

# Implications of an Advice-Giving and Teacher Role on Language Production in Adults With Dementia

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**Purpose:** The purpose of the two studies described in this paper was to assess whether adults with dementia could assume an advice-giving role (Study 1) and a teacher role (Study 2) despite their cognitive impairments. So far, no research on adults with dementia has compared language production in a social conversation condition with that in an advice-giving condition. Moreover, there are no data on language production in cognitively intact adults and in adults with dementia in a teaching situation (e.g., a cooking task). **Design and Methods:** In Study 1, we used a within-groups design in order to compare language production in advice-giving and social conversation conditions. In Study 2, we used a between-groups design in order to compare language production in older adults with and without dementia. Measures in Study 1 were the occurrence of imperatives, discourse-building components, and discourse deficits. Measures in Study 2 yielded information on teacher-role implementation, cooking-related discourse, general discourse, discourse deficits, and experimenter-related discourse. **Results:** We found role-consistent discourse components in Study 1 as indicated by the number of imperatives in the advice-giving condition. Additionally, discourse production showed a higher occurrence of discourse builders and a lower occurrence of discourse deficits in the advice-giving than in the social conversation condition. Findings in Study 2 indicated that both cognitively intact older adults and adults with

dementia successfully taught students to prepare the recipes. However, the experimenter needed to prompt the adults with dementia more often than they did the older adults without dementia in order to get them to finish the cooking task. **Implications:** Both studies demonstrate that preserved discourse and role-related abilities in adults with dementia may allow these individuals to engage in interactions involving active, established social roles. This outcome may contribute to the establishment of effective practices in which adults with dementia can demonstrate preserved skills during activities and in social interactions with others.

*Key Words:* Language production, Discourse analysis, Dementia

A relatively common perception of adults with dementia in nursing homes is that they are helpless and incompetent and do not have the potential to maintain a certain level of independence and communicative ability (Lubinski, 1991). This perception may contribute to learned helplessness in the nursing home resident and a downward spiral of communication incompetence in which caregiver expectations of residents' abilities contribute to the residents' own perceptions of being incompetent and unable to maintain a coherent conversation (Lubinski). This perception is not limited to elders living in nursing homes or assisted living facilities; individuals are known to adjust their speech to a slower pace and less complex syntax when talking to any elderly person, a phenomenon known as *Elderspeak* (Kemper, Ferrell, Harden, Finter-Urczyk, & Billington, 1998).

Progressive memory loss and how this affects their ability to express themselves may, along with lowered expectations regarding communication abilities, be one of the most difficult problems individuals with dementia have to deal with. Studies have demonstrated that with advancing impairment, adults with

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dementia will experience increasing difficulty with topic management and maintaining a coherent conversation (Ehrlich, Obler, & Clark, 1997; Garcia & Joannette, 1997; Perkins, Whitworth, & Lesser, 1998; Ripich & Terrell, 1988). Whereas some conversation skills (such as maintaining the topic of conversation) deteriorate relatively early in the disease process, certain discourse deficits (such as using empty, non-meaningful phrases and using words without a referent) do not become prevalent until later stages of impairment (Dijkstra, Bourgeois, Petrie, Burgio, & Allen-Burge, 2002).

Recent studies on language production and memory in adults with dementia have focused on individuals with relatively preserved cognitive abilities, which can be utilized to optimize their functioning in social interactions (Caspari & Parkinson, 2000; Dijkstra, Bourgeois, Petrie, et al., 2002; Silveri & Misciagna, 2000). According to the results of one study, local coherence of utterances in conversations of adults with dementia and their nursing aides was preserved until the late stages of dementia, and the occurrence of discourse deficits in these conversations declined when adults with dementia talked with nursing aides who had received communication strategies training (Dijkstra, Bourgeois, Burgio, & Allen, 2002). Adults with Alzheimer's disease also have benefited from memory training, resulting in better access of lexical material after expanding rehearsal time when learned information was successfully retrieved on cue (Abrahams & Camp, 1993; Camp, Foss, O'Hanlon, & Stevens, 1996) and word naming after cues regarding the color and sound of the target were provided (Ousset et al., 2002). Furthermore, studies have demonstrated memory benefits for cued recall of items when they were motorically performed (subject-performed tasks) as opposed to being encoded verbally (Herlitz, Adolfsson, & Bäckman, 1991; Karlsson, Bäckman, & Herlitz, 1989).

Preserved abilities in discourse can help adults with dementia maintain a socially interactive life. Quality of life among adults with dementia depends on, among other things, the frequency and quality of verbal interactions they have with their caregivers (Bourgeois, Dijkstra, & Hickey, 2005). According to past research, adults with dementia living in nursing homes who had higher depression scores according to their nursing aides had fewer verbal interactions with others than did adults with dementia who had lower depression scores. Having social interactions through successful communication allows adults with dementia to remain part of social networks and maintain their roles in them. As remote memories are more accessible than recent events, albeit in a more generic semantic than specific episodic format, adults with Alzheimer's disease should be able to access memories from the remote past when interacting with others (Kopelman, 1992; Piolino et al., 2003).

