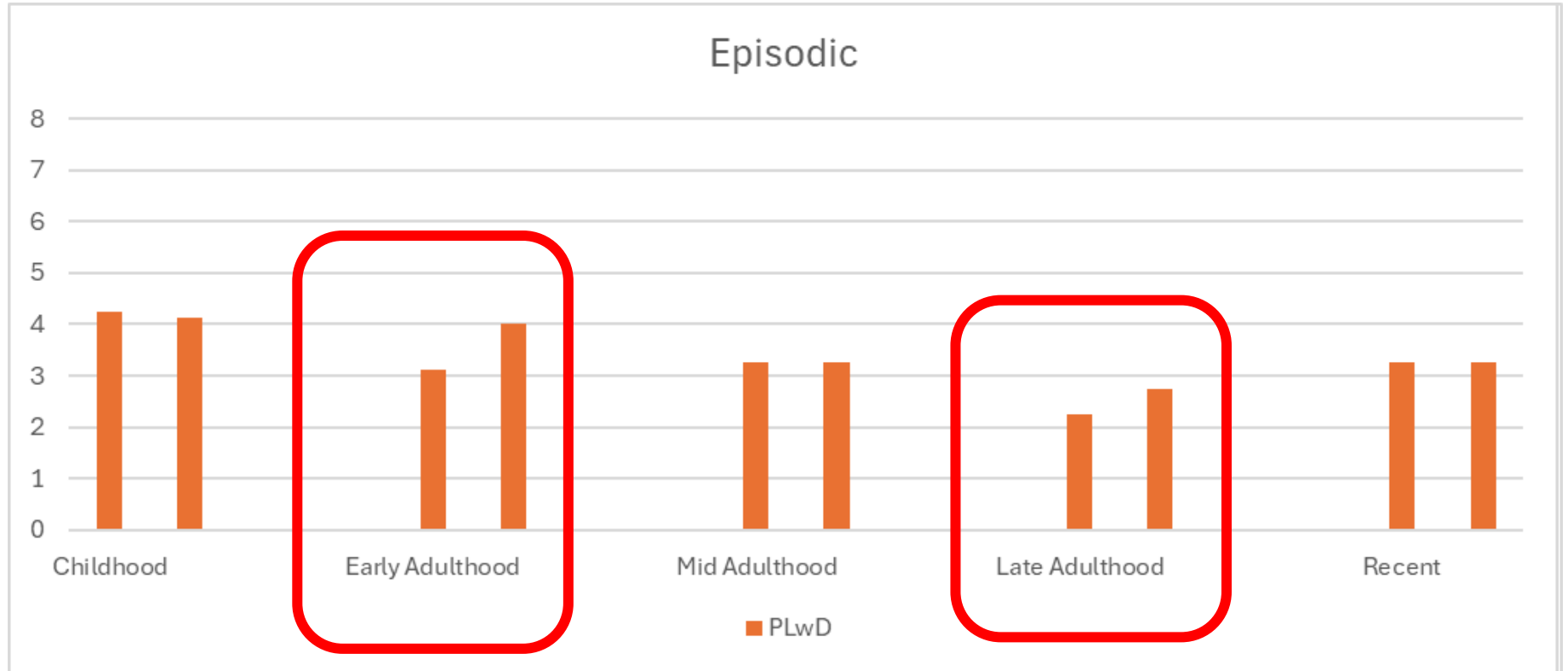
- Reminiscence
- Walking
- Music



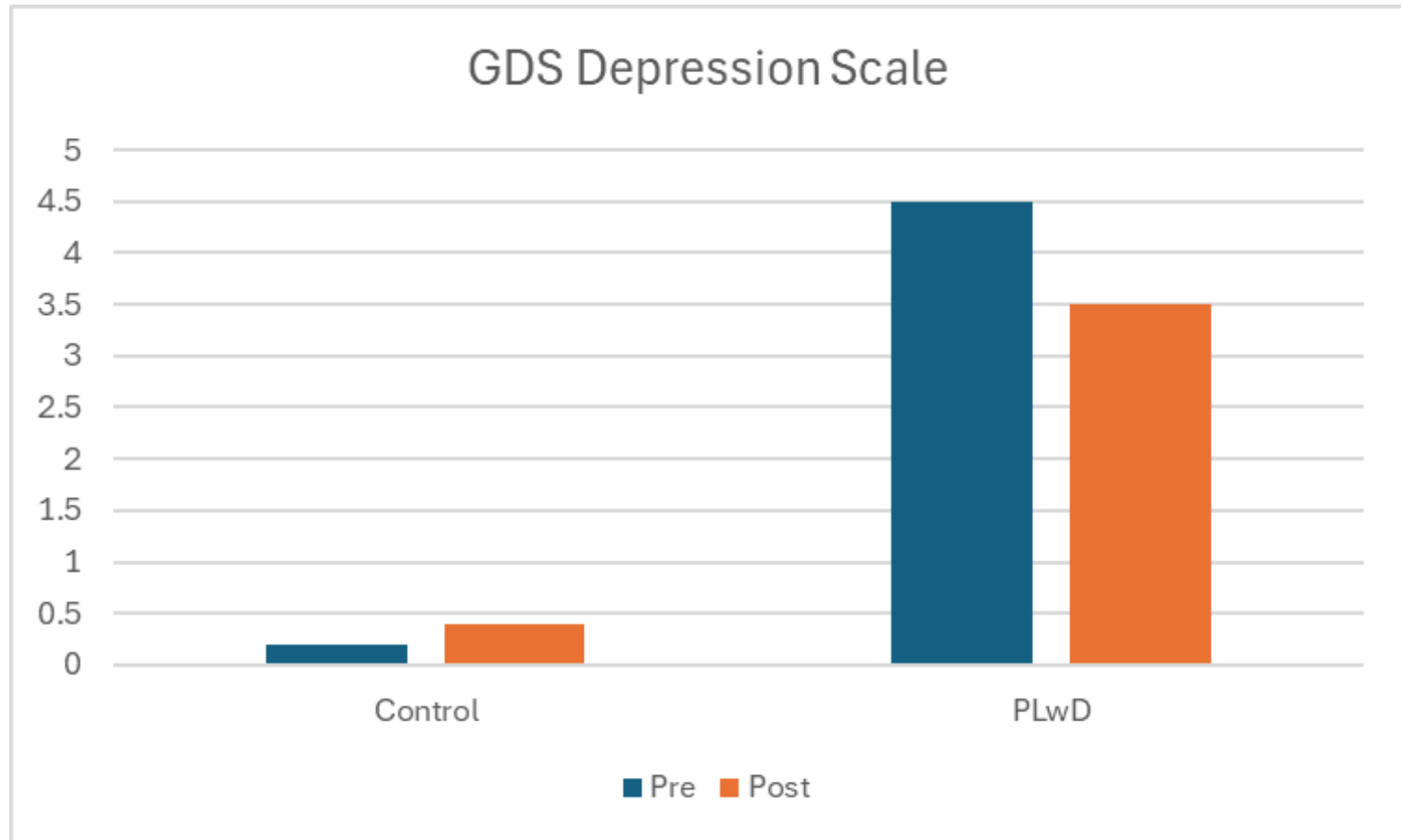
Results



Results

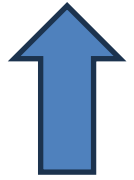


Results



Results

Increases in Semantic ABMs in Early, Middle and Late Adulthood



Increases in Episodic ABMs in Early and Late Adulthood



Reduction in Depression



Discussion

- **Benefits** of combining reminiscence with walking
- Improvements in **cognition/memory** and/or **mood**
- Try it yourself: via walking groups, with family, local history groups
- Also possible remotely/limited mobility:

Discussion

- Combination of **Zoom** and **Google StreetView**:



