



The value of “communication strategies” in the treatment of aphasia

Audrey L. Holland

To cite this article: Audrey L. Holland (2020): The value of “communication strategies” in the treatment of aphasia, *Aphasiology*, DOI: [10.1080/02687038.2020.1752908](https://doi.org/10.1080/02687038.2020.1752908)

To link to this article: <https://doi.org/10.1080/02687038.2020.1752908>



Published online: 21 Apr 2020.



Submit your article to this journal [↗](#)



Article views: 91



View related articles [↗](#)



View Crossmark data [↗](#)



The value of “communication strategies” in the treatment of aphasia

Audrey L. Holland

Department of Speech, Language and Hearing Sciences, University of Arizona, Tucson, AZ, USA

ARTICLE HISTORY Received 3 April 2020; Accepted 3 April 2020

KEYWORDS Aphasia; communication; strategies; treatment

Neither aphasic nor non-aphasic speakers communicate in perfectly articulate, grammatically full sentences, unless they are reading from a printed text or have learned the text of a strange and unworldly play.¹ Our abilities to sound “normal” are present and probably available to people with aphasia (PWA) and their non-aphasic communicative partners, although they frequently go unrecognized in aphasic speech. Seligman (2002) would consider the ability of aphasic speakers to try a variety of alternative ways of talking as a strength to be cherished and capitalized on for getting along every day.

Strategies for more effective communicating in daily life appear to lie in the grey area between attempts to lessen the impairment of aphasia, and attempts to help and encourage people with aphasia participate as fully as possible in society once again. In one sense, strategies are a “lingua franca” that helps to bridge the gap between aphasic language and getting along in a non-aphasic language world again.

I cannot find a good definition for what I consider to be “communication strategies”. Perhaps the best way to think about them is that they are like “end-arounds” – solutions to problems that are difficult to solve directly. They are useful bypasses for everybody, not just for people with aphasia. But for people with aphasia, when they have trouble accessing and saying the words they need, there are a variety of ways available to them to communicate what they mean or are intending to say. Communication strategies can be used to solve grammatical problems as well as substantive word retrieval problems. For example, reverting to simpler constructions would be considered a communication strategy for agrammatic speakers.

Strategies, in this sense, comprise perfectly acceptable “tricks” for solving communication problems. For example, most of us have heard our aphasic clients tell us that they “know it but can’t say it”. It is likely to be true. For a simple example, if a person with aphasia searches for the word “cat”, she may be able to tell us that it is a small animal, a pet, says “meow”, eats mice, its name begins with/k/, etc. If she shares some of this information with us, we are likely to know what animal she is talking about, and our communication can continue.

In people who do not have aphasia, we call this a “tip of the tongue” phenomenon (Brown & McNeill, 1966). For people with aphasia, most of us call it a symptom of anomia.

CONTACT Audrey L. Holland  aholland166@gmail.com 

© 2020 Informa UK Limited, trading as Taylor & Francis Group

I view these word-finding “problems” as yet something else. To me, failed word searches like these hold keys to potential strategies, and suggest some ways in which PWA might be able to capitalize on and use them for communicative success in everyday speech. Therefore, rather than discourage them, I have long believed that people with aphasia should be encouraged to capitalize on such strategies as a means for getting their messages across.

Some years ago, another therapist referred an aphasic man (Jeff) to me, hoping that I could help him quit his “overuse” of circumlocutions in his everyday communication. His speech was indeed circumlocutory, but it worked for him in getting messages across. Rather than attempting to eliminate circumlocutions, my goal for Jeff’s therapy was to focus on simplifying and shortening them, saying circumlocutions as loudly and as clearly as possible, and finding additional effective strategies for improving his communication. I explained to the family what they were, pointed out how they worked to improve what he said, and how it would be helpful to encourage their use. (Jeff had been a practicing trial lawyer before his stroke, and it is just possible that his “talking around” might have been a useful hangover from his profession.)

This paper concerns some work by my colleagues and others who help people with aphasia to get their messages across by encouraging the use of word-searching strategies. In what follows, four related approaches will be described and evaluated. The first is an inventory. It is the Famous People Protocol (Holland et al., 2019), designed to guide clinicians as to what strategies might be useful to a given patient. It is a formal approach; a first step in learning to use strategies efficiently and effectively. Its goal is to help clinicians determine which of many potential strategies might be most useful in helping an aphasic individual to communicate more effectively and efficiently.

