Verbal reasoning, cognitive-communication skills and return to work outcomes in adults with severe Traumatic Brain Injury at two years post-injury

Presented by

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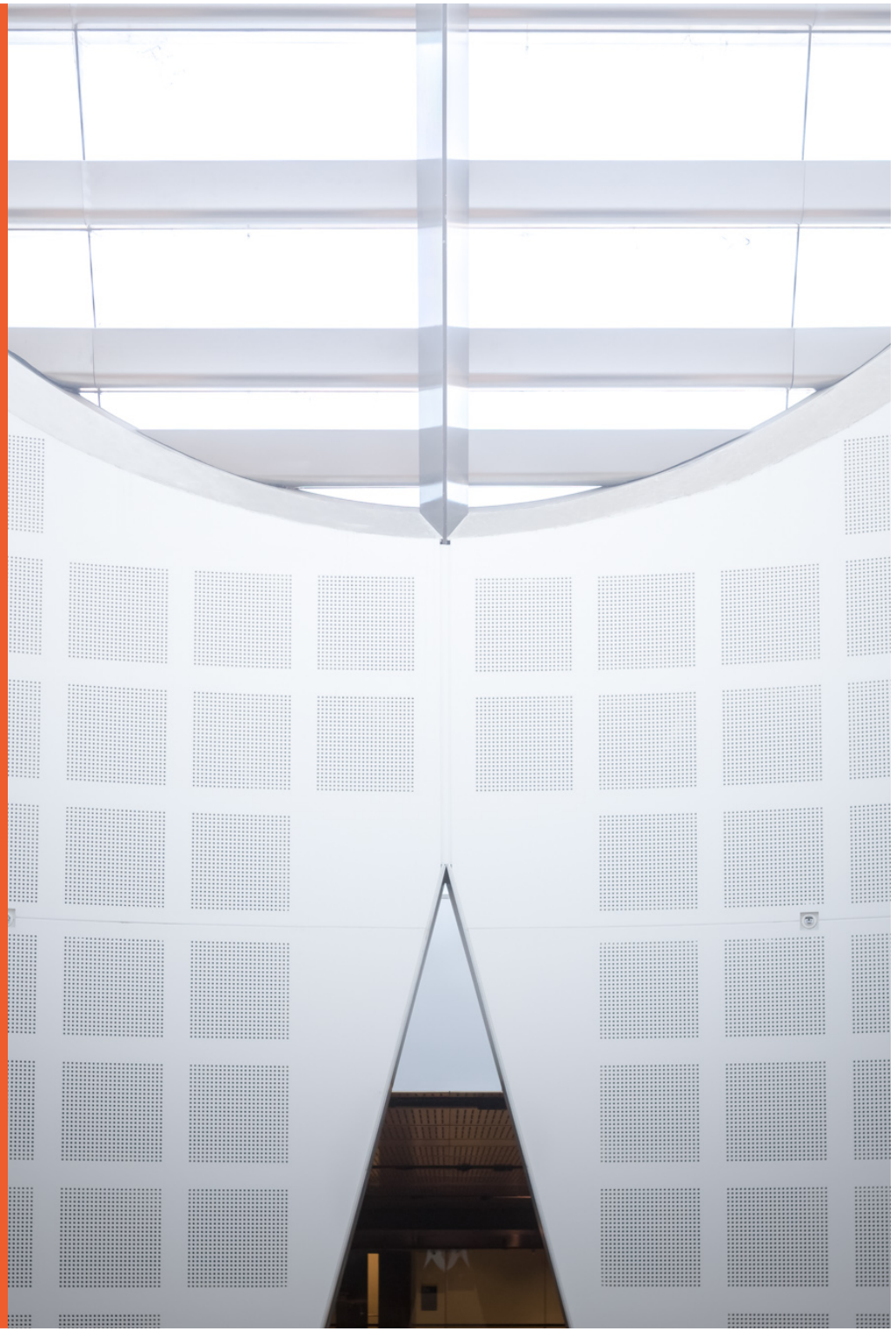