In certain communication environments, adults with dementia may be able to fulfill specific roles, such as a teacher, advice giver, or nurturer. These

roles are common and familiar ways in which people interact with one another; they tend to follow script-like procedures and sequences. Camp and Skrajner (2004) demonstrated that adults with early-stage dementia were able to function as group leaders for a small-group activity of memory bingo. They were able to learn procedures involved in leading a group and to engage in this role effectively. Fulfilling a helping role may have additional psychological benefits, such as higher self-esteem and well-being (Liang, Krause, & Bennett, 2001).

The purpose of the present study was to document preserved abilities in adults with dementia by using a method that was previously used by Togher and Hand (1999) with individuals who did or did not have traumatic brain injury and who were placed in a communication situation that was either information providing or information seeking in nature. Togher and Hand found the discourse of traumatic brain injury patients to be more similar to that of individuals in the control group in the information-providing (rather than in the information-seeking) condition. By using a similar method, we examined the effects of two different information-providing roles—an advice-giving role and a teacher role—in order to assess whether preserved knowledge in adults with dementia could be activated, resulting in qualitatively different conversational content as a function of assigned role. In the first study, we assessed differences in language production for a social conversation versus an advice-giving role. In the second study, we analyzed the extent to which adults with dementia were able to assume a teacher role and exhibit preserved knowledge of action sequences and instructive language associated with this task. In both studies, we expected participants to fulfill these roles by drawing from previous experiences in the remote past as a parent, sibling, or friend, when they had given advice or had taught others how to make a recipe.

We expected to demonstrate preserved advice-giving and teaching behaviors consistent with the conventions of the particular roles in both studies, such as the use of imperatives in an advice-giving condition (Study 1) and the use of instructional and evaluative language in a teacher role (Study 2). Additionally, we expected these role-associated abilities to result in a higher occurrence of discourse-building abilities (such as topic maintenance) in the advice-giving condition relative to the social conversation condition (Study 1) and a similar distribution of role-relevant language (such as recipe-related language) in the discourse of adults with and without dementia (Study 2).

## Study 1

### **Methods**

#### *Participants*

We obtained consent to participate for six men and eight women in the early to more advanced stages of

dementia from family members or the participants themselves. All participants were clients at a local adult day care center. None of them lived independently but were instead cared for at home by a spouse or an adult child. Screening criteria included a diagnosis of dementia (obtained from the individuals' medical records), a verbal agreement to talk to a student, and a score of 7–20 on the Mini-Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975). We established the lower limit of cognitive functioning in order to ensure that each participant was able to follow instructions from the experimenter. We used the upper limit in order to include participants with at least a mild to moderate level of cognitive impairment. We excluded from participation those individuals who had coexisting neurological diagnoses or severe medical conditions that might have affected cognition. Two individuals, although initially willing to participate, appeared reluctant to talk during the sessions. These two persons averaged about 1.5 min and no more than 8 utterances per conversation, compared to 4 min and 43 utterances per conversation averaged by the other participants. We therefore excluded those two participants from the study as they did not convey much information in the limited amount of time. The mean age for the remaining 12 participants was 82 years ( $SD = 4.2$  years), and the mean MMSE score was 11.5 ( $SD = 3.99$ , range 7–19). Experimenters conducted a total of 6 conversations for each participant (3 topics in 2 conversation conditions) for a total of 36 transcribed interviews. Two conversations of one participant had to be excluded from analysis because the experimenter changed instructions during the interview (starting out with an advice-giving condition and changing into a social conversation condition), and the participant did not want to talk about this topic again. We conducted analyses on the remaining 34 conversations.

### Procedure

Conversations took place in a quiet area in a local adult day care center. Participants conversed with an experimenter (trained students or one of us, regular visitors to the center) on six different occasions about three topics of conversation (marriage, children, and church), either in a social conversation condition or in an advice-giving condition. The experimenter talked with the participants for a little while before starting the interview in which a conversation topic was initiated. For example, in the social conversation condition for the marriage topic, the experimenter would prompt the topic with "Would you tell me about your marriage?" In the advice-giving condition, the (unmarried) experimenter would initiate the interview with "I am thinking of getting married. What advice can you give me about getting married?"

The experimenters randomized the order of conditions and the order of conversation topics across participants; each participant completed no more than

two conversations per day on different topics. Generally, there was a lapse of at least one week between topics in different conditions. If the participant stopped talking about the topic, the experimenter provided a prompt in order to redirect the participant to the topic after the speaker had remained silent for more than 15 seconds. Each interview contained a maximum of 3 such prompts, and the prompts were always almost identical to the initial prompt ("Can you tell me more about your marriage/children/church?" in the social conversation condition and "I am thinking about getting married/having children/joining a church. What other advice can you give me on that?" for the advice-giving one). We determined the length of the interview as the time (in seconds) it took the participant to talk about the topic with three prompts. As a result, the length of interviews varied ( $M = 233.76$  s,  $SD = 90.55$ , range = 82–517 s). The appendix contains an example of an interview.