In my experience, people differ widely with respect to what helps them; and in some cases, almost unconsciously, use what works for them. An example is Bill, who has severe apraxia of speech. He is never without paper and a pencil for use when his limited and very effortful speech fails to work for him. He is an expert in part-word writing, and rudimentary drawing. Other aphasic speakers fail to recognize what works, doesn’t work, or *might* work when their verbal communication fails. Another example is Marnie, who, like Jeff described earlier, often uses circumlocutions that guide her listener to comprehend what she is talking about. But Marnie is embarrassed by her strategy, and uncomfortable using it. A clinical activity might be to use a PACE-like activity in which both speakers circumlocute, thus demonstrating for her the ease with which such utterances enhance message exchange. Another person, Alan, appears to believe that achieving his pre-stroke level of fluency is his only alternative, and that perfectly chosen words, articulated perfectly and rapidly, is the only acceptable way to talk. Alan is representative of people with aphasia whose major therapeutic challenges would be for clinicians to begin by demonstrating the power of sending less than perfect messages. The next task would be to explore what strategies work best for achieving these ends. Then, guide practice in using them in appropriate contexts and settings. I see this as a counseling responsibility for clinicians, and one that I take very seriously.

Searching for appropriate strategies for a particular person with aphasia might be informal, but I also believe it is valuable to go about the search in a more systematic way. This is what the Famous People Protocol, described below, is all about. Its goal is to find

out what strategies are helpful for a given aphasic person, so that the clinician and family can encourage and help him or her to use those strategies in everyday communication.

The famous people protocol (FPP)

The FPP was developed, evaluated, and made available to the aphasia community under the auspices of AphasiaBank, a federally funded archive of aphasic speech. The AphasiaBank project has videotaped discourse for just over 300 people with aphasia using a standard protocol. The discourse sample is transcribed in CHAT format for AphasiaBank members to use in their own research and teaching (MacWhinney et al., 2011).

The FPP is one of AphasiaBank's more recent projects (Holland et al., 2019). It is in the public domain and available on the AphasiaBank website.²

The content is distinctively (and intentionally) grounded in North American popular culture. However, its concepts are much more universal. For example, it is currently being "culturally translated" into Mandarin for use with Mandarin-speaking PWA. Appropriate translations for use in other cultures are welcomed.

The FPP is a charades-like activity, although it differs from charades in that PWA are also encouraged to talk. The goals are simply to do "anything the speaker can do" to identify pictures of famous people. People naming was deliberately chosen because it is a difficult task and provides many opportunities to use strategies. Famous peoples' names generally have rich semantic networks, and therefore have many cues to a person's identity. Finally, people naming also appears to be fun and non-threatening.

Stimulus pictures were chosen from a pool of famous persons whose pictures were identified correctly by non-aphasic people in the general demographic of most PWA. The pictured people represent 10 entertainers, four internationally-recognized world figures, five American athletes, and five former U.S. presidents. Each category was presented separately, and 28 additional items were presented between categories. These items are intended to provide more information related to strategy use. For example, the FPP contains a short series of items concerning the film, "The Wizard of Oz", an American classic film (which appears to have been seen by everyone in the United States over the age of eight). One of its tasks asks the aphasic person to sing or hum a song from that film. The clinician then might explain singing's value as a useful strategy.

The practice item serves to illustrate the FPP's general approach. The person with aphasia is shown a picture of John Wayne, a well-known American movie icon. The clinician first describes many ways the aphasic person might transmit knowledge about him (e.g., naming him, of course, but also calling him "The Duke", naming a movie that he was in, gesturing him shooting a gun). To maximize comprehension, the written and spoken instructions and practice material are presented simultaneously. That is, the clinician slowly reads each task aloud while also presenting it visually. This "aphasia-friendly" format is used throughout the protocol. FPP has a 3-point scoring system: a 3-point response comprises a clear indication that PWA knows who is pictured. For example, for The Beatles, 3 points could be earned by saying "Beatles", or naming each individual Beatle, or producing a classic *conduite d'approche* ("*bangles, bingles, bungles, Beatles*"). To be clear, it does not matter HOW one's message is conveyed, it only matters THAT the message is unambiguous. Two points are given for vague answers, such as drawing a rainbow for a picture of Judy Garland dressed as Dorothy in the Wizard of Oz.