Traumatic Brain Injury (TBI)

1. Background and Rationale

Results in **diffuse damage** to the brain [1]

May lead to **cognitive-communication skills** causing difficulties with verbal reasoning[2]

E.g. Inflexibility in generating solutions

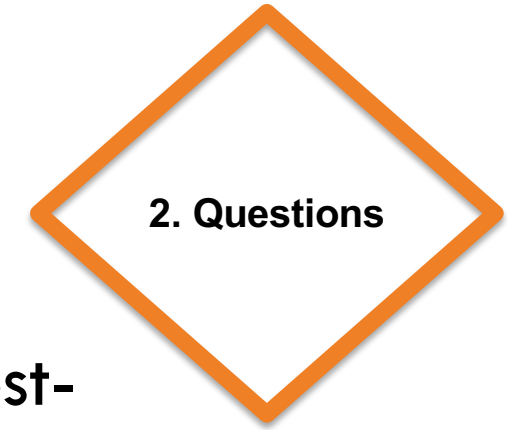
Causes long-term **poor psychosocial outcomes** [3]

32% to 46% of adults with TBI **return to work** at 2 years post-injury [4]

Vocational rehabilitation is a central goal

Participation Impacted by functional communication difficulties [5, 6, 7]

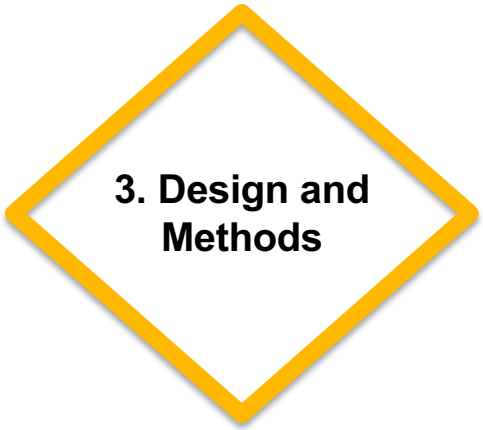
Research questions



1. In adults with severe TBI at two years post-injury, do cognitive-communication and verbal reasoning skills differ between **employment** groups?

2. In adults with severe TBI at two years post-injury, are there significant differences in demographic and injury-related characteristics between **employment** groups?

Design & Methodological approach



Observational cross-sectional multi-site study

Functional Assessment of Verbal Reasoning and Executive Strategies (FAVRES)

3. Design and Methods

FAVRES Task	Description
1. Planning an event	Analyse newspaper listings to choose an appropriate event for a child's birthday
2. Scheduling	Organise daily activities according to priorities and time constraints
3. Making a Decision	Choose an appropriate gift based on information from a conversation
4. Building a case	Write a complaint with solutions based on issue raised in a monologue

Scores			
1. Accuracy	**2. Rationale**	**3. Time**	**4. Reasoning**
Correct choice of response	Reasons provided for choice of answer	Length of time to complete task (minutes)	Assesses reasoning and problem solving process

Return to Work (RTW) outcome

3. Design and Methods

Employed: at preinjury level
based on occupation title and workload

Employed with modification: reduced responsibilities and/or time fraction.

Unemployed: not working or on leave

Procedure

4. Procedure and Analysis

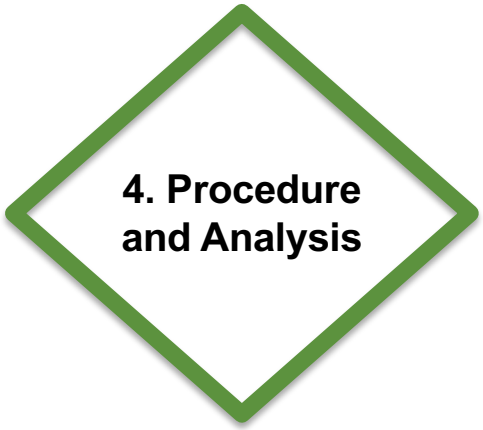
Participants recruited from 3 brain injury units