Experimenters audiotaped the interviews for the purpose of later transcription. We transcribed interviews verbatim, had them checked by a second experimenter, and divided them into separate utterances (see Coelho, 1998, for discourse-analysis definitions). We coded occurrence of discourse categories per utterance in order to avoid confounds with regard to length of conversation. Had we not coded them per utterance, longer conversations would have resulted in a higher number of utterances and possibly a larger number of discourse categories.

We coded transcripts for the occurrence of the following discourse characteristics: (a) consistent with an advice-giving role: imperatives; (b) occurrence of discourse-building components, such as topic maintenance, information content, and local coherence; and (c) occurrence of discourse deficits, such as unreferenced words, empty phrases, and tangents. We also tallied the numbers of words and novel words (words that occurred only once during the conversation) as basic discourse categories in order to assess whether their occurrence differed between conditions. An absence of differences in frequency of words and novel words per utterance would suggest comparable conditions for the conversations.

Examples of imperatives are the words *should*, *you have to*, and *do this*, all of which imply that the speaker is aware of the convention associated with the advice-giving role to direct the conversation partner toward a suggested action or instruction. In order to assess the presence of discourse-building elements, we coded each utterance as either being an on-topic statement or not (topic maintenance). We considered an utterance to be on topic if the content related to the overall topic of the conversation (i.e., marriage, children, or church). We considered an utterance to be off topic if its content did not directly relate to the overall topic. We also coded each utterance as adding new information relative to the previous one (information content) and as having a semantic and syntactic connection relative to the preceding one

**Table 1. Mean Proportions for Discourse-Building Characteristics and Discourse Deficits in Two Role Conditions**

Category	M (SD)	
	Advice	Social Conversation
Basic discourse		
Words	8.39 (.98)	8.17 (1.29)
Novel words	3.54 (.61)	3.41 (.52)
Advice-giving role		
Imperatives	.10 (.08)	.01 (.01)
Discourse building		
Topic maintenance	.75 (.16)	.56 (.16)
Information unit	.83 (.12)	.75 (.17)
Local coherence	.91 (.06)	.81 (.11)
Discourse deficit		
Unreferenced words	.07 (.06)	.13 (.11)
Empty phrases	.04 (.05)	.04 (.07)
Tangents	.18 (.10)	.38 (.15)

*Notes:* Proportions for basic discourse, imperatives, and discourse deficits were the total occurrence of each category in an interview divided by the number of utterances in that interview. Proportions for discourse building were the number of categories coded as present for each utterance divided by the total number of utterances.

(local coherence). We totaled the occurrence of topic maintenance, information content, and local coherence in the interviews into a composite discourse-builder variable and averaged this across the number of utterances per interview.

We coded discourse deficits as the occurrence of unreferenced words, empty speech, and tangents per utterance. An example of an unreferenced word would be in the utterance “I’ve never been married. She does know.” In this case, “she” would be considered unreferenced because the speaker does not specify who “she” is prior to or after this utterance. An example of an empty phrase would be the expression “the whole thing” as a separate utterance in the middle of an otherwise coherent conversation. In this case, it is unclear what the speaker means and how it contributes to the conversation. An example of a tangent would be a sentence that does not refer in any way to the topic of conversation. In the following example, the topic is church, but the utterances have no relationship to this topic: “We ain’t hungry, and we ain’t sleepy, and we ain’t tired.” We totaled the proportions of occurrence of unreferenced words, empty speech, and tangents per condition into a composite discourse-deficit variable (see Dijkstra, Bourgeois, Allen, & Burgio, 2004, for a more complete description of these discourse categories).

The difference in tallying methods for discourse builders versus the other categories was that we counted the occurrence of words, novel words, imperatives, unreferenced pronouns, empty phrases, and tangents every time that category occurred in the interview, whereas we established the presence of

discourse-building categories (information units, local coherence, and on-topic utterances) for each separate utterance. In other words, we determined whether each utterance was an information unit, was locally coherent, or maintained the topic of the conversation.

### Reliability

We assessed reliability in two different ways. We used Cronbach’s alpha for discourse categories that had been coded based on frequency of occurrence in the interview (quantitative categories) and whose values varied to a great extent. We used Cohen’s kappa for the categories that had been coded for occurrence per utterance (qualitative categories); values were either 0 = absent or 1 = present.

In order to establish both measures of reliability, a second experimenter coded 25% of the transcripts on the frequency of all discourse categories after we had established reliability on a practice sample from a different study ( $\alpha > .80$ ). Mean reliability for occurrence of words, novel words, imperatives, unreferenced pronouns, empty phrases, and tangents was demonstrated by Cronbach’s alpha of .91 ( $SD = .09$ , range .73–.98 for words). Cohen’s kappa for the remaining categories varied from .80–.87 ( $M = .84$ ,  $SD = .04$ ).

