

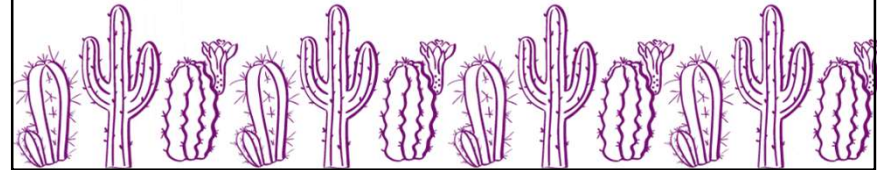
# Approaches to Augmentative and Alternative Communication Design by Speech-Language Pathologists

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THE UNIVERSITY OF ARIZONA  
Graduate & Professional  
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## Background Information

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- Examined the consistency with which neurotypical adults and adults with severe TBI organized semantic information.
  - Neurotypical adults used a superordinate-subordinate hierarchy.
    - Focus group
  - Individuals with TBI were less consistent and more idiosyncratic than their peers in placing exemplars within ordinate and superordinate categories.
- With repetition of the experimental task, some individuals with TBI achieved higher general consensus scores, but did not reach a level comparable to their peers.
- Authors argued that participants' consistency across sessions and agreement with the general consensus warrant further examination.

Brown, Hux, Kenny, & Funk, 2015

So what?

Access

Consistency

■ **Theme:** a conversational topic

Background  
Information  
Definitions



Current Study

My project aims to understand **how SLPs approach AAC vocabulary selection and organization when using grid displays.**

- Lack of research in how SLPs make decisions regarding AAC for these populations.
- If SLPs disagree and/or demonstrate inconsistency over time, that presents problems for those who rely on SLPs to help them with their communication.
- This type of research can inform classroom and clinical instruction in master's programs, creating more consistency and quality of service.

## Why SLPs?

- Scope of practice
- (In)consistency across time or among SLPs may have implications for individuals who are trying to access semantic items using AAC devices

## Future Directions

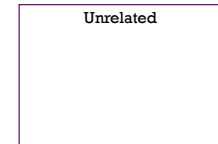
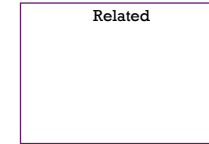
## Research Questions

1. How do SLPs **organize** a set of pictures belonging to a single theme in a grid?



1	2	3	4	5
6	7	8	9	10
11	12	13	14	15

2. When given a set of pictures, which words do SLPs **select** based on importance?



3. Is vocabulary organization and selection **consistent among SLPs**?

4. Is vocabulary organization and selection **consistent over time**?



Procedures

## Procedures: Participants

Actively  
working

Nationally-  
certified, state-  
licensed SLPs

Serve adults at  
least 25% of  
the time

Have reliable  
Internet access

## Procedures: Recruitment

SIGs

Social Media

Flyers

Word of Mouth



## Procedures: Logistics

- Qualtrics software
- 3 experimental sessions over 3 weeks
  - Each session 1 week apart
  - Remotely

2019 JULY						
SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			



## Procedures: Tasks

- 2 Tasks
  - Vocabulary selection (vital, related, unrelated)
  - Vocabulary organization (into a grid)
  - 15 themes
  - 15 items/theme

## Procedures: Stimuli

- Pictures
  - Reduce confusion (e.g., nail on hand vs. nail and hammer)
  - Literacy concerns
  - Commonly used
- Validated stimuli with undergraduate students

## Procedures: Questions

- First session
  - Inclusion/exclusion criteria
  - Consent
  - Demographic information
  - Caseload information
  - Background information (e.g., "did you receive instruction related to AAC during your graduate program?")
  - Tasks
- Second session
  - Tasks
- Third session
  - Tasks
  - Questions about decision-making

## Data Analysis



## Data Analysis

Dependent variable 1 compares vocabulary selection and organization **across participants**.

- All participants who complete session 1 will be included
- Variance in the stimulus item placed in each grid space and in each category\*

Dependent variable 2 compares participants to themselves **over time**.

- Overall consistency proportion (OCP)

Brown, Hux, Kenny, and Funk (2015)