- ☑ Aged 16 to 65 years old
- ☑ Sustained a severe TBI defined as
  - Global Coma Scale (GCS) ≤ 8 and/or
  - Post Traumatic Amnesia (PTA) > 7 days
- ☑ Employed preinjury

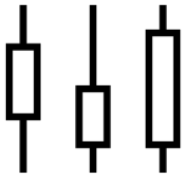
Assessments at 2 year post-injury

- Self-reported employment variables
- Functional Assessment of Verbal Reasoning and Executive Strategies (FAVRES)

Analysis



Descriptive statistics



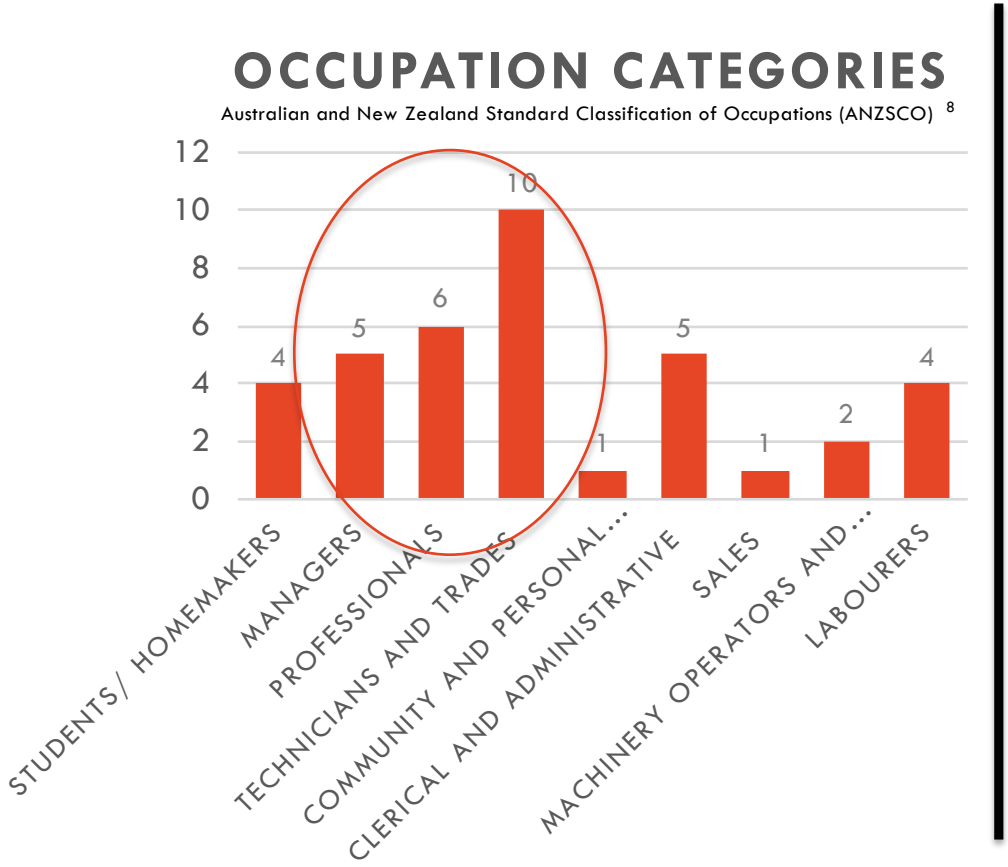
Between-group analyses using non-parametric tests