Discussion



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Discussion



Image capture: Jun 2023 © 2024 Google Ireland Terms Privacy Report a problem

Discussion



Discussion

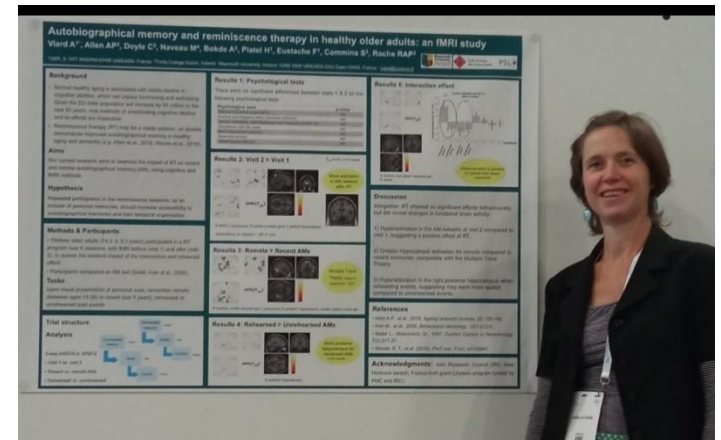


In Closing

- **Reminiscence and walking** - good for memory & brain
- **Combine** with other positive activities (diet, social, etc.)
- Idea of “brain as muscle” – keep it fit, active & challenged
- Our lives can give us much of what we need to look after our brains – *shape your life to nourish your brain.*

Acknowledgements

- **Andrew Allen, Caoilainn Doyle, Sean Commins (MU)**
- **Arun Bokde (TCIN)**
- **Des O'Neill (Tallaght Hospital),**
- **Mary Lee Tully (Peamount)**
- **Armelle Viard (Cyceron, Caen)**
- **Funding: IRC New Horizons & ULYSSES**



Acknowledgements

- **Cassy Dinius, Michelle Caffrey & Carmen Pocknell**



- Sean Commins, **Ronan Foley** (MU)
- Ciara O'Reilly, Cathryn O'Leary & Laura O'Philbin (ASI)
- DRAT & Team-Up members & PPI contributors

- **Funding**: IRC New Foundations, Ulysses & Coalesce



Thank You

Questions?



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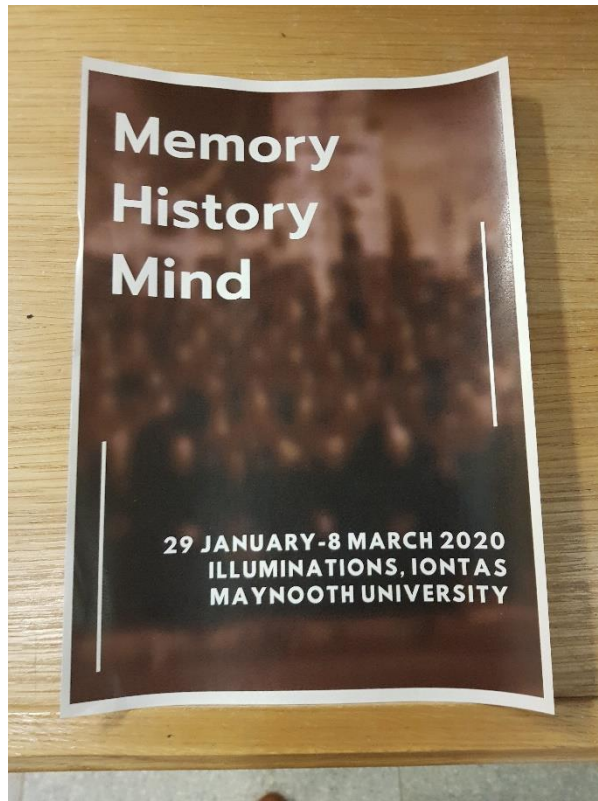
Dept of Psychology

Some extra stuff I didn't have time to talk about:

This was an exhibition in the Maynooth Illuminations exhibition space we hosted in 2020 based on the recordings from the Recall project:

MU Illuminations Exhibition

- January to March 2020
- Audio & images relating to Recall study recordings



MU Illuminations Exhibition



MU Illuminations Exhibition



MU Illuminations Exhibition



MU Illuminations Exhibition



Source

Source: visitroscommon.ie



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MU Illuminations Exhibition



- Allen et al. (2021) *Psychobiographical Illustrations on Meaning and Identity in Sociocultural Contexts*

Details on the next slide about how
to find and watch the videos on
YouTube,
Or click here:

https://youtube.com/playlist?list=PLqUh53_VedG7U8lsvYyNkn52Z_3ZyqFD-&si=R7AN_Vi8_WiXtoyD