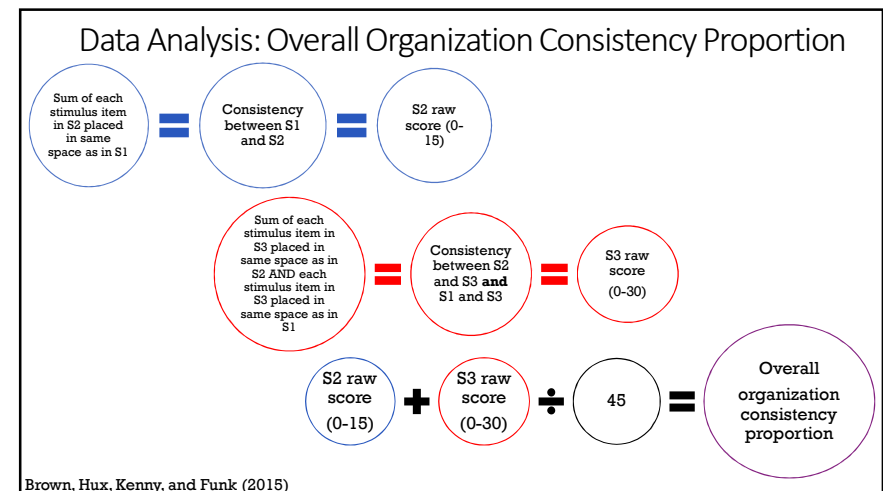
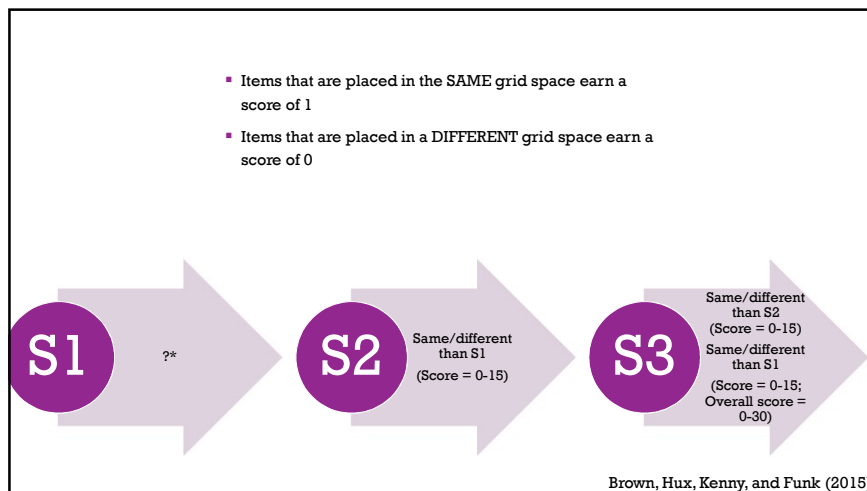
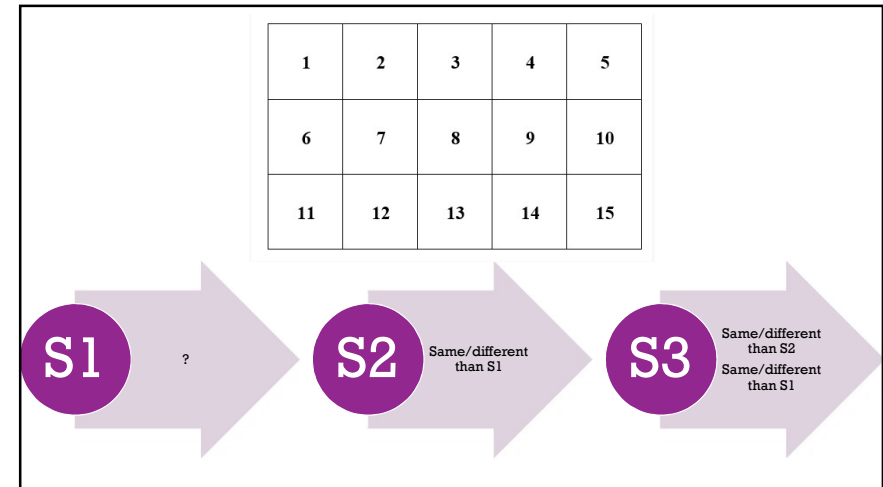
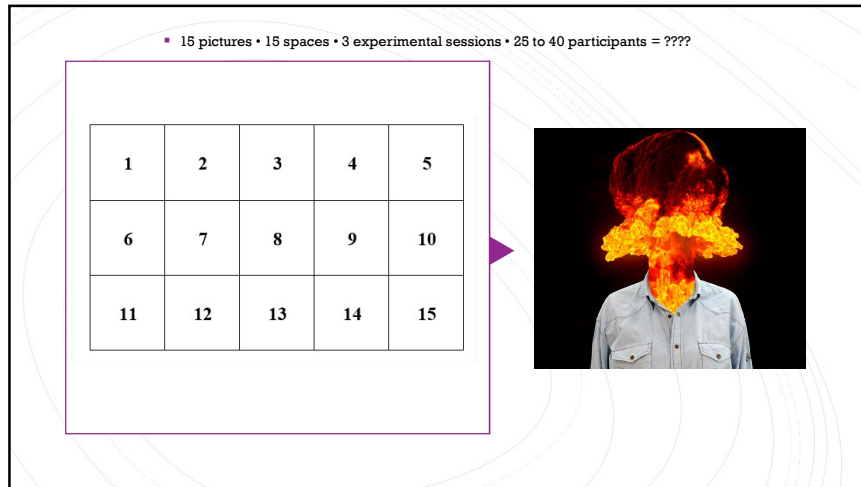
## Overall Consistency Proportions

How do SLPs **organize** a set of pictures belonging to a single theme in a grid?