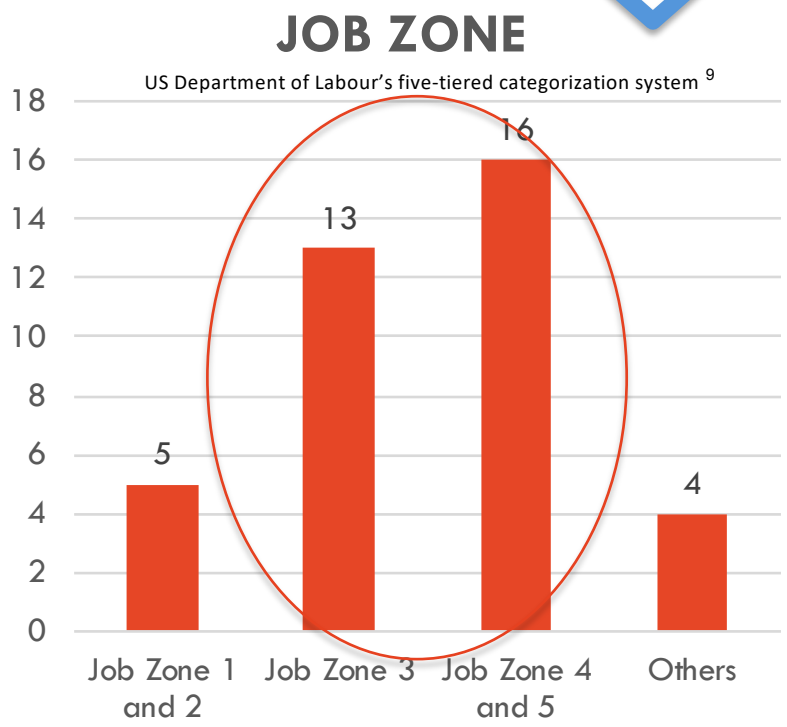
α

An alpha level of 0.05 was applied

Occupation characteristics

5. Findings



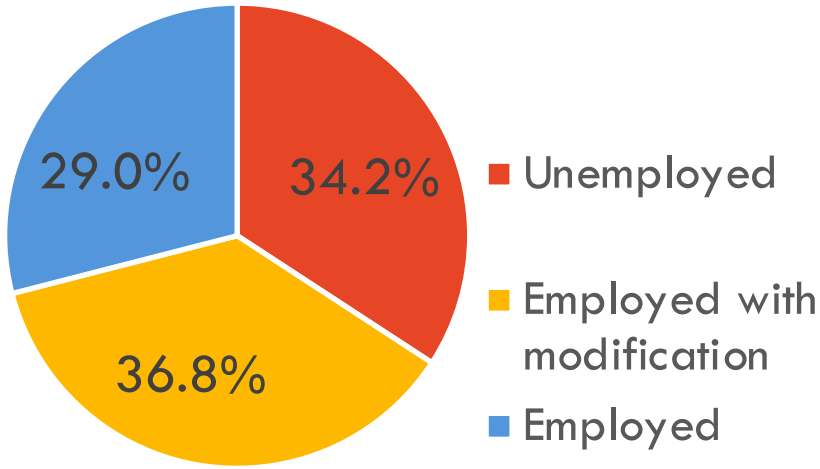


Participants' jobs require higher degree of training and communication demands.

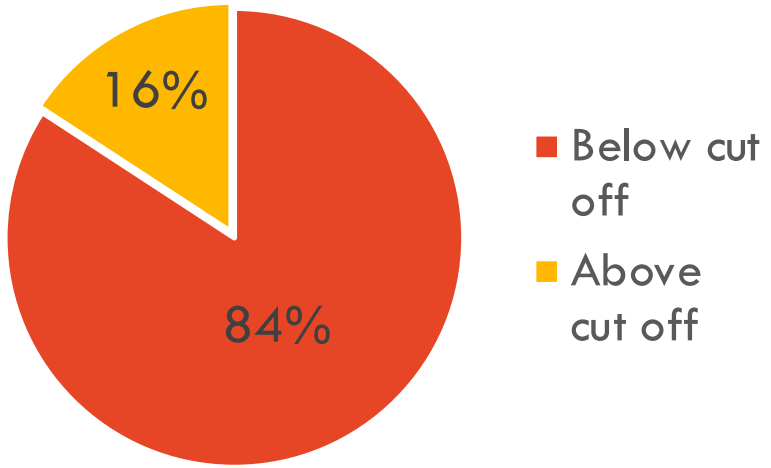
Descriptive statistics

5. Findings

Return to work (RTW) outcomes



FAVRES Cut-off Score



Cognitive-communication impairments and poor RTW outcomes continue to persist in adults with severe TBI at two years post-injury

