Evidence and expertise in discourse-oriented aphasia rehabilitation: LUNA findings and future

KEYNOTE
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LUNA

Language

Underpins

Narrative in

Aphasia

LUNA GRANT 2018-2021

Phase 1 - review the evidence

- *to create theoretical framework to underpin LUNA*

Phase 2 - survey clinicians

- *to understand SLTs' perceived knowledge, skills, confidence and use of discourse analyses and treatment in aphasia*

Phase 3 - develop LUNA materials

- *to co-design a new clinical tool, including manuals for LUNA assessment, treatment, and outcome measurement*

Phase 4 - train clinicians

- *to check that we can train SLTs in the LUNA discourse analysis method, in a single training session, and that they reach the required levels (accuracy and efficiency)*

Phase 5 - test LUNA

- *to check that LUNA treatment works*
- *Is it feasibile and acceptable?*
- *Does it work?*
- *Does the manual support the clinican to deliver the treatment in the same way for everyone?*

Discourse status quo

Improved everyday talking (discourse) is an outcome desired by people with aphasia[1,2]; is considered the endpoint goal of treatment by research trialists[3] and others[4]; but is problematic to measure[3,4] with an uncertain evidence base[5] and demonstrated lack of generalisation from word and sentence treatments[6]. Use in clinical practice is hindered by lack of resources, capability, and confidence[7,8,9], and compounded by a lack of guidance from researchers about what to measure [10,11].
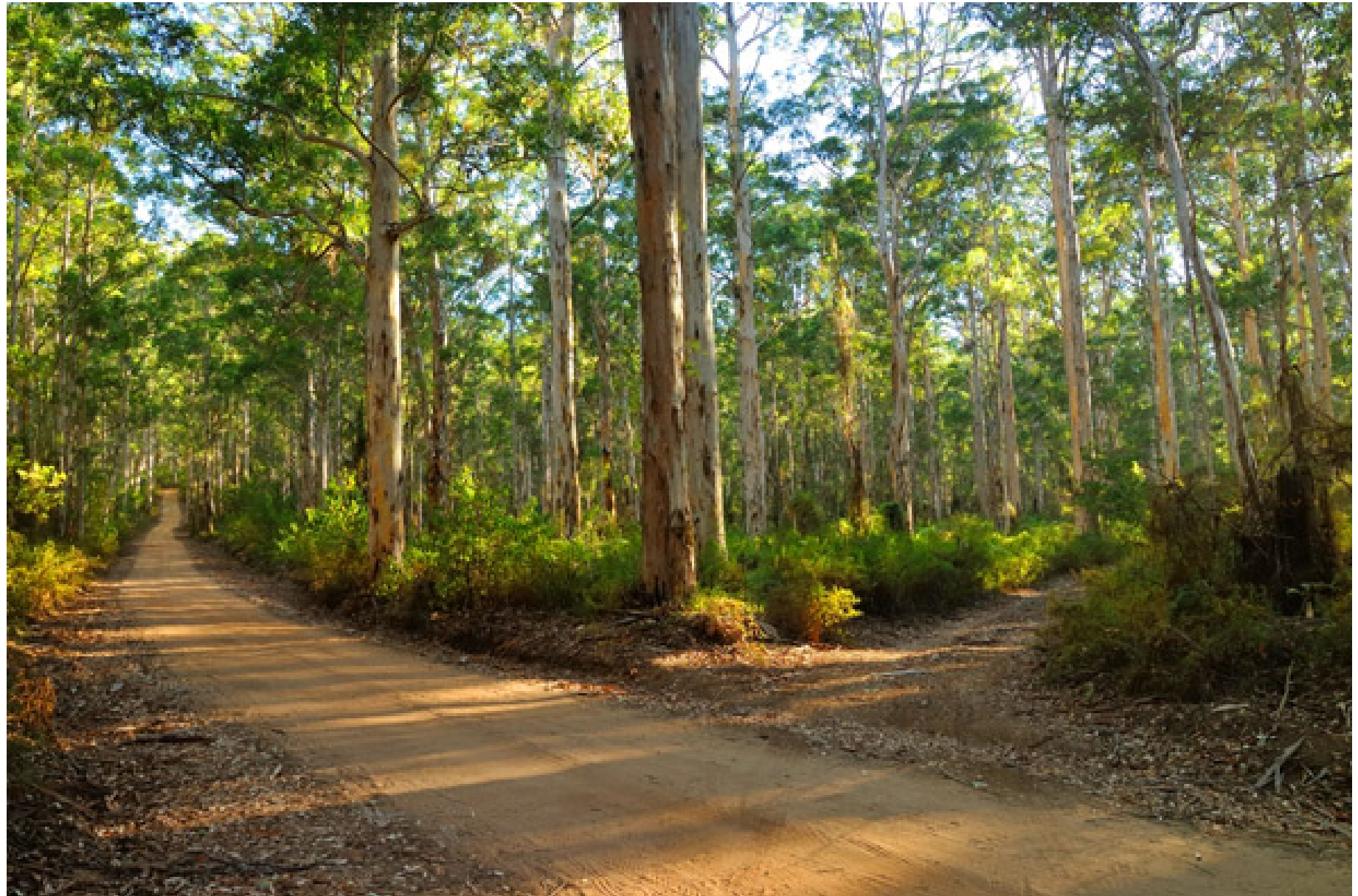
Aim Phase 1

LUNA Phase 1 synthesizes the existing discourse treatments describing the interventions provided and their effectiveness (amongst other aims)

Method

■Scopus, Medline and EmBase databases

■Search terms:['discourse' or 'narrative' or 'story' or 'storytelling' or 'connected speech'] and ['intervention' or 'treatment' or 'therapy'] and ['aphasia' or 'dysphasia'] & a further search using the string ['connected speech'] and ['intervention' or 'treatment' or 'therapy'] and ['aphasia' or 'dysphasia']

■Conducted 25/05/2018 and 18/07/2018

Method continued

■ 268 records identified

■ Included if addressed aphasia, primary data, peer-reviewed, English language, targeted spoken discourse, was direct SLT intervention, assessed discourse as an outcome, was discourse targeted intervention*

■ Study quality appraised and treatments categorized by team members independently and agreed through consensus

*There had to be an explicit statement that **cueing, correction, feedback** or **scaffolding** was provided by the clinician for a particular activity, in order for it to be included as a '*therapeutic activity*' which could then be coded*
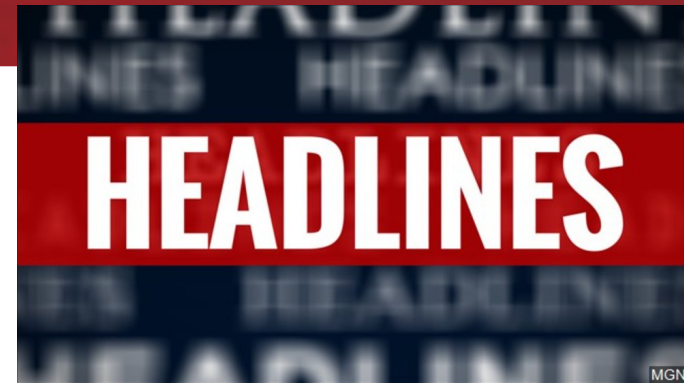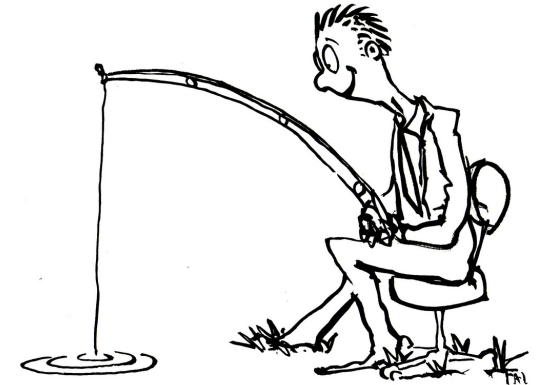
Results Headlines

