

Table S1. Psycholinguistic properties of activity and food items (mean values for Set A and Set B word lists for each of the three participants).

	Participant						Total M(SD)
	P1		P2		P3		
	<u>Set A</u>	<u>Set B</u>	<u>Set A</u>	<u>Set B</u>	<u>Set A</u>	<u>Set B</u>	
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
Activity Items							
Letters	8.5 (2)	9.3 (3)	12.0 (3)	11.6 (4)	12.8 (5)	12.1 (3)	11.1 (2)
Syllables	2.7 (1)	3.0 (1)	3.5 (1)	3.6 (1)	3.9 (2)	3.6 (1)	3.4 (0)
Frequency	58 (46)	56 (40)	43 (32)	27 (24)	57 (48)	51 (23)	49 (11)
Imageability	578 (83)	542 (45)	585 (15)	602 (46)	518 (86)	590 (44)	569.2 (29)
Familiarity	577 (34)	555 (67)	569 (37)	540 (27)	519 (92)	566 (49)	554.3 (19)
Food Items							
Letters	5.2 (2)	5.1 (2)	7.6 (3)	6.6 (1)	6.7 (3)	6.0 (2)	6.2 (1)
Syllables	1.7 (1)	1.8 (1)	2.3 (1)	1.9 (1)	2.2 (1)	1.8 (1)	1.95 (0)
Frequency	9.7 (12)	12.8 (10)	7.3 (4)	10.6 (11)	8.4 (13)	12.3 (10)	10.2 (2)
Imageability	605 (27)	610 (25)	620 (29)	590 (50)	580 (31)	577 (45)	597 (16)
Familiarity	566 (53)	542 (47)	542 (52)	571 (27)	530 (52)	512 (60)	543.8 (20)

Note. Mean frequency (Kučera Francis), imageability, and familiarity values computed using MRC norms for individual words (Coltheart, 1981).

Reference

Coltheart, M. (1981). The MRC Psycholinguistic Database. *Quarterly Journal of Experimental Psychology*, 33A, 497–505.

Table S2. Sample stimuli for Participant 1, Participant 2, and Participant 3.

Participant 1

	Activity Set A (trained)	Activity Set B (untrained)	Food Set A (trained)	Food Set B (untrained)
Words	cooking	walking	beef	corn
	knitting	baking	pop	juice
	reading	talking	pizza	melon
	watching TV	doing puzzles	oatmeal	burger
	having coffee	working out	potatoes	chocolate
Sentences	I am cooking.	I am walking.	I am eating beef.	I am eating corn.
	I am knitting.	I am baking.	I am drinking pop.	I am drinking juice.
	I am reading.	I am talking.	I am eating pizza.	I am eating melon.
	I am watching TV.	I am doing puzzles.	I am eating oatmeal.	I am eating burger.
	I am having coffee.	I am working out.	I am eating potatoes.	I am eating chocolate.

Participant 2

	Activity Set A (trained)	Activity Set B (untrained)	Food Set A (trained)	Food Set B (untrained)
Words	fishing	swimming	cake	milk
	walking	biking	pizza	cheese
	eating out	working out	tacos	waffles
	reading comics	watching TV	ice cream	turkey
	doing handyman work	playing with my dog	hot chocolate	potatoes
Sentences	I am fishing.	I am swimming.	I am having cake.	I am drinking milk.
	I am walking.	I am biking.	I am eating pizza.	I am eating cheese.
	I am eating out.	I am working out.	I am having tacos.	I am having waffles.
	I am reading comics.	I am watching TV.	I am getting ice cream.	I am getting turkey.
	I am doing handyman work.	I am playing with my dog.	I am drinking hot chocolate.	I am getting potatoes.

Participant 3

	Activity Set A (trained)	Activity Set B (untrained)	Food Set A (trained)	Food Set B (untrained)
Words	shopping	swimming	soup	rice
	traveling	eating out	beans	cheese
	watching football	watching movies	melon	onions
	playing guitar	checking email	pizza	stir fry
	getting a manicure	getting a pedicure	chips & salsa	mac & cheese
Sentences	I am shopping.	I am swimming.	I am having soup.	I am having rice.
	I am traveling.	I am eating out.	I am eating beans.	I am eating cheese.
	I am watching football.	I am watching movies.	I am buying melon.	I am buying onions.
	I am playing guitar.	I am checking email.	I am getting pizza.	I am getting stir fry.
	I am getting a manicure.	I am getting a pedicure.	I am getting chips & salsa.	I am buying mac & cheese.