MU Illuminations Exhibition

Search on YouTube for “Illuminations Roche Lab” for the playlist

The screenshot shows a YouTube interface. The search bar contains 'illuminations roche lab'. The video player displays a video with the title 'Memory, History, Mind' and a subtitle 'Wood Quay & Environs'. The video is from Maynooth University. To the right, a playlist titled 'Illuminations Roche Lab - 1 / 8' is shown, containing 8 items:

- 1. Wood Quay (4:45) Roche Lab
- 2. Lourdes (5:52) Roche Lab
- 3. Introduction (2:29) Roche Lab
- 4. Cameras (3:56) Roche Lab
- 5. Religion on Islands (3:05) Roche Lab
- 6. Measles, Mumps & Scarlet Fever (4:47) Roche Lab
- 7. Mining in Arigna (3:18) Roche Lab
- 8. Emigration (5:59) Roche Lab

References

Viard, A, Allen, AP, Doyle, CM, Naveau, M, Bokde, ALW, Platel, H, Eustache, F, Commins, S & **Roche, RAP**. (2023). Autobiographical cerebral network activation in older adults before and after reminiscence therapy: a preliminary report. *Biological Research for Nursing*, **0**(0), 1-13. <https://doi.org/10.1177/10998004231210982>

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Allen, AP, Doyle, C, Doyle CM, Monaghan, C, Fitzpatrick, N & **Roche, RAP** (2021). What We Talk About When We Talk About the Past: Discursive Psychological Analysis of Autobiographical Reminiscence in Older Irish Adults. In: C-H Mayer, PJP Fouche & R van Niekerk (Eds.) *Psychobiographical Illustrations on Meaning and Identity in Sociocultural Contexts*. Palgrave Mcmillan.

Allen, AP, Doyle, C & **Roche, RAP** (2020). The impact of reminiscence on autobiographical memory, cognition and psychological well-being in healthy older adults. *Europe's Journal of Psychology*, **16**(2), 317-330.
<https://doi.org/10.5964/ejop.v16i2.2097>

Allen, AP, Doyle, C, Commins, S & **Roche, RAP** (2018). Autobiographical memory, the ageing brain and mechanisms of psychological interventions. *Ageing Research Reviews*, **42**: 100-111.

Extra Information and sample questions from the main memory measure we used,

the Episodic Autobiographical Memory Interview EAMI

Irish et al., 2008

Method

- EAMI - episodic



Muireann Irish

Childhood Period (0-15 years)

"I would like you to describe out loud and with as much detail as possible, an event that occurred during this time period that stands out for you."

Description/Free Recall:

	Prompts	Notes	Score
1. Event Detail	What happened? Who was present? Their relationship to you? What was the weather like? What were you wearing? What food/music/transport? Was this a once-off event?		
2. Temporal Specificity	What year? What season? What month? What date? What day of the week? What time of day?		
3. Sensory/ Perceptual Detail	What can you picture/visualise now when you think about this event? What textures/physical sensations? What movements did you make? What sounds/smells/tastes? Is this memory vivid or vague?		

Method

- EAMI - semantic

2. *Can you give the name of the institution you studied/worked at, the location of the institution, and the nature of the study/work you did? How did you get there each day?*

	Response	Score
Name of institution		
Location		
Nature of study/work		
Travel to location		
	Total Score	

3. *Can you recall an important date in this time period such as a birth, death, ceremony? Please give the event, the complete date (month and year) and the location.*

	Response	Score
Event		<i>Do not score</i>
Date		
Month		
Year		
Location		
	Total Score	

Method

- EAMI – auto-noetic awareness

Auto-noetic Awareness Assessment

1. Perspective

(i) Own eyes ___ Third person's perspective ___ Neither ___ No image ___

2. Continuity

(i) Do the images follow in sequence with no gaps in between?

(ii) How would you describe the event as it appears in your mind's eye?