- **25 papers** reporting on **127 participants** with mostly post-stroke aphasia which is mainly **mild to moderate non-fluent** and with range of TPO but bias towards >1yr
  - WAB AQ used in 14/25 studies; participants ranged in AQ from 9.7-91.8 (but usually ~50-70)

- **6 different categories** of discourse treatments

- **22/25 studies reported improvements**
  - 21 studies improved single word production
  - 8 studies improved sentence production
  - 7 studies improved macrostructure

Results Headlines **Context**
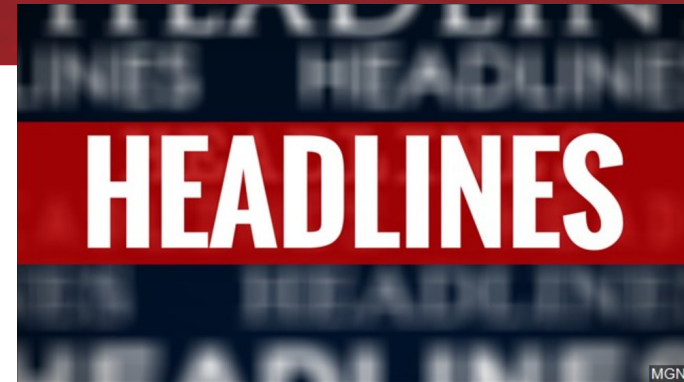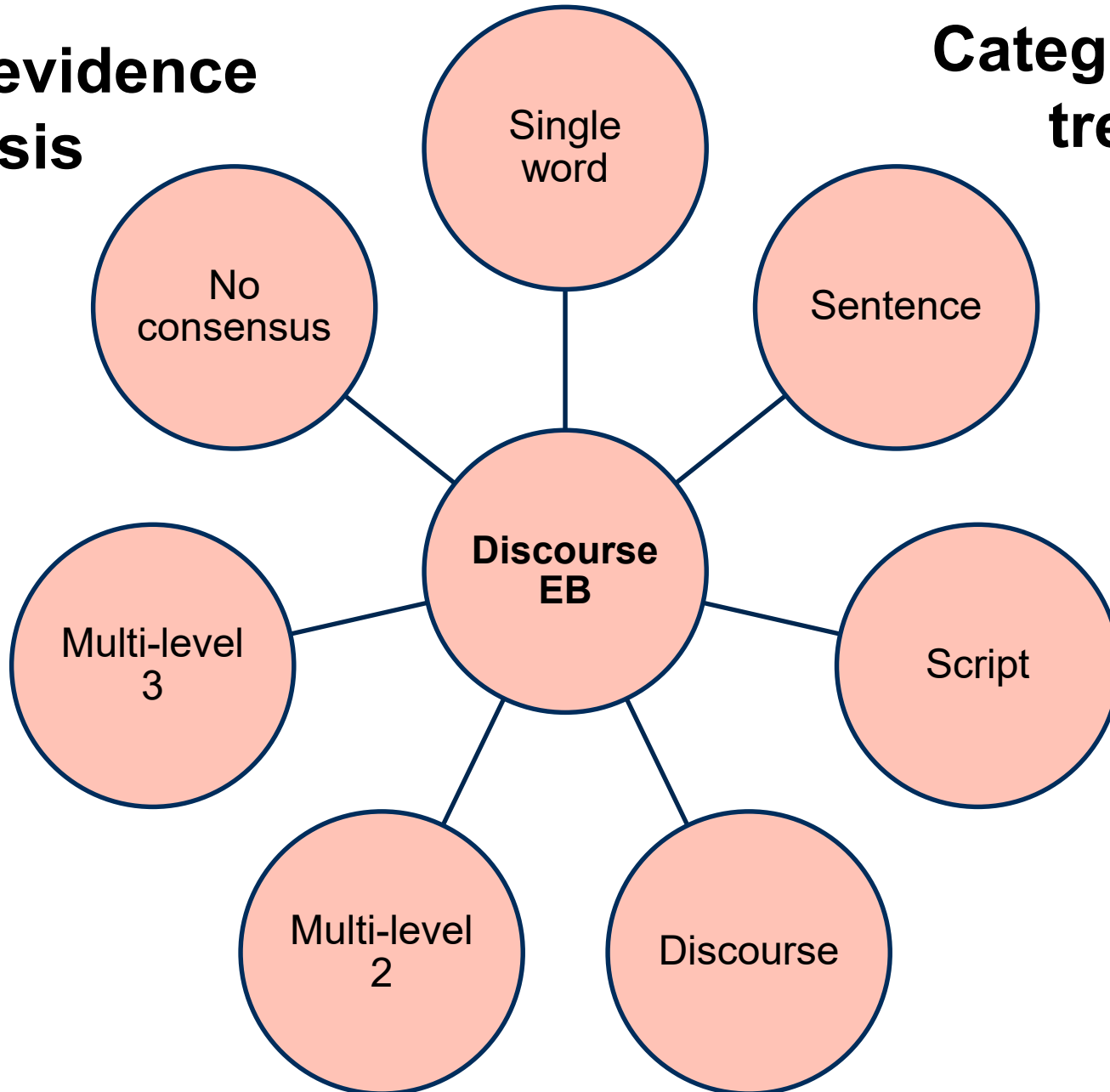
- Low quality evidence

- Inconsistent pattern of assessment
  - Assessment tool, and
  - Levels assessed/ outcomed

- Inconsistent use of inferential statistics

- Inconsistent assessment of maintenance

- Possible publication bias?