1	2	3	4	5
6	7	8	9	10
11	12	13	14	15


myQuickChat			Q&A	ALL	myPhrases			Comments/ Feedback	TIME - \$	Spell	Word	myWords	
not	don't	no	yes	to	-ed	-ing	-s	a	hello	please	thank you	myWords	
I	me	am	had	ask	be	call	come	an	about	all	as	myWords	
we	my	are	has	drink	eat	feel	get	and	at	bad	be-cause	big	
you	your	can	is	give	go	help	know	but	by	down	for	from	
he	him	could	was	let's	like	make	need	if	good	here	in	little	
she	her	did	will	put	play	say	see	or	more	now	of	off	
they	them	do	were	take	talk	tell	think	than	on	so	that	there	






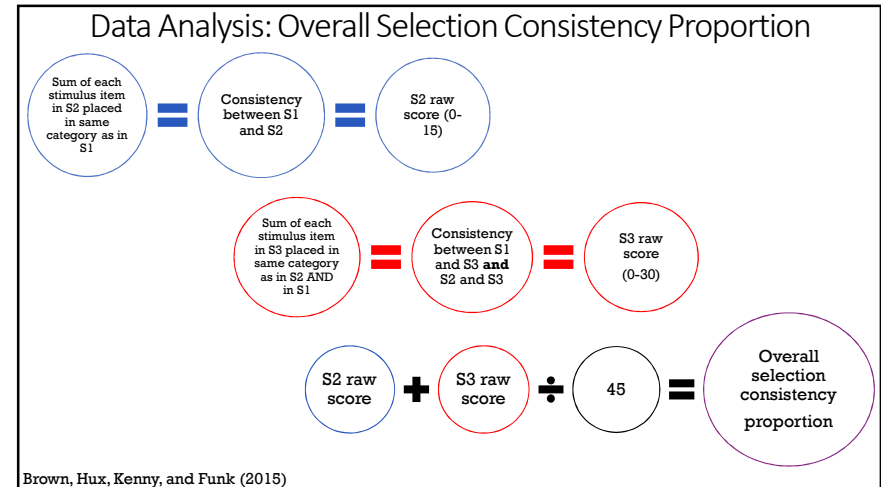


  
 Vital

  
 Related




  
 Unrelated

When given a set of pictures, which words do SLPs **select** based on importance?



## Data Analysis: Clusters

- Cluster analysis to see what explains variance
  - Demographic?
  - Caseload-related?
  - Years of experience?
  - AAC instruction?

## How do SLPs approach these decisions?

- Two-fold question:
  - Open-ended first
    - What would you MOST prioritize given XX diagnosis (e.g., TBI, aphasia) OR XX age (e.g., young adult (i.e., 18-30 years))?
  - Ranking task
    - Rank, in order, the factors you consider when making decisions related to vocabulary selection and organization.
      - Patient diagnosis (e.g., TBI, aphasia) and characteristics related to that diagnosis
      - Type of visualization (e.g., icons vs. written)
      - Patient age
      - Factors related to semantic items (e.g., frequency of use)
      - Caregiver input
      - Other
      - ??

## Future Research Questions and Goals

- How can we examine this in individuals with TBI? (issues with Qualtrics- working memory load!)
- How can we examine this in individuals with metacognitive impairments?
- Other populations for whom this may be relevant
  - Aphasia
  - Dementia

## Questions

- Research questions- how to measure (in)consistency among SLPs?
- Factors to consider when organizing semantic items?
- Statistical method?

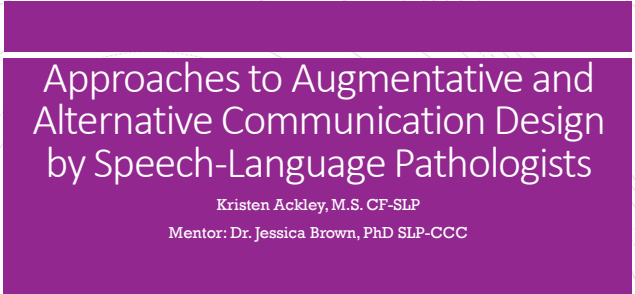
## Major Research Questions

My project aims to understand **how SLPs approach AAC vocabulary selection and organization when using grid displays**. My specific research questions include:

1. How do SLPs organize a set of vocabulary words belonging to a single theme in a grid?
2. When given a set of pictures, which vocabulary do SLPs select based on importance?
3. Is the organization and selection of vocabulary consistent among SLPs?
4. Is the organization and selection of vocabulary consistent across time?

## References

- Beukelman DR, Mirenda P. (2013). *Augmentative and alternative communication*. 3rd ed. Baltimore: Paul H, Brookes Publishing Company
2005. Brown, J.A., Hux, K., Kenny, C., & Funk, T. (2015). Consistency and idiosyncrasy of semantic categorization by individuals with traumatic brain injuries. *Disability and Rehabilitation. Assistive Technology*, 10(5): 378-384.



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