ITA Treatment Protocol

Individual sessions. Participants began each session with training focused on the core set of vocabulary items associated with the target unit. A photo cue card was presented, and the participant was asked to name the item. If the response was incorrect, a cueing hierarchy was implemented that included a combination of semantic (Boyle, 2004), phonemic, and orthographic (Greenwood, Grassly, Hickin, & Best, 2010) cues. Cues were presented in the following sequence: a) semantic cue (Can you tell me something about the item?), b) phonemic cue (Can you think of any sounds in the word?), c) written cue, d) repetition, and e) simultaneous repetition. As soon as the participant produced the target word correctly, the cueing hierarchy was discontinued, and the participant was asked to practice saying the word three times. Then, after a 2-5 second delay the participant was asked to name the item one last time before proceeding with the next item. This procedure was repeated for all 10 items in the target set.

Scripted dialogue training was implemented after the vocabulary exercise was completed. Procedures for this task were similar to those reported in other script training protocols (Holland & Hinckley, 2002). Participants were asked to produce both a sentence and a question relevant to the semantic topic. Dialogues were constructed by the participant and therapist prior to initiating treatment, and were of personal relevance to the participant. To begin, the therapist presented a photo depicting the target response, and asked the participant a specific question to prompt the appropriate response. For example, for Activity items participants were asked "*What do you like doing?*" to elicit the response: 'I like ____'. After responding, participants were prompted to take their turn asking the therapist the same question. The cues used to facilitate production of the response and the question included a) written cues (sequential presentation of words in target utterance), b) repetition, and c) simultaneous repetition. Once the response/question was produced correctly, the cueing hierarchy was discontinued, and the participant was asked to practice saying the response/question three times. After a 2-5 second delay the participant was asked to produce the target one last time.

Sentence training integrating the target vocabulary was administered next. For this exercise, participants produced ten *Pronoun + Auxiliary Verb + Verb + ing + Verb Complement* sentences in response to a question prompt. A photo cue card was presented, and the participant was asked either 'What are you doing?' (Activity unit) or 'What are you eating?' (Food unit). If

the response was incorrect, a cueing hierarchy was implemented. Cues were presented in the following sequence: a) self-check (That's not quite right, can you fix it?), b) written cue, c) repetition, and d) simultaneous repetition. Once the participant produced the target sentence correctly, the cueing hierarchy was discontinued, and the participant was asked to practice the sentence three times, then, after a 2-5 second delay the participant was asked to repeat the sentence one last time before proceeding with the next item. This procedure was repeated for all 10 items in the target set.

The final activity in the individual session was conversational practice (5-10 minutes). For this activity, the therapist asked questions that provided opportunities to practice target vocabulary and sentence structures, associated with the unit, in novel and more naturalistic conversational contexts. Sample questions used by the examiner included '*Do you like _____?*', *What are you doing/eating tonight?*, *What do you want to do/eat on your holiday?*, *What is he/she doing/eating?* Cues used to elicit the target structures were similar to those used in Response Elaboration Training (Kearns, 1985). Specifically, cues included: a) sentence prompts ('Try to make a complete sentence'), b) rephrasing, and c) modeling correct productions.

Group Sessions. The primary purpose of group sessions was to provide participants with opportunities to practice, with other individuals, the vocabulary and/or sentence structures trained in the individual sessions. The group facilitator began the session with basic social communication by asking participants 'How are you?'. Participants were prompted to respond using a *Pronoun + Verb + Verb Complement* sentence structure (e.g. I am fine/tired/angry). Once the facilitator had given each individual a chance to respond, the participants took turns asking each other the same question. This sequence of group facilitator asking/modeling a question, and group participants responding with a *Pronoun + Verb + Verb Complement* sentence and then taking turns asking each other the same question was repeated several times during the session. The speech prompted during group included questions & responses that had been practiced in the individual sessions as well as novel questions and responses. Each participant was given a set of 10 index cards which could be used to self-cue a response. The front of each index card contained a photo of the target vocabulary item and the back of the card contained the actual written word. In addition, the same cueing techniques (sentence prompts,

rephrasing, modeling) used for conversational practice in the individual sessions were applied in group sessions.

Homework. Participants completed a minimum of 30 minutes of homework five days per week. Homework entailed naming the ten items depicted on the vocabulary flash cards and/or practicing the sentences trained during treatment. Sentence homework was completed using a power point file containing the same visual materials used during sentence training in the individual therapy session. All participants completed a log in which they recorded the amount of time spent on homework daily. This log was returned and reviewed on a weekly basis with the therapist.

References

- Boyle, M. (2004). Semantic feature analysis treatment for anomia in two fluent aphasia syndromes. *American Journal of Speech-Language Pathology*, 13, 236–249.
- Greenwood, A., Grassly, J., Hickin, J., & Best, W. (2010). Phonological and orthographic cueing therapy: A case of generalized improvement. *Aphasiology*, 24, 991–1016.
- Holland, A. L., & Hinckley, J. J. (2002). Assessment and treatment of pragmatic aspects of communication in aphasia. In A. E. Hillis (Ed.), *The handbook of adult language disorders: Integrating cognitive neuropsychology, neurology, & rehabilitation* (pp. 413–427). New York, NY: Psychology Press.
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