LUNA evidence synthesis

Categories of treatment

Single word

Sentence

No consensus

Discourse EB

Script

Multi-level 3

Multi-level 2

Discourse

LUNA evidence synthesis

Distribution of papers

Single word
- 5 studies
- 12 ppl

No consensus
- 2 studies
- 13 ppl

Sentence
- 5 studies
- 30 ppl

25 papers & 127 ppl

Multi-level 3
- 3 studies
- 28 ppl

Script
- 3 studies
- 23 ppl

Multi-level 2
- 5 studies
- 16 ppl

Discourse
- 2 studies
- 5 ppl
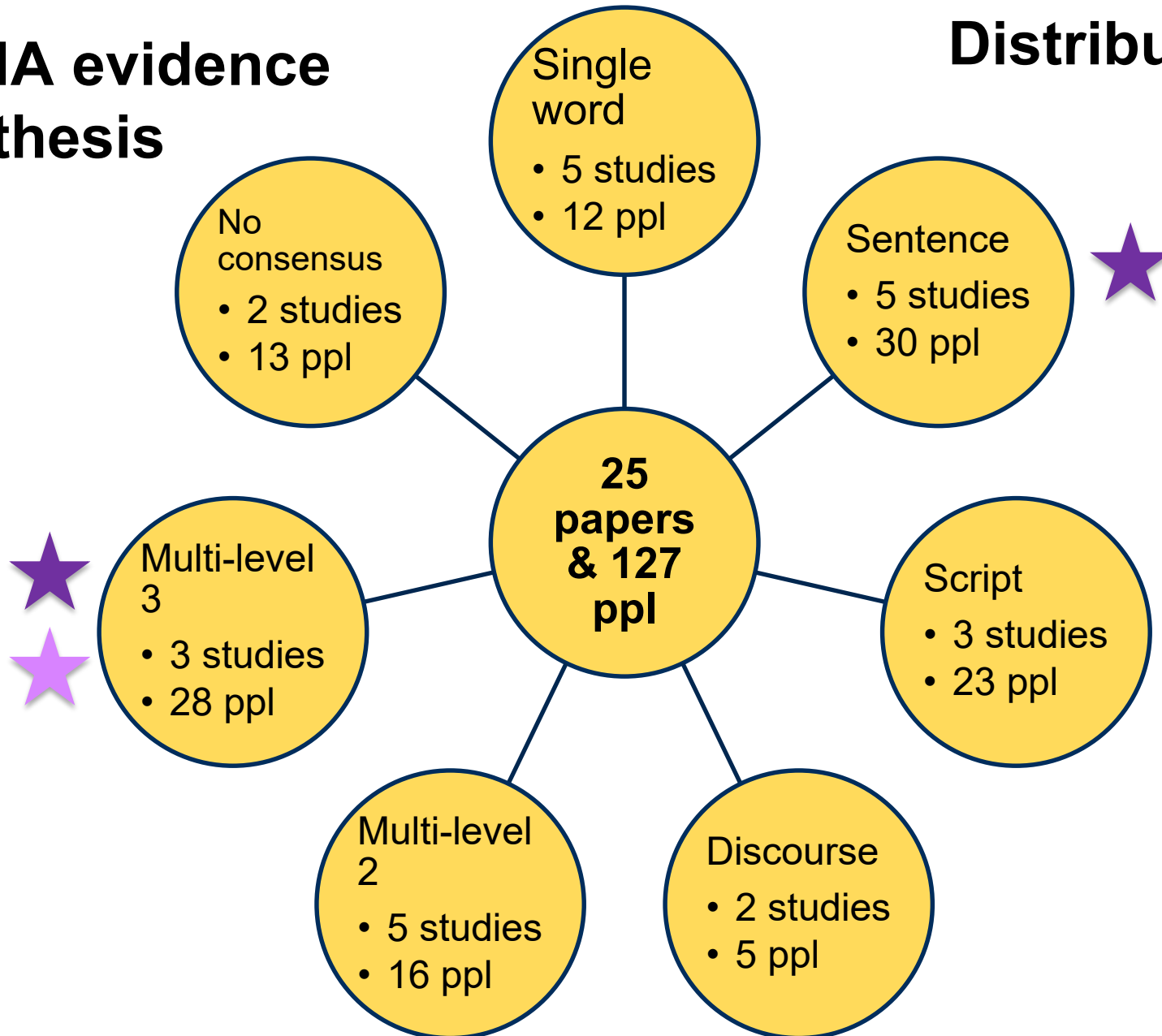
LUNA evidence synthesis

Specific treatment approaches

SFA, phon & orth cueing, target in group discussion & RIPP

AAC-supported storytelling, sentences in narratives

ORLA, CIAT, TUF, M-RET

Discourse treatments

Verbs + VNeST + group conversation, NARNIA

Aphasia Scripts™

PACE, HELPSS, M-RET, self-monitoring, story grammar

Retell of video clips, topic-based discussion
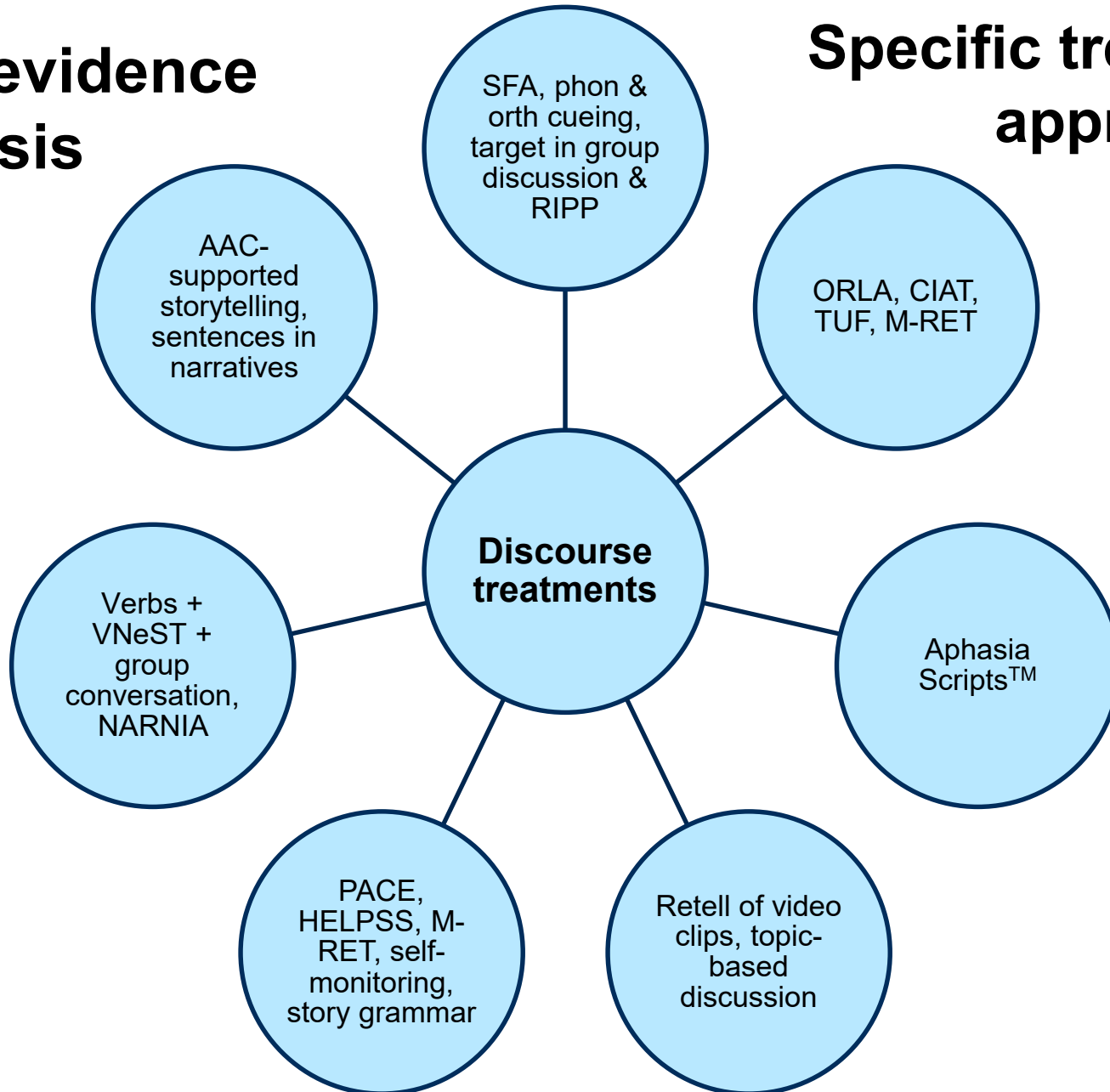
LUNA evidence synthesis