FAVRES Total Scores

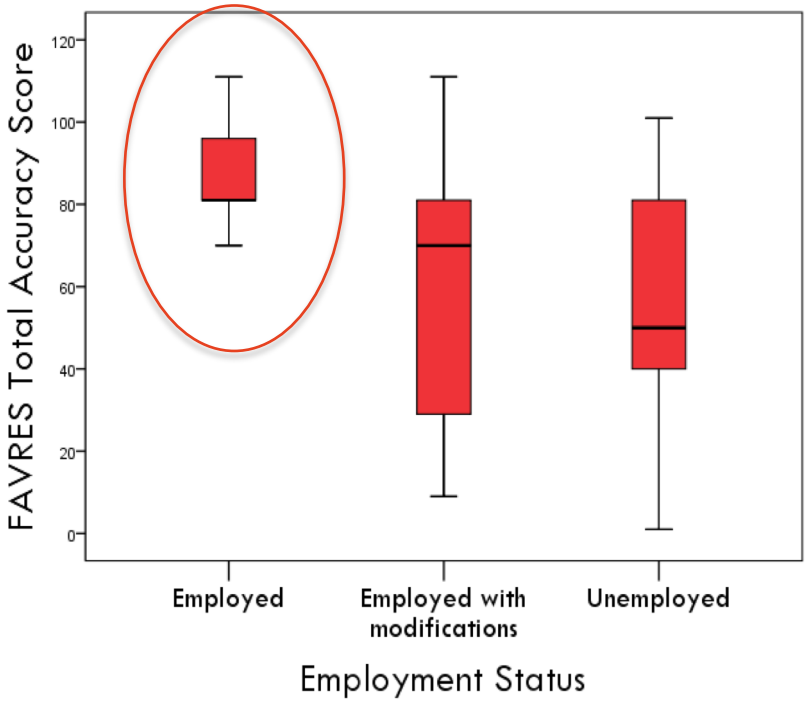
5. Findings

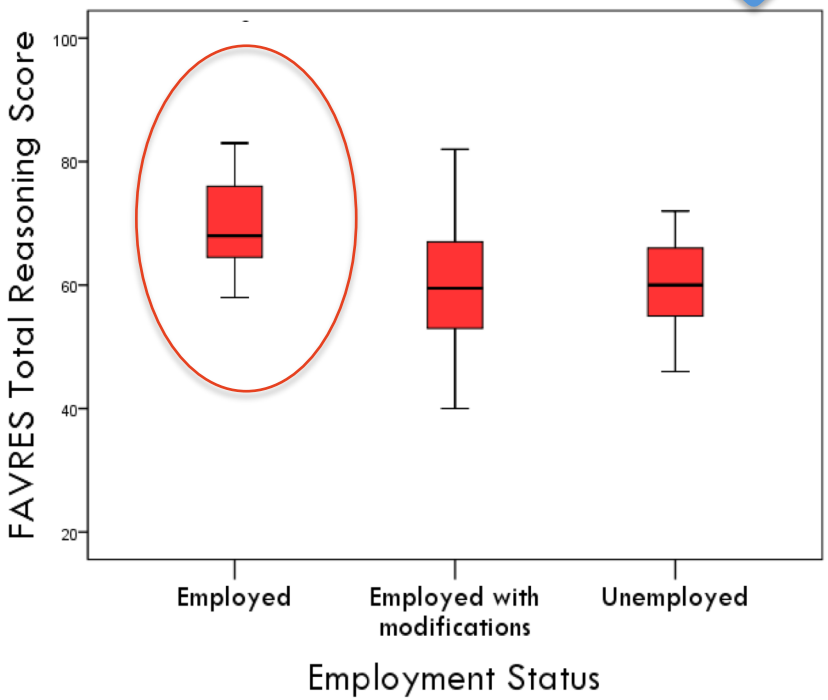
FAVRES Total Scores	E, EM and UE
Accuracy	
Rationale	
Time	
Reasoning	