One point is awarded for answering all of three yes-no questions about the person correctly. One point is also awarded for each of the 28 interspersed items. The use of “whatever it takes” to communicate is strongly encouraged, and there are many opportunities for effective gesturing in the protocol. Paper and pencil are available throughout, as are any communication devices the person with aphasia might be using.

The protocol was first used with non-aphasic persons and then with 81 aphasic people, who were also tested using the Western Aphasia Battery-Revised (Kertesz, 2006). Our 2019 paper reported only on the subset of PWA who tested below the mean WAB-R Aphasia Quotient of the entire PWA group, on the assumption that this portion of the group was probably most in need of learning to use strategies to solve communication problems. Nevertheless, individuals in the top half of the distribution also used strategies when needed, and were encouraged to do so whenever they had word-finding problems. Table 1 lists examples of some of the strategies they used.

Following are three brief case studies of individuals who were evaluated with the FPP. Jonah had virtually no usable speech, beyond perfunctory utterances such as “uh”, “huh”, “no”, “and”, “bye”. He used writing to communicate throughout, and his FPP score was 87 (out of a possible 100 points) which is within the normal range. It was clear that he was having a great time, laughing and teasing a lot.³

Jonah was two-years post stroke, and had had individual therapy weekly since discharge from rehabilitation. According to his wife, this therapy consisted of “working on sounds”. Further, writing was discouraged, and no mention had been made either to Jonah or his wife about the possible pertinence of alternative and augmentative communication (AAC) devices for him. To my mind, a far more preferable focus of individual treatment would have been to follow Jonah’s strengths in writing for communication, as well as introducing him to the alternatives made available through the rapidly improving world of AAC.

Don was quite different and unique in many other ways as well. First, he still worked, currently in the capacity of filling orders for a small mail order business he had founded some years earlier with his partner. The FPP provided Don with a platform for

Table 1. Some illustrative 3-point responses on the FPP.

Stimulus Picture	Response Type	Example
Clint Eastwood	Spoken (intelligible)	<i>Clint, Eastwood, or Clint Eastwood</i>
Judy Garland	Circumlocution (intelligible)	<i>She’s the one with those Toto guys</i>
The Beatles	Conduite d’approche	<i>Bangles, bingles, bungles, Beatles</i>
Marilyn Monroe	Singing or humming	<i>Happy Birthday, Mr. President ...</i>
Marilyn Monroe	Gestures	Imitation of the iconic picture of Marilyn in a swirling skirt from the film, “Seven Year Itch”
Adolf Hitler	Drawing	Swastika
Adolf Hitler	Speech and gesture	<i>Heil, Nazi salute</i>
George Washington	Circumlocution	<i>The first one ...</i>
Willie Nelson	Circumlocution	<i>Old country singer, long hair</i>
Michael Jordan	Gesture and speech	Shooting basketball, <i>Bulls</i>
Tiger Woods	Cued speech (Ti ...)	<i>Tiger Woo ...</i>
John F. Kennedy	Legible writing (spelling does not count)	John Kendy, Jack K

demonstrating three strategies that were his strengths. He was not hemiplegic, and that helped him greatly in demonstrating his skill in pantomime and gesture, and in his ability to draw. He was also quite gregarious and had a wide circle of (non-aphasic) friends. Don was not in treatment, nor did it seem necessary for him to be in treatment. He was living successfully with his aphasia. However, Don would likely have benefitted greatly by being a member of an aphasia group, and I suspect other members would have benefitted from his cheery presence and inventiveness as a communicator as well.

Martha most resembled Don regarding her severe aphasia. However, she differed remarkably from him on the FPP. Almost all of her points were scored as a result of answering yes/no questions correctly. However, she also could hum/sing when specifically guided to do it. Her only verbal response was earned on a sentence completion item. Nevertheless, she demonstrated good comprehension throughout the protocol. Because she was engaged and cooperative, were I her clinician, I would work toward showing her how effectively she can use singing and humming to communicate some short messages. I would also probably undertake a course of Melodic Intonation Therapy (Helm-Estabrooks et al., 2014) with a focus on communicating her wants and needs.