Types discourse used in therapy

Discourse stimuli

Picture description using group PACE, story retelling, doc-based group conversation

ORLA, sentence activities, SVO in games/ stories/ conversation, personal and procedural

Personalised stories, picture sequences, wordless picture books

Personalised monologues and dialogues

Language games, functional scripts, topic based group conversation, picture sequences, events, opinions

Object/ scene and picture sequence description, storytelling, HELPSS + PACE, conversation, personal discourse

Story telling, video-based story retelling

LUNA evidence synthesis

Effectiveness

Single word

No consensus

Sentence

Discourse EB

Multi-level 3

Script

Multi-level 2

Discourse
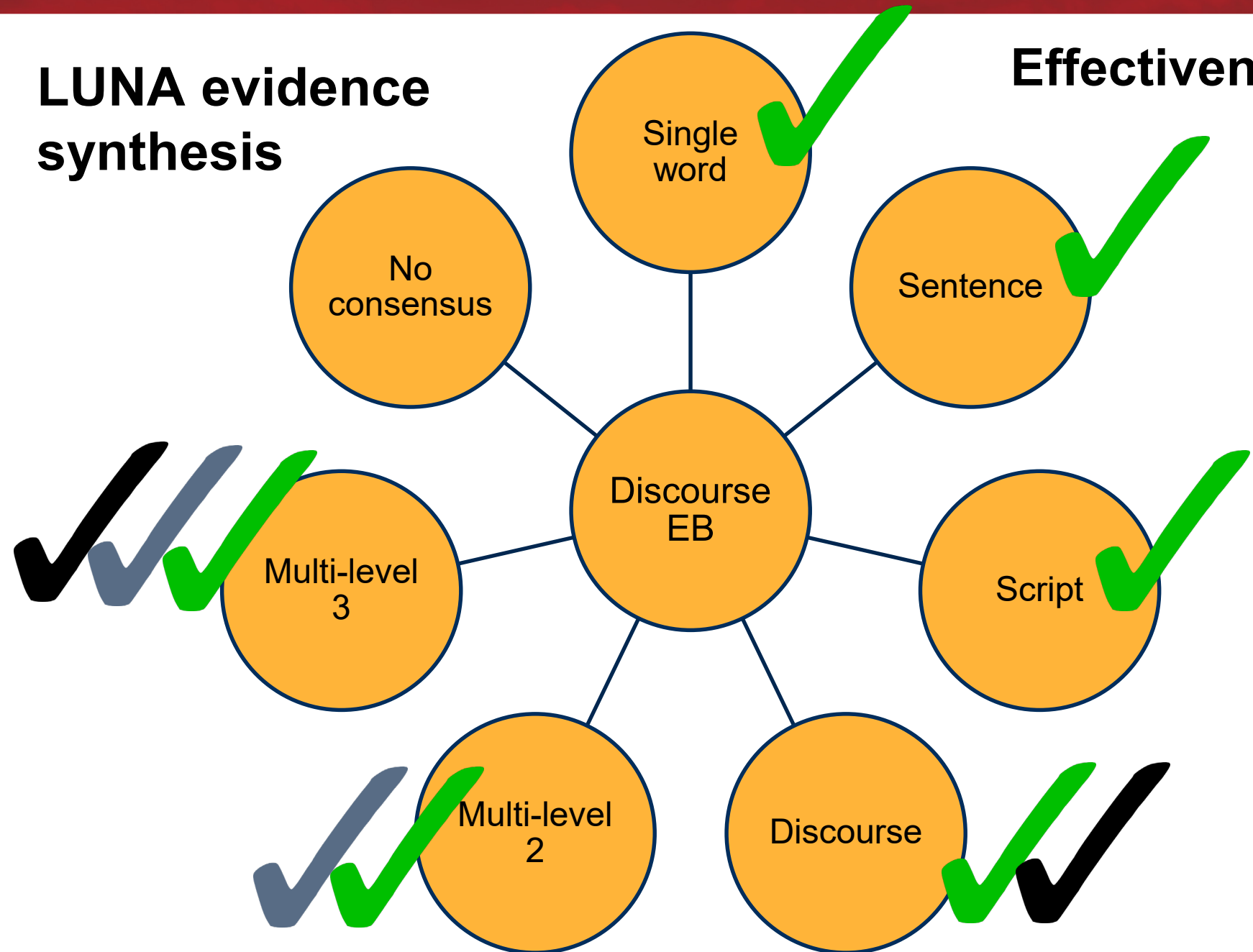
So where does this evidence and these findings lead us?

*So where does this evidence and these findings lead us?*

Clear implications for future research…

Clearly more robustly planned research is needed that
- Employs high quality designs
- Uses statistical analyses
- Outcomes across all 3 levels
- Includes maintenance period
- Intentionally treats all 3 levels
- Uses an agreed set of discourse outcome indicators AND agreed discourse stimuli for assessment AND ideally agreed standardized language and other assessments
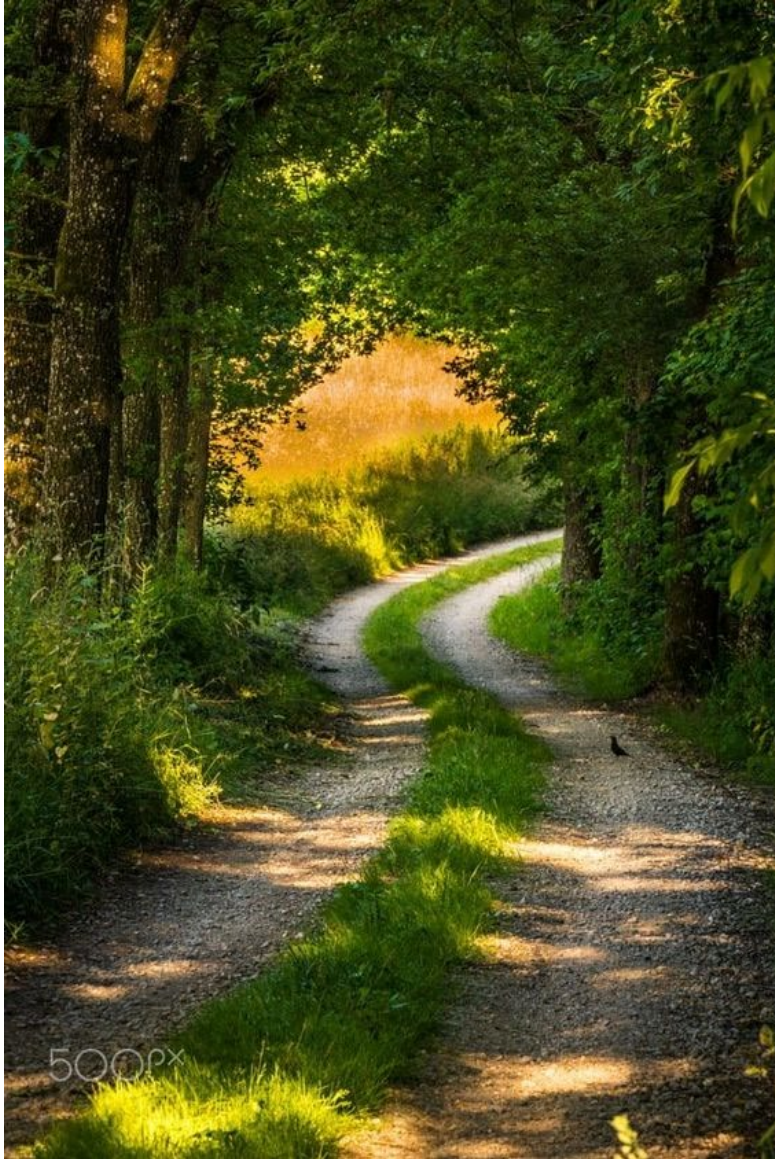
Implications for practice

It would appear that people's single word production almost always improved regardless of treatment type delivered

→ potentially widely applicable

→ single word treatment with a discourse flavour?