Plays from start to finish with no gaps in between like a video? _____

A series of moving images but there some details are missing in between? _____

One moving image? _____

A series of static, non-moving, images, like photographs in sequence? _____

One overall static, non-moving image? _____

Would you describe it as something else? _____

What? _____

3. Rehearsal

(i) Have you thought about this event since it occurred? Frequently Occasionally Rarely

Never

Other Measures

- RAVLT – Rey Auditory Verbal Learning Test
- Stroop Task – Executive Function
- MOCA (Montreal Cog Assessment) – verbal fluency test
- PANAS – Pos & Neg Affect Scale
- Memory Function Scale (MFS)
- CASP-19 (control, autonomy, QoL)
- Satisfaction with Life Scale (SWLS)
- Beck Depression Inventory (BDI) and STAI (anxiety)
- Geriatric Depression Scale (GDS)

A slide showing some of the brain imaging data from the Recall study:

Imaging Results

Summary

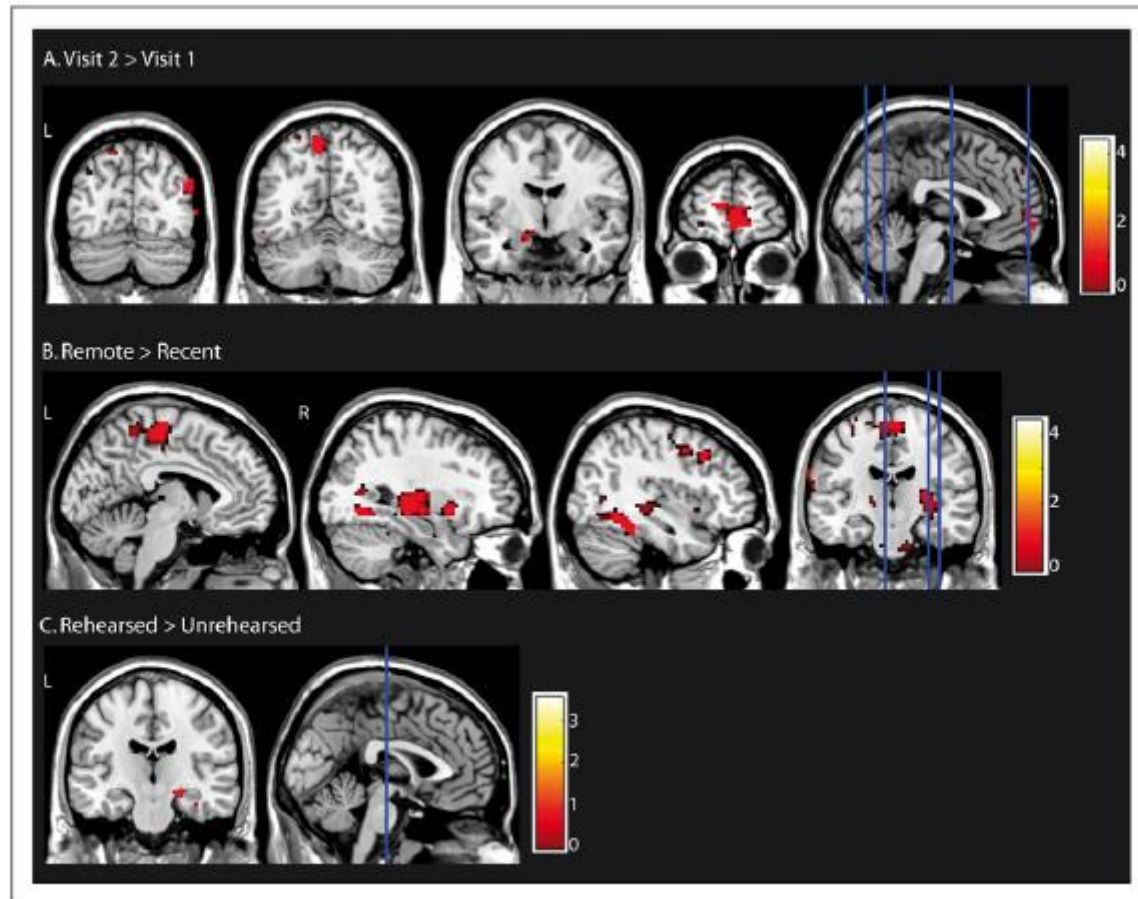


Figure 2. fMRI results depicting hyperactivations for (a) memories retrieved at visit 2 compared to visit 1, (b) memories of remote compared to recent periods, (c) memories that were rehearsed compared to unrehearsed ones, and corresponding color z scales.

- Viard et al. (2023) *BRfN*