Treatments for strategy development

I next describe three approaches to training strategies in interpersonal communication. The first incorporates strategies into traditional drills and practice. The second involves developing verbal routines that can be incorporated into scripts for communicative activities such as giving directions to one's house, sharing plans, verbal rituals and prayers, or telling jokes. The third trains both a person with aphasia and one of his or her frequent communication partners in strategy use.

Adapted naming activities

My earliest attempts for training strategies involved simply encouraging persons with aphasia to use them in naming activities. However, selecting appropriate stimuli had to extend beyond the everyday useful, personalized vocabularies that I cherish as the focus of therapy. Instead, the focus for strategy training had to include words or concepts that would be difficult enough to *necessitate* the use of strategies. Further, rich association networks for words and concepts were an additional requirement. So, my early attempts at strategy work, which predated the FPP, indeed used famous and notorious people as stimuli, along with famous places and monuments, famous movies, even common words like "dog" for which various breeds served as pictures to be described, and so forth. This early work served as the impetus for the FPP. A clinical activity might involve instructions and then using guides similar to forms used for Boyle's Semantic Feature Analysis (Boyle, 2010). However, what the PWA had to do here (with help from the clinician) was to use the strategies which might help a listener understand. For example, the stimulus might be a picture of the Eiffel Tower. Surrounding the picture might be cues for clues, such as: can you write its name, can you tell me something about it, can you tell me where it is, can you start the name. This remains a usable treatment approach, but working with communicative interactions, even if simulated, suggests a bigger payoff. Incidentally, the above sorts of activities are useful, and a lot of fun when they are adapted for strategy practice in

aphasia group treatment. This is particularly true when different group members use different strategies.

A rationale for scripting and coaching in aphasia treatment

What clinicians typically tend to do is to work on words, sounds, and grammatical structures. We trust aphasic speakers themselves to put them together for talking. Psychologists call this “part task training”. This differs from what they term “whole task training”, in which a joke, or a story, or directions to one’s house are taught as a unit. There are benefits to both. For example, if we train word-retrieval, we assume that retrieving those words will generalize to similar classes of untrained words, and our research literature suggests that it often does. But the generalization appears to be to other related words rather than to daily activities or getting along better in the real world. On the other hand, whole task generalization, if focused on real life activities, is likely to be limited only to similar routines. For example, if whole task training is designed to re-establish ordering take-out from a Chinese restaurant, it has some likelihood to generalize to ordering takeout from the local pizza restaurant.

Both whole and part task training assume that practice is necessary. That is, learning is the mechanism of change. Hinckley et al. (2001) compared these two approaches to the task of ordering a shirt over the phone. Persons with aphasia, who were the experimental subjects for the part-task group, learned the necessary vocabulary cross modally, and in relevant sentence structures. Whole task training taught the whole ordering unit to a second group of aphasic subjects. Both groups learned the task, with the part task group learning faster, but the whole task group retained it for a longer period of time. The groups also showed different patterns of generalization. Part task-trained aphasic participants were subsequently better able to order a shirt via a written form. Whole task-trained aphasic participants were subsequently able to order a pizza over the phone, as described above. None of this is surprising, but it seems to me that ordering pizza is the more substantial and worldly outcome. Such whole task training is the rationale for both scripting and for conversational coaching.

Script training

Script training, as it is described here, was initially developed by me and my students. We began with the premise that people are the stories they tell about themselves. It also takes into account as the routine talking activities of daily life, such as ordering the same breakfast in a frequently visited restaurant or asking the obligatory questions one might ask of one’s granddaughter in a phone conversation. As a first step in developing computerized training scripts for use at the (then) Rehabilitation Institute of Chicago (RIC),⁴ Holland et al. (2010) asked people with aphasia to choose what they might want to talk about in three different forms: monologues, a dialogue in which the PWA was the questioner, and a dialogue in which the PWA was the responder. We examined 100 short scripts, essentially 30 of each form, looking to provide clinicians with information concerning the content of scripts that would be meaningful. Personal stories were the topic of the majority of the monologues, with a substantial number of those being stories of stroke and aphasia. For dialogues, conversations with families, followed by seeking or

providing information were frequent. These scripts became the basis of computerized scripting (Cherney et al., 2008)

Here is how script training (the non-automated form) worked with Lorna, a woman with moderately severe Broca's aphasia. I developed a script with her when I found out that she was planning to go shopping with her husband to buy Christmas presents for the family. Lorna first communicated what she wished to buy. Then she and I developed her plans into a script together, much like the following for full sentences, but longer:

Let's get a necklace for Maxine.
For Steve, a radio would be nice.
How about a bone for Smoky?
Your present will be a surprise!