Implications for practice

People's sentence and macrostructure functioning require intentional explicit treatment to achieve gain

→ 10 studies offer insights here with some more instructive than others → 2 especially so

Join the LUNA community by subscribing by email (free) to our blog and follow our guided reading approach to these key studies for clinical implications **https://blogs.city.ac.uk/luna/**

Whitworth et al. (2015). NARNIA: a new twist to an old tale. A pilot RCT to evaluate a multilevel approach to improving discourse in aphasia. *Aphasiology, 29*(11), 1345-1382.

Hoover et al. (2015). Effects of impairment-based individual and socially oriented group therapies on verb production in aphasia. *Aphasiology, 29*(7), 781-798.

Aim Phase 2

LUNA Phase 2 investigates SLTs' views and reported discourse analysis practices in aphasia rehabilitation, views on clinical feasibility, and perceived facilitators and barriers to discourse analysis

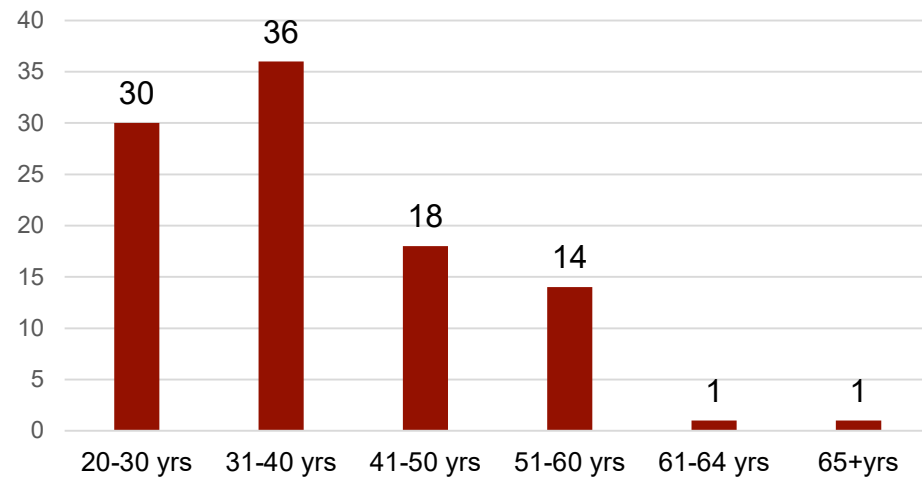Best Research Evidence

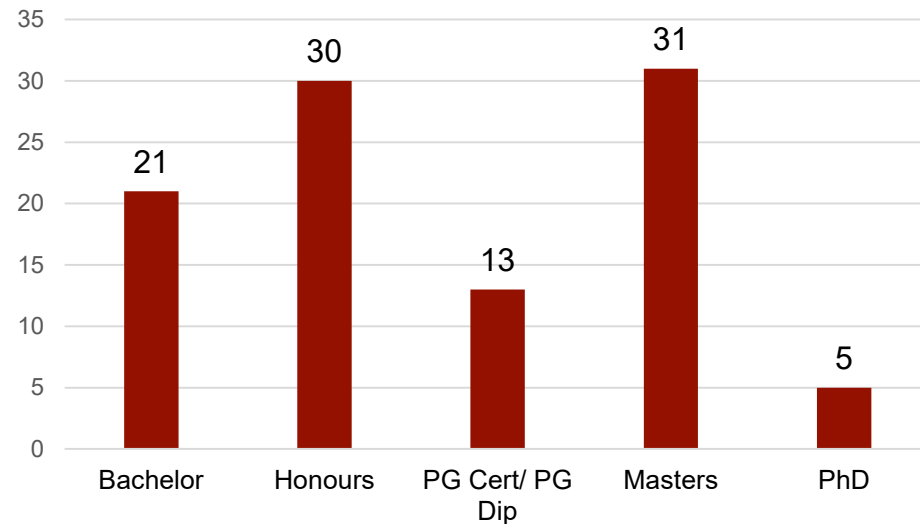Clinical Expertise

Patient Values

EBP

Methods

- Recruited via national professional associations (RCSLT & BAS), NHS, and via twitter
- SLTs practicing for at least 6 months with patients with aphasia in the UK
- Online survey open for 16 weeks (Aug-Dec2018)
- Adapted from Bryant et al. 2017 and augmented with questions based on the Theoretical Domains Framework (Cane et al., 2012)
- 49 questions: 14 demographic & background; 35 DA views and practices
- Descriptive and inferential statistics, and content analysis
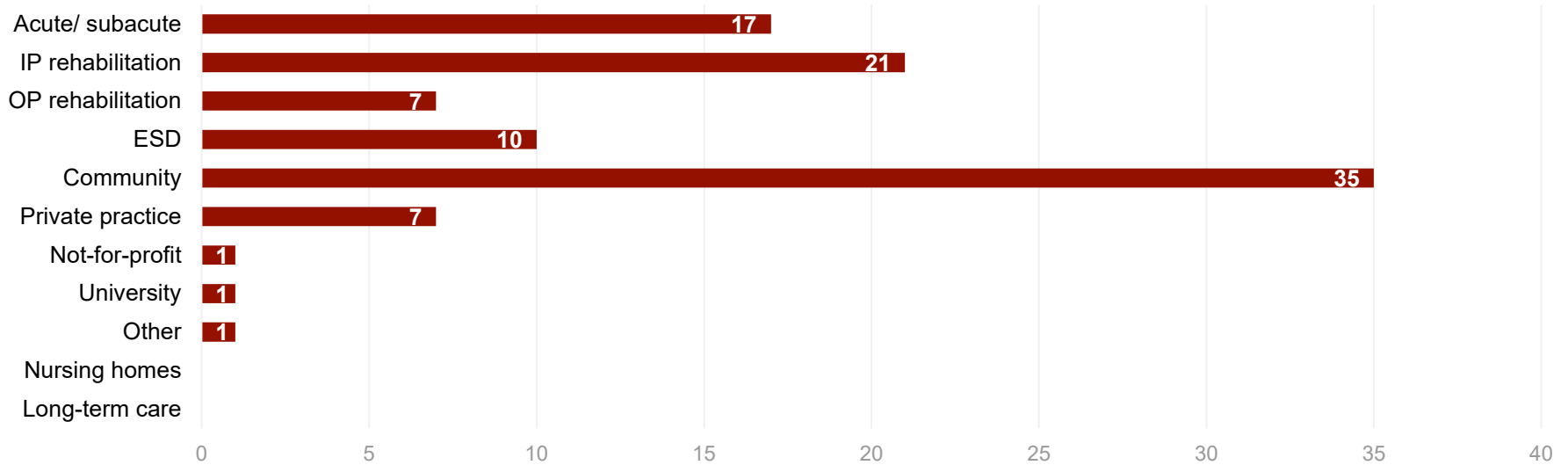
Sample characteristics (N=211)