### Results

Table 1 presents the means and standard deviations of basic discourse categories, the advice-giving category of imperatives, discourse-building categories, and discourse deficits. The means for each category reflect the frequency of occurrence of the categories in the interview after the frequency was divided by the number of utterances in that particular interview. We expected no differences in the occurrence of basic discourse categories (such as words and novel words) between the advice-giving and social conversation conditions; this was confirmed by the results of a *t* test ( $t < 1$ ). We did expect differences between conditions for the occurrence of imperatives, discourse builders, and discourse deficits, with an expected higher occurrence of imperatives and discourse builders in the advice-giving condition and a predicted higher occurrence of discourse deficits in the social conversation condition.

Findings of *t* tests comparing the occurrence of imperatives, discourse builders, and discourse deficits in the advice-giving and social conversation conditions indicated that participants generated (a) more imperatives in the advice-giving than in the social conversation condition,  $t(11.6) = 3.99$ ,  $p < .01$  (equal variance not assumed as Levene’s test for equality of variance was significant,  $F = 15.11$ ,  $p < .01$ ); (b) more discourse-building utterances in the advice-giving than in the social conversation condition,  $t(22) = 3.08$ ,  $p < .01$ ; and (c) more discourse deficits in the social conversation condition than in the advice-giving condition,  $t(22) = 3.38$ ,  $p < .01$ .



## Discussion

The first hypothesis predicted that adults with dementia would be able to activate an advice-giving role as reflected in their more frequent use of imperatives in the advice-giving condition. The results supported this assumption. An advice-giving role requires the activation of social conventions that are associated with this role, such as the use of imperatives to direct the conversation partner toward suggested actions in the future.

The second hypothesis predicted a better preservation of discourse-building components in the advice-giving condition relative to the social conversation condition and lower occurrences of discourse deficits in the advice-giving condition relative to the social conversation condition. Adults with dementia display more coherent, informative, and on-topic communication skills when they are asked to give advice than when they are having a social conversation. It seems that in addition to assuming a role of giving advice as demonstrated via the use of imperatives, adults with dementia who are asked to give advice stay focused on the topic, are informative, and maintain a logical sequence of statements in the conversation.

This study demonstrates that adults with moderate to severe symptoms of dementia may have preserved communication and role-fulfilling abilities when they are assigned the role of giving advice. These preserved abilities include adopting conventions of advice giving (such as using imperatives) as well as demonstrating coherent and on-topic discourse. Possibly, knowledge of structures associated with an advice-giving role is encoded, is utilized occasionally over a relatively long period of time, and seems to be preserved under conditions of cognitive impairment, such as dementia. Participants took their roles quite seriously when experimenters asked them for advice. They were eager to dispense useful information, which suggests that there may be social benefits to their information-giving role assignment. Moreover, the constraints imposed in the advice-giving condition by means of a focus on providing advice on a topic (as opposed to merely talking about it) may have contributed to conversations that were more to the point and therefore contained more discourse-building elements and fewer discourse deficits than those seen in the social conversation condition. The benefits of these role-associated constraints may extend to other information-giving roles, which we explored in Study 2.

### Study 2

Another information-giving role that may display role-associated discourse and preserved-discourse skills is the teacher role. Therefore, we conducted a second study in order to explore whether adults with dementia would demonstrate preserved teacher-role behaviors. We chose the teacher role because,

similar to the advice-giving role, it is an information-giving role that puts constraints on the communication situation, allows for utilization of experiences in the remote past, and requires activation of role-specific language, such as instructions and evaluative feedback.

In this study, each participant had to teach another person how to complete a certain recipe from a booklet containing visual cues. We were interested in examining whether adults with dementia would be able to activate role-specific knowledge (such as using appropriate instructional prompts, providing evaluative feedback to the person receiving the information, and using the visual cues provided in order to accurately sequence multiple steps of cooking). Because a social control condition for this type of task was not possible, we opted to compare the group of participants with dementia to a control group of persons without dementia.

We expected the adults with dementia to assume the teacher role by means of sequencing essential steps to complete the recipe, using specific instructions, including names of ingredients and utensils when giving instructions, and providing evaluative feedback to the person who executed the cooking steps. Compared to cognitively intact older adults, we expected the adults with dementia to perform this task, but to need more time and prompting by the experimenter to finish the task.

## Methods

### *Participants*

Six adults with dementia (four men and two women; mean age 83 years,  $SD = 5.6$  years; mean MMSE = 17.8, range 11–23) and six community-dwelling older adults without dementia (three men and three women; mean age 78.3 years,  $SD = 4.3$  years; mean MMSE = 29, range 27–30) were the teacher participants in this study. As this task could be considered more difficult than the conversation role task, participants in the dementia group had to have a minimum MMSE score of 11 in order to be able to participate. The upper level cut-off MMSE score was 24 (this is a general cut-off to separate those with and without cognitive impairment; Hughes, Berg, Danziger, Coben, & Martin, 1982). We excluded from participation those individuals who had coexisting neurological diagnoses or severe medical conditions that might have affected cognition.

Of the adults with dementia, four attended a local adult day care center, one resided at an assisted-living facility, and one was cared for at home. Undergraduate students at Florida State University in their early 20s (and on one occasion one of us) served as the recipe makers. One of us (the authors) always provided instructions and prompts and also videotaped the session.