Lorna and I went over the written script together, and tailored its content in ways that she could communicate intelligibly. We simplified it and incorporated her strategies, which included drawing and pointing (for "bone", my crude drawing of a bee for/b/), gesturing (a necklace), pointing to her husband for "your", convincing her that "Mokey" would be recognized as "Smokey"), breaking longer words into their component sounds and tapping them out as she talked ("radio" was written on her script both as "radio" and as "ray-dee oh" and "surprise" was "su priz").

We then practiced the script a few times using all of the strategies. Next, we invited her husband Ralph to join us. He did not know what was about to happen. I set the stage by telling him that Lorna had been practicing her Christmas shopping list, and she had some gifts in mind. Then, while I coached and reminded her, she successfully communicated the script. Ralph's reaction? *"I didn't know she could do that!"* Lorna's reaction was a great big smile. Next, we asked a second clinician who did not know Lorna and Ralph to join us. By now Lorna knew the script and its tricks and strategies, and communicated it to the second clinician accurately with a bit of help from Ralph, who had been encouraged to do so by both of us. This is not rocket science, but it is an enjoyable task for most PWA with whom I have used it.

It almost takes longer to describe this process of script therapy than it does to implement it. Step one is to observe what works for a given patient, perhaps using the FPP. The next steps are to make sure that the person understands what appears to work for her, and then encouraging her and helping her to see the benefit of getting messages across in this way. Once some strategies are in place, and perhaps put onto an app for home practice, the strategies themselves can generalize, at least to similar tasks.

Other interesting examples of scripting can be found in the works of several other clinical aphasia researchers (Goldberg et al., 2012; Youmans, Holland, et al., 2005; Youmans, et al., 2011). A rich treatment literature from Cherney's laboratory has emerged from AphasiaScripts, which is their automated, but less personalized approach to learning strategies that followed our initial work (Cherney et al., 2011, 2014; Kaye & Cherney, 2016). Their work also attests to the efficacy of scripting.

Conversational coaching

Conversational coaching moves scripting to a larger, and perhaps more authentic arena. Like most of my clinical colleagues, I am aware that aphasia is probably just as mysterious to significant others who live with people who have aphasia as it is to the person who actually has it. Further, the adjustments that both members of the dyad make seem to improve the lives of both of them. Building on strategy training such as scripting, conversational coaching focuses on both members of such dyads, and with a number of them, generalizes to their larger families as well.

Hopper, Holland & Rewega (2002) described a complex study for evaluating the use of conversational coaching to improve communication between two sets of individuals, one of whom had aphasia. The training process resembled a relatively common situation in which an aphasic person might be attempting to describe an event to his or her non-aphasic spouse. Following a baseline session in which a person with aphasia first views a short videotaped event, he attempts to describe the event to his partner, who had not seen the tape. Their interaction was videotaped, viewed and analyzed by experimenters, who looked for successful and unsuccessful interchanges. These interchanges were the basis for developing a set of personally appropriate strategies that appeared to be successful for the dyad.

Then an instructional session was conducted. It used a different videotaped story. As the aphasic member of the dyad attempted to describe it, BOTH members of the pair were responsible for noting what was “working” and were encouraged to use those strategies. Table 2 lists the communication strategies that were suggested for Mr. Y (who had aphasia) and for Mrs. Y (who did not). For example, in baseline, Mrs. Y was noted frequently to ask Mr. Y to “*Say it again*” (which he clearly could not do, and which appeared to frustrate and annoy him). In the instructional session, we suggested that she note his frustration and to try instead to ask him to “*tell me another way*”. This clearly was a relief to Mr. Y, who then felt free to try other verbal means, or to draw or write all or part of the message.