Age

A bar chart titled "Age" with values:
- 20-30 yrs: 30
- 31-40 yrs: 36
- 41-50 yrs: 18
- 51-60 yrs: 14
- 61-64 yrs: 1
- 65+yrs: 1

Education

A bar chart titled "Education" with values:
- Bachelor: 21
- Honours: 30
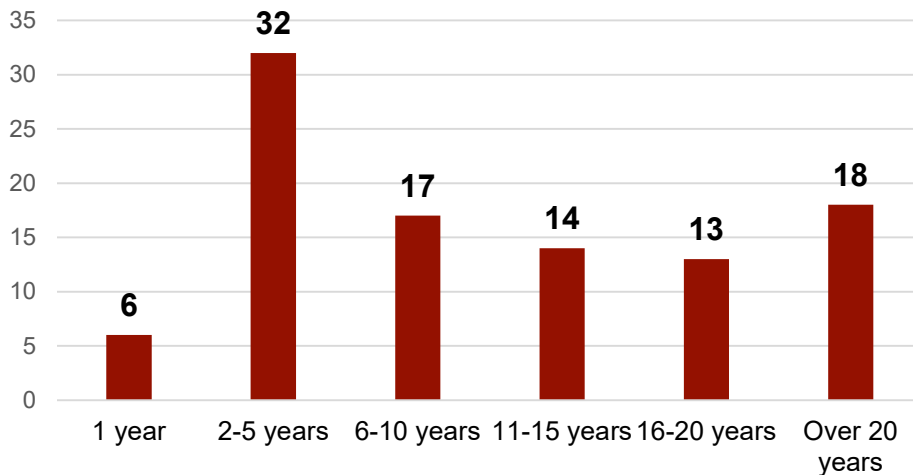- PG Cert/ PG Dip: 13
- Masters: 31
- PhD: 5

96% female, 4% male

Range of geographical areas: 15% Greater London; 18% SE England; 14% SW England; 16% Midlands & E England; 28% N England; 5% Scotland; 2% NI; 2% Wales
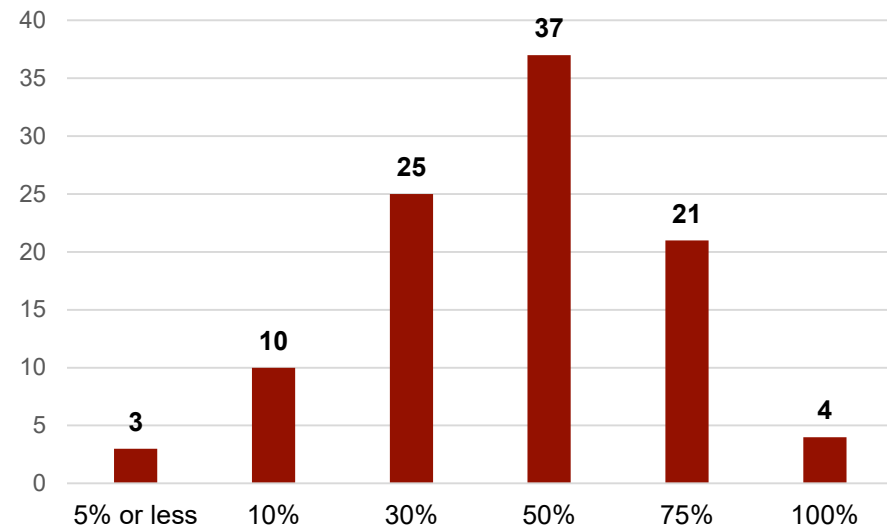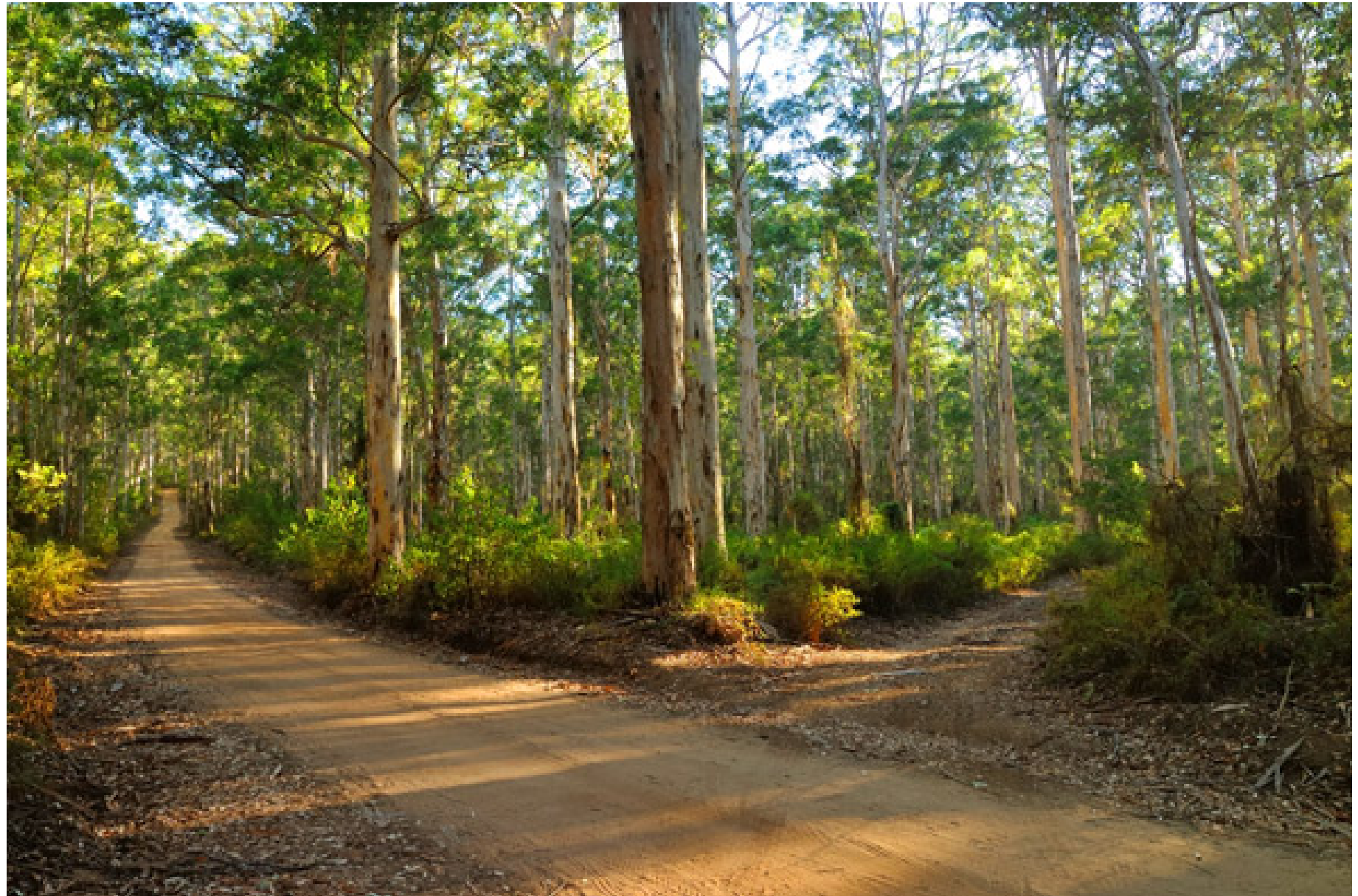
Main work setting