In order to avoid potential confounds of practice effects for any of the recipe makers, we instructed

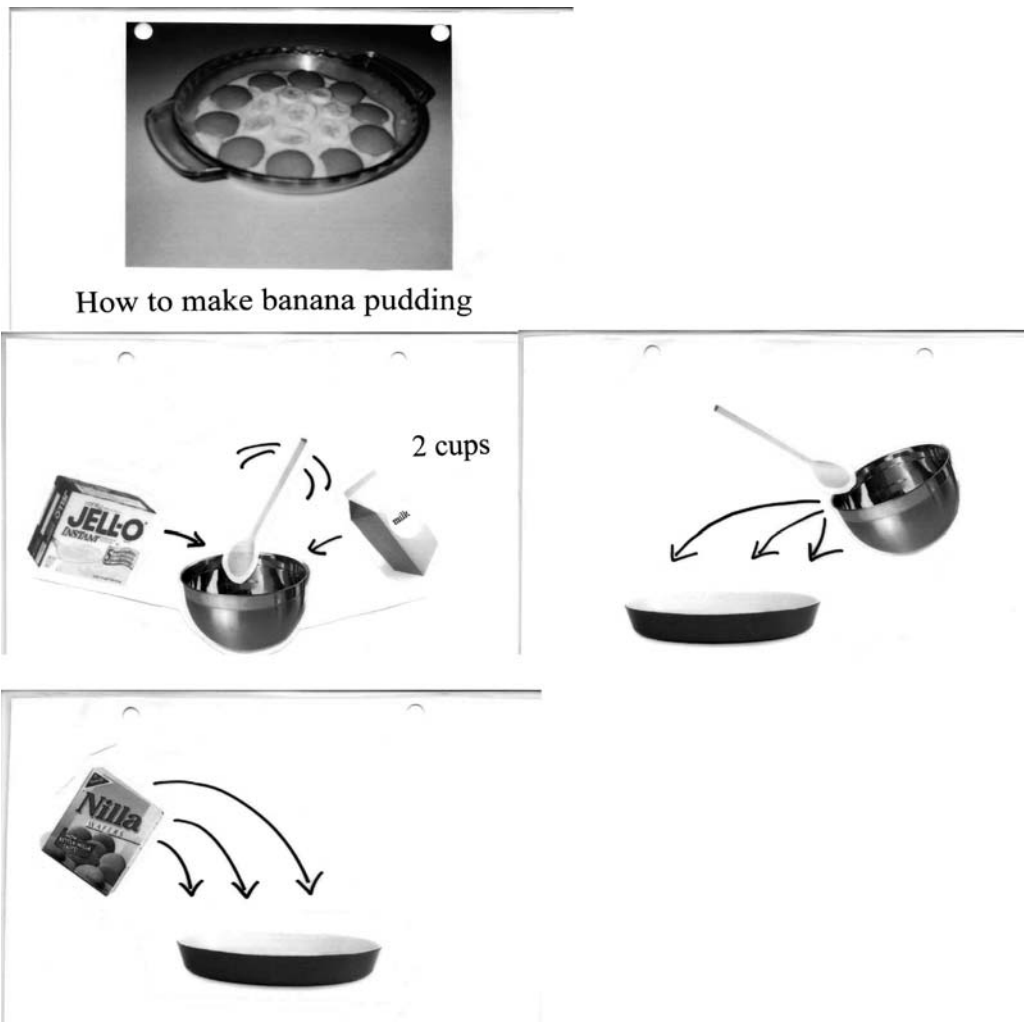


Figure 1. Example of a recipe.

them to follow an instruction only when specifically told to do so and to never comment on or question the instructions but to simply follow them even if they considered them to be incorrect. In order to avoid potential practice effects by participants, experimenters held sessions on different days for all participants with dementia and for most participants without dementia (the final two control group members made the recipes the same day). In order to make sure practice effects did not occur, we compared the occurrence of categories for the first and second session in *t* tests. There were no practice effects for any of the categories (all *t*s < 1.4, *p* > .11).

Recipe makers were taught 2 out of 3 possible recipes from a booklet: “How to make a mini pizza,” “How to make banana pudding,” and “How to decorate a gingerbread man” (one recipe is shown in Figure 1). Experimenters counterbalanced recipes across sessions. This yielded two teaching sessions for each participant; all sessions were audiotaped, videotaped, and transcribed verbatim. In order to ensure the privacy of the participants, we videotaped only the table and hands of the participants (in order to document pointing and gesturing by

the participant), and we substituted names with initials.

### Procedure

We told participants the purpose of the study and that we would be audiotaping and videotaping the study. Participants used a 6-page booklet with visual cues that explained each essential step in completing the recipe. The booklets were identical in the sense that each book had the same number of pages, and each page displayed one specific step of adding an ingredient to the recipe. The front page in each book displayed the finished product. One of us (the authors) provided prompts, if needed, and also videotaped the session.