This instructional session was followed by a series of six training sessions, in which both communication partners were coached using different videotaped short stories. Both pairs noted that they improved in their interpersonal communication. The aphasic member of dyad Y also showed improvement on CADL-2 (A. L. Holland et al., 1999). Finally, naive judges were able to discern which of a pair of videos they observed were pre- and post-training. Aphasic partners usually adopt some of the appropriate strategies quickly and efficiently, but the non-aphasic member of these dyads also appeared to be making meaningful and substantial changes in partner communication.

Table 2. Communication Strategies for Dyad Y*.

Mr. Y	Mrs. Y
Main idea first	Ask for main idea first
Draw	Write down information
Gesture	Write question for Mr. Y
Gesture and draw	Confirm yes/no in writing
Write	Ask him for other strategies
Correct wrong information	Give him more time to respond
<i>You're close</i> (indicate she is almost right)	Summarize information frequently

*Use of all strategies is not necessary; one or two very useful ones are often fine

Dyadic communication is, obviously, a two-way street. Both spouses and their aphasic partners can use strategies that help to improve communication. Supported communication (Kagan, 1998) remains the gold standard for its teaching, but direct work like this seems to enhance supported communication by being immediate, direct, fun, and effective.

Conclusion

Strategy approaches to aphasia treatment are valuable for clinicians to use in helping persons with aphasia and their families get on with their lives post stroke. They have a real worldliness in the sense that almost all adult language users rely on them when they have misspoken or are in the middle of a “tip of the tongue” experience. The approach tends to demystify some aspects of aphasia. Strategies are not a panacea, and they fail to solve many of aphasia’s problems. We are far from a cure for this miserable disorder, and it is not clear that we will ever find one. But strategies are useful and available, even to people with severe problems to some degree, as some of the above examples illustrate.

Strategy implementation benefits greatly from the vast array of images available on the internet, and the development of apps that can significantly simplify strategy use by persons with aphasia. To end on a positive note, I conclude here with a story of strategy development and use, not planned by a clinician but by an individual with severe aphasia who taught a thing or two to his therapist (me).

Carlos is severely aphasic. He has virtually no usable speech, coupled with apraxia and a moderate comprehension problem. He is bright, motivated, and has a marvelous combination of cheerfulness and optimism. He has a spouse and a supportive family. He is in love with them; he is also in love with his iPhone.

Nobody told Carlos to do what he does. He figured it out for himself. He spends his days driving around, eating out with buddies, shopping, working on his land. When his wife Shirley comes home at the end of her workday, she asks Carlos what happened today, and Carlos is ready for her. He takes out his iPhone, on which he has dutifully recorded his day’s activities. Shirley looks at his daily pictures, and narrates them for him or asks him questions about them. Then she tells him what she did all day. Is this a typical husband-wife conversation at the end of their workday? Does their marriage work? Are Carlos and Shirley, a contented couple? I suspect you don’t need to ask.

Notes

1. Who in normal discourse would ever say “Is this a dagger which I see before me, the handle toward my hand”?
2. <https://aphasia.talkbank.org/famous/>.
3. As I was administering the protocol, he made a great show of writing “I love you”, hiding the paper from his wife who was seated across the table from him, and passing the note along to me.
4. In 2017, RIC became the Shirley Ryan Ability Lab.

Acknowledgments

I am grateful to colleagues Margaret Forbes and Davida Fromm for their substantial input into the FPP, and to my aphasic friends and family who contributed to this study. I am also grateful to: individuals from the Aphasia Group at the University of Arizona for their participation; the Adler Aphasia Center

(Maywood, NJ), Aphasia Center of California (Oakland CA), Aphasia Center of Tucson, (Tucson, AZ), Aphasia Center of West Texas (Midland, TX), University of Massachusetts Aphasia Group (Amherst, MA), SCALE Center (Baltimore, MD), Triangle Aphasia Project (Carey, NC), the University of South Carolina; and my neighbors for being the non-aphasic piloting and comparison groups.

Disclosure statement

The author reports no conflict of interest.

Funding

This work was funded in part by the National Institute on Deafness and Other Communication Disorders Grant R01-DC008524 (20017-2022) awarded to Brian MacWhinney.

Financial disclosure

No financial interest or benefit has arisen from the direct applications of the content of this manuscript.