Setting	Count
Acute/ subacute	17
IP rehabilitation	21
OP rehabilitation	7
ESD	10
Community	35
Private practice	7
Not-for-profit	1
University	1
Other	1
Nursing homes	
Long-term care	

Years aphasia experience

Experience	Count
1 year	6
2-5 years	32
6-10 years	17
11-15 years	14
16-20 years	13
Over 20 years	18

% Aphasia on caseload

%	Count
5% or less	3
10%	10
30%	25
50%	37
75%	21
100%	4

↓ Capability

↑ Experience
↑ Motivation
↑ Opportunity

Genre and transcription findings

1. Use: profiling and goal setting > diagnosis and OM
2. 70% SLTs collect discourse within initial Ax battery
3. 96% SLTs used standardized test picture description and 87/88% use personal/ procedural recounts
4. <33% SLTs record samples
5. Transcription in real time most favoured approach (69%)

How often do you transcribe?				
2	3	29	48	18

■ Always ■ Usually ■ Sometimes ■ Rarely ■ Never
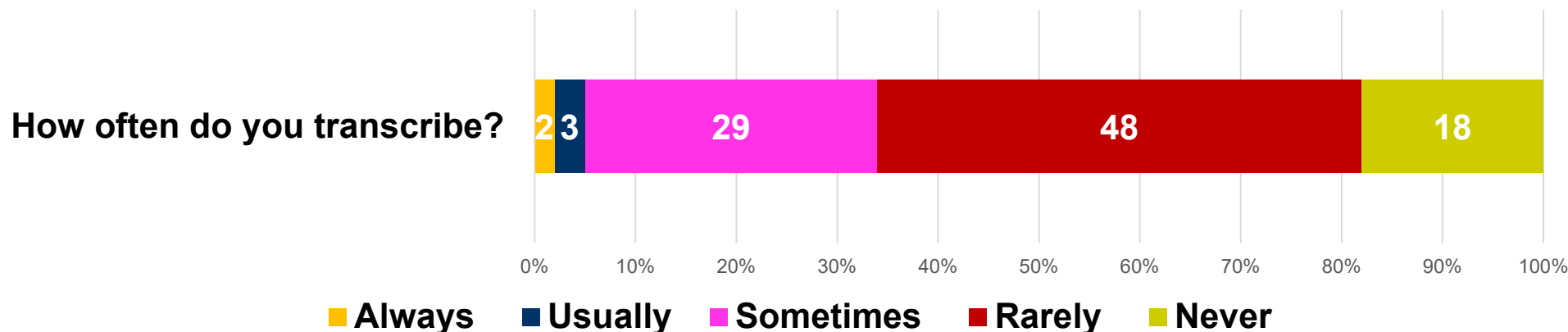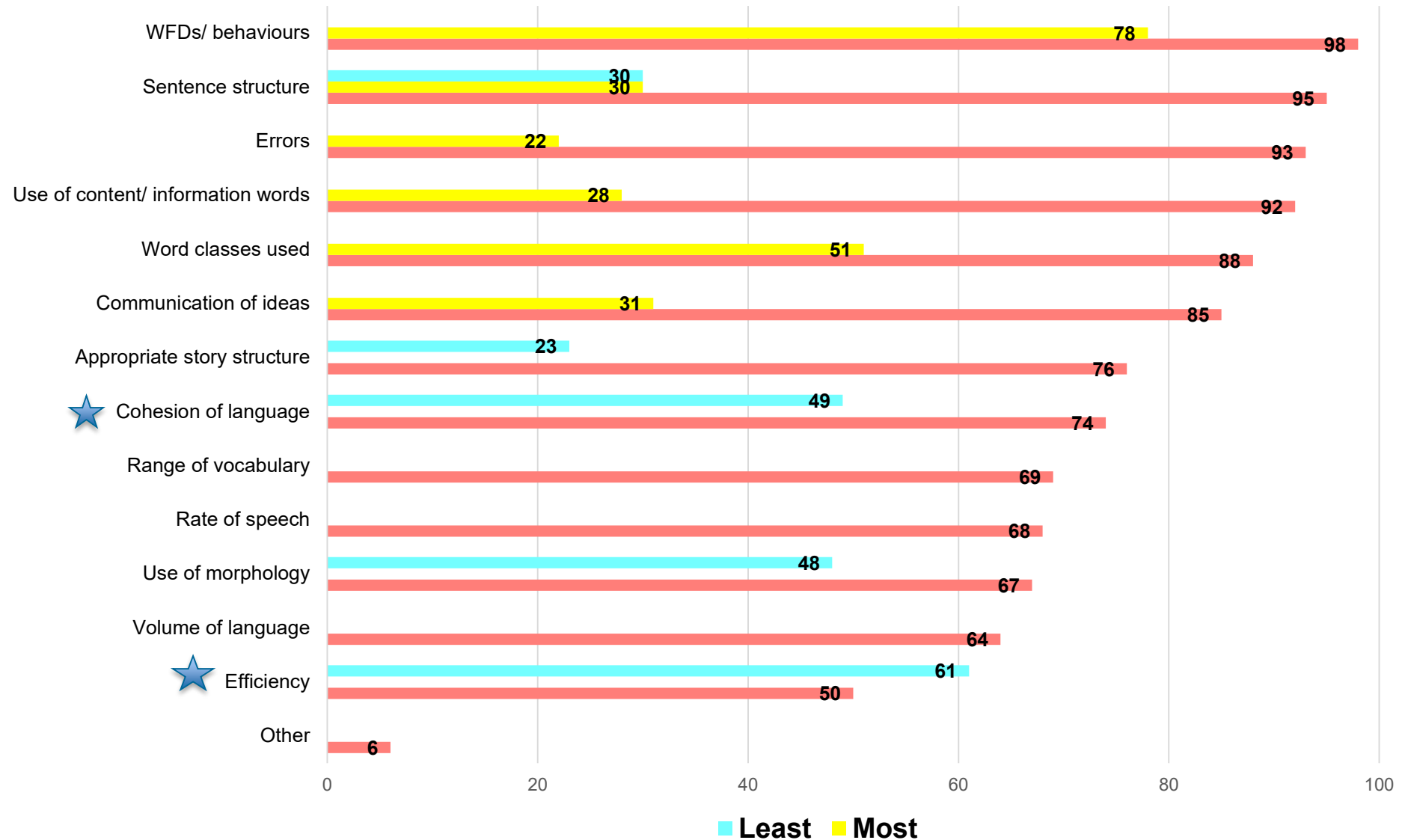
Analysis findings

95% SLTs make clinical judgments

16% SLTs only conduct detailed analysis

Most (61%) follow no specific procedure

Manual counting (words or structures) most popular at 53%

Discourse behaviours analysed & confidence

Category	Most (Yellow)	Least (Cyan)	Confidence (Pink)
WFDs/ behaviours	78		98
Sentence structure	30	30	95
Errors	22		93
Use of content/ information words	28		92
Word classes used	51		88
Communication of ideas	31		85
Appropriate story structure		23	76
Cohesion of language ⭐		49	74
Range of vocabulary			69
Rate of speech			68
Use of morphology		48	67
Volume of language			64
Efficiency ⭐		61	50
Other			6

■ Least ■ Most

Clinicians also used discourse to analyse

A broader range of macro-structure discourse level behaviours
■ completeness, sequencing, coherence, gist

AND
■ awareness and insight
■ strategy use
■ effectiveness of functional ability, and
■ other influences (cognition, emotion, and co-occurring
  communication disorder or sensory impairment)