After the first general prompt of “You are the teacher and you have to tell [the student] how to make this recipe. You will use this booklet to tell [the student] how to make the recipe,” we provided no further prompts unless the participant had completed one step in the recipe and did not give an instruction to the recipe maker of how to proceed. If the instruction was unclear with regard to what had to

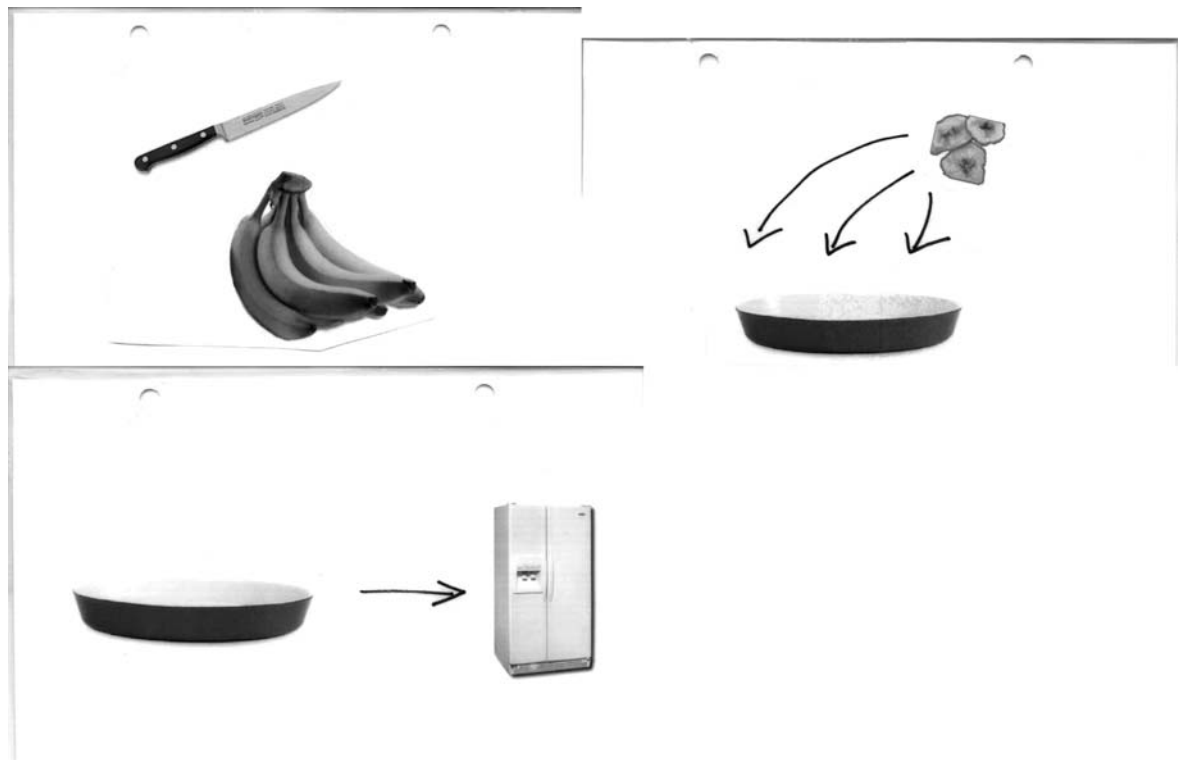


Figure 1. (Continued).

be done, we prompted the participant to verbalize the instruction (“What does [the student] do with the ingredient?”). It was not possible in this study to keep the number of prompts the same for individuals with and without dementia, as the need for prompts depended on the participant; some participants would not have proceeded without prompting. The prompts ( $M$  number for dementia group = 8,  $SD = 4.6$ ;  $M$  number for non-dementia group = 2.5,  $SD = 1.3$ ) kept the participants with dementia sufficiently on task to enable completion of the recipes. All sessions ended with successful completion of the recipe.

### Coding

We designed the coding procedure specifically for this study with the purpose of adequately assessing task performance by the participant. Certain categories reflected teacher-role implementation, such as using instructions (“Stir the ingredients”) and providing evaluative feedback (“That looks good”). We totaled the frequency of occurrence of instructions and feedback per session and averaged them to a composite teacher-role variable. We compiled categories that reflected recipe-related language, such as the number of different ingredients mentioned and the number of different utensils mentioned, into a recipe-language variable. We considered the use of vague or unreferenced words (e.g., “thing” or “this” without referent) and the number of times the participant pointed to a utensil or ingredient without naming the object to be discourse deficits as a result of

lexical access problem. Therefore, we compiled their frequency into a discourse-deficit variable. In addition, we coded language variables (such as number of words and number of unique words) as basic discourse categories. We combined the number of prompts and verbalizations given by the experimenter into an experimenter variable that reflected how much the experimenter had to prompt in order to ensure progress on the task. As the task had a clear beginning and end, we used frequency of occurrence per session as the unit of analysis, not occurrence per utterance as we had in Study 1.