References

- Boyle, M. (2010). Semantic feature analysis treatment for aphasic word retrieval impairments: What's in a name? *Topics in Stroke Rehabilitation*, 17(6), 411–422. <https://doi.org/10.1310/tsr1706-411>
- Brown, R., & McNeill, D. (1966). The “tip of the tongue” phenomenon. *Journal of Verbal Learning and Verbal Behavior*, 5(4) 325–337. [https://doi.org/10.1016/S0022-5371\(66\)80040-3](https://doi.org/10.1016/S0022-5371(66)80040-3)
- Cherney, L. R., Halper, A. S., Holland, A. L., & Cole, R. (2008). Computerized script training for aphasia: Preliminary results. *American Journal of Speech-Language Pathology*, 17(1), 19–34. [https://doi.org/10.1044/1058-0360\(2008/003\)](https://doi.org/10.1044/1058-0360(2008/003))
- Cherney, L. R., Halper, A. S., & Kaye, R. C. (2011). Computer-based script training for aphasia: Emerging themes from post-treatment interviews. *Journal of Communication Disorders*, 44(4), 493–501. <https://doi.org/10.1016/j.jcomdis.2011.04.002>
- Cherney, L. R., Kaye, R. C., & Van Vuuren, S. (2014). Acquisition and maintenance of scripts in aphasia: A comparison of two cuing conditions. *American Journal of Speech-Language Pathology*, 23(2), S343–S360. https://doi.org/10.1044/2014_AJSLP-13-0097
- Goldberg, S., Haley, K., & Jacks, A. (2012). Script training and generalization for people with aphasia. *American Journal of Speech-Language Pathology*, 21(3), 222–238. [https://doi.org/10.1044/1058-0360\(2012/11-0056\)](https://doi.org/10.1044/1058-0360(2012/11-0056))
- Helm-Estabrooks, N., Albert, M., & Nicholas, M. (2014). *Manual of aphasia and aphasia therapy* (3rd ed.). Pro-Ed.
- Hinckley, J., Patterson, J., & Carr, T. (2001). Differential effects of context-and skill-based treatment approaches: Preliminary findings. *Aphasiology*, 15(3), 463–476. <https://doi.org/10.1080/02687040042000340>
- Holland, A., Cherney, L., & Halper, A. (2010). Tell me your story: Analysis of script topics selected by people with aphasia. *American Journal of Speech-Language Pathology*, 19(3), 198–203. [https://doi.org/10.1044/1058-0360\(2010/09-0095\)](https://doi.org/10.1044/1058-0360(2010/09-0095))
- Holland, A., Forbes, M., Fromm, D., & MacWhinney, B. (2019). Communicative strengths in severe aphasia: The famous people protocol and its value in planning treatment. *American Journal of Speech-Language Pathology*, 28(3), 1010–1018. https://doi.org/10.1044/2019_AJSLP-18-0283
- Holland, A. L., Frattali, C., & Fromm, D. (1999). *Communication activities of daily living: CADL-2*. Pro-Ed.

- Hopper, T., Holland, A., & Rewega, M. (2002). Conversational coaching: Treatment outcomes and future directions. *Aphasiology*, 16(7), 745-761.
- Kagan, A. (1998). Supported conversation for adults with aphasia: Methods and resources for training conversation partners. *Aphasiology*, 12(9), 816-830.
- Kaye, R. C., & Cherney, L. R. (2016). Script templates: A practical approach to script training in aphasia. *Topics in Language Disorders*, 36(2), 136-153. <https://doi.org/10.1097/TLD.000000000000086>
- Kertesz, A. (2006). *The Western aphasia battery-Revised*. Pearson.
- MacWhinney, B., Fromm, D., Forbes, M., & Holland, A. (2011). AphasiaBank: Methods for studying discourse. *Aphasiology*, 25, 1286-1307. <https://doi.org/org/10/1080/0268703821.589893>
- Seligman, M. E. P. (2002) *Authentic happiness*. New York: Free Press
- Youmans, G., Holland, A., Munoz, M., & Bourgeois, M. (2005). Script training and automaticity in two adults with aphasia. *Aphasiology*, 18, 435-450. <https://doi.org/10.1080/02687030444000877>
- Youmans, G., Youmans, S., & Hancock, A. (2011). Script training treatment for adults with apraxia of speech. *American Journal of Speech-language Pathology*, 20, 23-37. [https://doi.org/10.1044/1058-0360\(2010/09-0085\)](https://doi.org/10.1044/1058-0360(2010/09-0085))