Timed clinical feasibility findings

60-120 minutes = general assessment practices

DA needs to take 60-90 minutes max

In the current economic climate in the NHS, there are significant resource implications linked to aphasia work and therefore discourse analysis. People with Aphasia are receiving less therapy than in previous generations. Assessment of discourse needs to be directly linked to clients goals in order to justify any time spent on it. Assessment, transcription and analysis needs to take under one hour in total. (ID#110)

- Time constraints (78%)
- ↓ Training (39%)
- ↓ Resources/equipment (38%)
- Variable workplace support & encouragement
- Patient severity
- SLT judgment of N/A

- No set protocol (84%)
- ↓ Expertise (43%)
- ↓ Confidence (47%)
- Some negative emotional experience associated with DA (confusion & frustration)

Facilitators

- DA within SLT role (90%)

- DA important in overall clinical management (83%)

- 76% want training

- 74% want assistive tools

- 71% want time

- 54% want new analytical tools

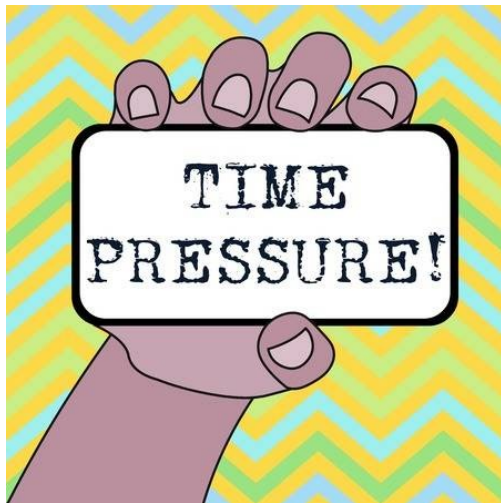# So what have we found? How does it compare?

More UK SLTs are on the road less taken

And there is more use of discourse analysis as an assessment and as an outcome measure

Barriers for UK SLTs are similar to existing studies

The lack of this is a concern

Implications for future research

- Consider the **local context** in EBP

- **Consensus on a protocol** of ideal versus essential discourse measures for *assessment and outcome measurement** for aphasia rehabilitation

- Develop/ refine existing **assistive tools** for use across the discourse analysis process

- Further research into the impact of **training** on clinicians' discourse analysis skills and belief in capability
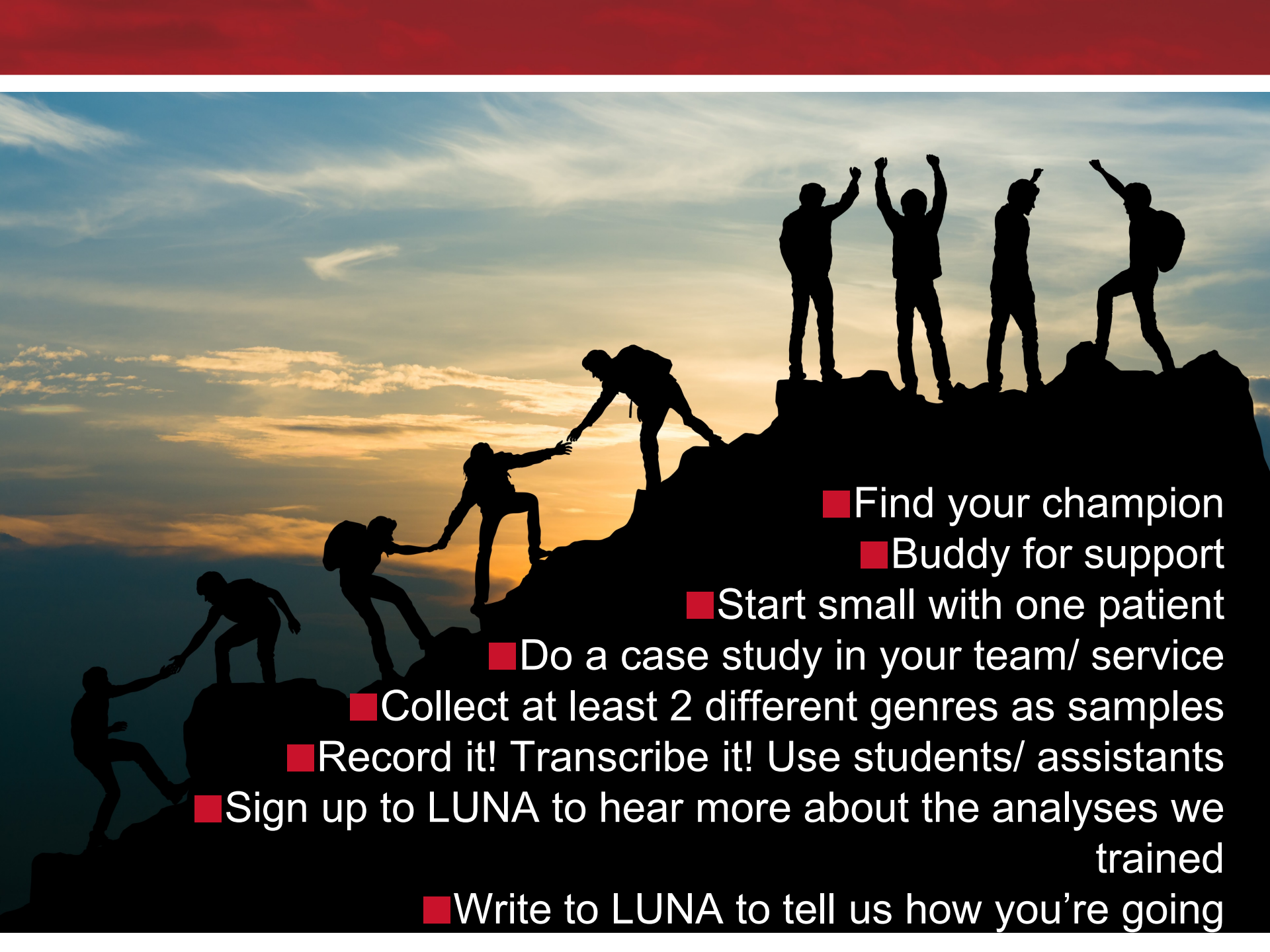
■Find your champion
■Buddy for support
■Start small with one patient
■Do a case study in your team/ service
■Collect at least 2 different genres as samples
■Record it! Transcribe it! Use students/ assistants
■Sign up to LUNA to hear more about the analyses we trained
■Write to LUNA to tell us how you're going

■Get discourse Ax and/or Trx on your PDP and/or service agenda

■Use existing mechanisms e.g. journal club or projects for promoting discourse in the workplace

■Seriously discuss what possible solutions there are for time

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The final word goes to one of our survey respondents

I think the LUNA project is so very important as every stroke patient you meet says "I just want to be able to talk again". In reality this means discourse, but my pre-reg training was very focused on single word level interventions and not discourse, so its hard to know a time-efficient and clinically evidence-based approach for discourse analysis. I'm highly motivated to do it, but time-poor and would really value training. I think its wonderful that LUNA is being conducted. Thank you (ID#209)
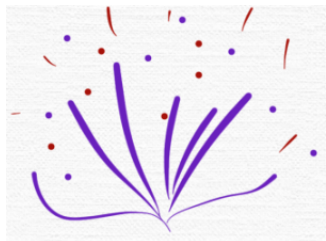
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