### Reliability

We provided written definitions of the categories to a second coder, who then coded a selection (25%) of transcripts. We used Cronbach’s alpha in order to determine inter-rater reliability for the quantitative measures. We considered all measures except essential steps to be quantitative measures. The mean reliability for the categories was Cronbach’s alpha of .96 ( $SD = .05$ , range .86–1.00). Cohen’s kappa for essential steps was .70.

### Results

Table 2 lists the means and standard deviations for the basic discourse variables (words, novel words), teacher-role variables, recipe-language variables, discourse-deficit variables, and experimenter-role variables in the dementia and non-dementia groups.

**Table 2. Occurrence of Categories for Cognitively Intact Adults and Participants With Dementia**

Category	M (SD)	
	Nondementia	Dementia
Basic discourse		
Unique words	105.42 (54.02)	104.67 (44.21)
Words	375.00 (195)	294.08 (146)
Teacher role implementation		
Essential steps	5.75 (.61)	5.17 (.68)
Instructions	22.08 (9.98)	19.50 (8.79)
Feedback	4.50 (1.76)	2.83 (1.63)
Recipe-related discourse		
Ingredients	6.25 (2.11)	3.00 (1.84)
Utensils	4.08 (1.53)	3.92 (3.95)
Discourse deficits		
Vague words	8.25 (5.65)	29.00 (26.44)
Pointed	3.67 (2.23)	8.25 (4.63)
Experimenter		
Prompts	2.50 (1.34)	8.00 (4.57)
Verbalizations	.08 (.20)	2.50 (1.61)

We conducted univariate analyses of variance on essential steps, teacher role, recipe language, discourse-deficit categories, and experimenter categories with group (dementia vs non-dementia) as fixed factor in order to assess differences between the dementia and non-dementia group and to get some measure of effect size given the small sample size. In order to correct for multiple comparisons, we set alpha at .01 to minimize the chances of a type 1 error. We expected no differences between the groups for general discourse variables (such as words and unique words), nor did we expect differences between essential steps, teacher role, recipe language, and discourse-deficit categories. However, we expected differences for the experimenter categories.

The results indicated no differences between the two groups for words [ $F(1, 10) = .66, \eta^2 = .062, p = .435$ ], for novel words [ $F(1, 10) = .001, \eta^2 = .00, p = .980$ ], for essential steps [ $F(1, 10) = 2.43, \eta^2 = .195, p = .150$ ], for teacher role [ $F(1, 10) = .572, \eta^2 = .054, p = .467$ ], for recipe-related discourse [ $F(1, 10) = 2.07, \eta^2 = .172, p = .181$ ], or for discourse deficits [ $F(1, 10) = 4.61, \eta^2 = .316, p = .057$ ]. As expected, there were differences between groups for the experimenter role that included prompting and requests for verbalization,  $F(1, 10) = 13.75, \eta^2 = .579, p < .01$ . The experimenter used more prompts and requests for verbalizations when interacting with adults with dementia relative to cognitively intact older adults.

## Discussion

We explored whether and to what extent adults with dementia would show preserved teacher-role-related behavior when instructing a student how to make a recipe. The results confirmed that adults with

dementia were able to successfully teach an adult to complete a recipe by using a booklet that contained visual cues. In this way, the adults demonstrated both teacher-implementation procedures (such as giving instructions and evaluative feedback) as well as recipe-relevant discourse (such as naming utensils and ingredients). Adults with dementia managed to do this without resorting to pointing and using vague words, which we considered discourse deficits in this study. Due to the relatively small sample size, power was relatively low for most measures other than the experimenter-role and discourse-deficit measures. There was a trend in the data for a higher number of discourse deficits in sessions with adults with dementia compared to the control group. Therefore, readers have to interpret the results with caution.

## Overall Discussion

Both studies demonstrate preserved role-related and discourse abilities in adults with dementia who are assigned information-giving roles. Adults with dementia were able to fulfill an advice-giving role as well as a teaching role, not only adhering to the conventions associated with these roles but using role-specific language (such as imperatives in an advice-giving role and instructional language and evaluative feedback in a teacher role). These findings support and extend earlier findings on preserved discourse abilities in adults with dementia (Dijkstra, Bourgeois, Burgio, et al., 2002).

One explanation for the source of these preserved discourse and role-associated abilities may be that adults with dementia can utilize communicative situations to their benefit and compensate for memory impairments to a greater extent in a naturalistic situation (such as when they are having a conversation or teaching someone how to do something) than in formal, clinical assessments or lab-based experimental situations (Bschor, Kühn, & Reischies, 2001).

Another explanation could be that role-associated behaviors, such as providing advice and teaching a recipe, tap into long-term episodic memory stores of experiences that can be accessed relatively easily when triggered adequately (Kopelman, 1992; Panegyres, 2004; Piolino et al., 2003). Remote events may be better preserved in adults with Alzheimer's disease, possibly because, over time, repeating the episodic details of the original experience may contribute to a generic semantic record of the event (Piolino et al.). It is likely that memories of previous experiences in which a person gave advice or taught something to another person blend into generic advice-giving or teaching episodes that remain relatively preserved until they are activated with a specific request.