FAVRES Total Accuracy and Total Reasoning scores significantly discriminated between groups.

FAVRES Total Scores

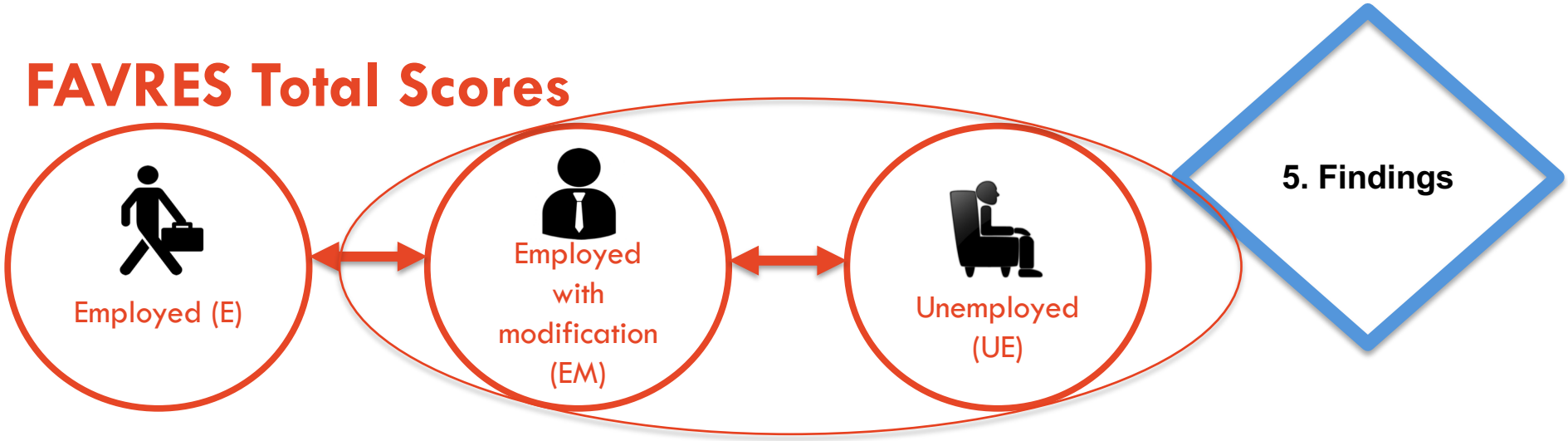
5. Findings





Stronger verbal reasoning and cognitive-communication skills seem to contribute to better RTW outcomes.

FAVRES Total Scores



FAVRES Total Scores	E and EM	EM and UE	E and UE
Accuracy			
Reasoning			

Those employed with modification (EM) continue to have cognitive-communication deficits similar to those unemployed (UE).

Demographic and injury characteristics

5. Findings

Employed

Less severe injury

↓ Post Traumatic Amnesia

Higher educational level

↑ Years of education

A complexity of pre- and post-injury characteristics contributing to success in the workplace.

Clinical Implications

Functional communication skills is associated with positive employment outcomes

Some adults with TBI who are **working with modification** continue to have poor cognitive-communication skills

Speech pathologists should have continued involvement in the rehabilitation process in the post-acute stages of recovery

The **FAVRES** may help clinicians to identify rehabilitation goals to support one's vocational reintegration.

References

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