An explanation for the relative lack of differences in discourse and task performance between older adults with and without dementia could be that the experimental setting of a dining table containing all the necessary ingredients and utensils, as well as the external memory aid of a booklet with visual cues and



a step-by-step display of stages of recipe making, provide a rich environment of cues suggesting what needs to be done. Observing others' actions (Mulligan, 2001) can have similar benefits for recall as physically performing a task because of the possibility of multi-modal encoding (visual and verbal). The visual cues in the booklet that corresponded with the actual objects on the table may have functioned as reminders of what the participant was supposed to do, thereby reducing demands on memory capacity. Despite the fact that the participant did not physically chop or mix the ingredients, the active involvement of the participant by pointing to ingredients and utensils, picking up ingredients, and reading what was written on the ingredient container may have facilitated access to semantic memory. This in turn may have made access to recipe-related words easier than otherwise would have been expected to be impaired as a result of semantic memory deficits (Panegyres, 2004). The numerically greater occurrence of vague words and pointing in the dementia group than in the control group could be an indication of access deficits in adults with dementia that would have been more pronounced if visual cues had been absent. Future research could further determine the extent to which active manipulation of relevant objects and visuals could possibly prevent these discourse deficits from occurring.

Adults with dementia appear to be able to fulfill role-specific tasks notwithstanding deficits in short-term memory, working memory, and episodic memory, as long as these tasks take place in an appropriate social and communicative context and the role to be fulfilled is adequately triggered. This is an important finding, because it suggests that these tasks have the potential to enhance the preserved abilities and everyday functioning of individuals with dementia. Successfully assuming specific roles also may contribute to a better quality of life and more rewarding social interactions with peers and caregivers.

Our studies show that preserved role-related and communication abilities may change the perception that adults with dementia are people who are dependent and less communicative to individuals who are able to give advice and teach others. This may help to break the cycle of learned helplessness and perceived incompetence to communicate and could contribute to feelings of self-esteem and well-being (Liang et al., 2001). Recognition of preserved abilities in older adults with dementia by staff and family could help create communicative opportunities that are satisfying to the needs of individuals with dementia and more interactive and engaging for their conversation partners. This most likely would contribute to enhanced quality of life experiences in adults with dementia (Bourgeois et al., 2005).

A limitation of the first study was that we had to exclude two participants because they were unwilling to talk for more than 2 minutes. These two participants tended to be relatively withdrawn in the adult day care center, and one of them indicated that

she frequently experienced pain as a result from arthritis. This implies that communication-based studies, such as this one, can only be successful when the participants involved are inclined to communicate based on their personality and general well-being. In the majority of the cases, adults in moderate to more advanced stages of dementia are happy to talk about the topics provided.

Further research could explore the enactment of other and different roles, such as teaching a young child to complete a puzzle or demonstrating how to get a child's backpack ready for school. Future studies could expand the scope of information giving to other roles as well, such as teacher or peer counselor, in order to help other adults with dementia to complete certain tasks. In order to better capture the social benefits of information-giving roles, investigators could utilize or design self-esteem questionnaires that would be appropriate for this population. This would enable researchers to obtain deeper insights into the implications successful role fulfillment may have on the feelings of self-worth and quality of life in adults with dementia.

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## Appendix

### Transcript of a Social Condition Conversation

Participant 1: 6/21/2005

Interviewer (I): I would like to have a conversation with you about children. Can you tell me a little bit about your children?

Participant (P): I have one child.  
I am living with him and his wife now.  
He is a lawyer and uh . . .  
Oh, when he was in the second grade, he wouldn't (let's see) cooperate with the teacher.  
Uh huh, and they thought he was dumb.  
But, um, they gave him an IQ test of some kind that they were having in the second grade.  
And he wowed them.  
And so then he learned to read.  
He, he just wouldn't try to read.  
He was into rabbits.  
Rabbit was on the ground and then there were squirrels that was and then birds.  
And the next thing he was a bird.

So he had to be, I don't know, motivated, maybe, I don't know.  
I: OK, can you tell me more about your son?  
P: Oh, well, he's a lawyer now.  
He works for the department, state department of revenue.  
They have a patient where there is a divorce and  
one of, one of the couples is to pay out on pay it or they have a court trial.  
He gets put in jail or he pays.  
So, he was in Vietnam.  
And that meant the dog he had was trained to smell explosives.  
And so as they walked through the,  
I don't know, the jungle or whatever, um, the field.  
I: Uh huh.  
P: . . . the dogs, the dog would walk ahead, and he smelled explosives.  
And he would have some type of a stop.  
So he was.  
And he is a very peaceful soul.  
And I don't know how he survived it, but he did.  
So, I guess he had more courage than I would have.  
I: So, can you tell me anything else about children?  
P: Well, I just have, well, I have a grandson. But he is adopted.  
He graduated high school, um, this year. His birth mother left a note, they left him with nuns to be adopted and his birth mother left him a note and said she just couldn't keep him at the time but if he were to ever grow up she would welcome him.  
So about three years ago, well, about two to three years ago he decided he wanted to find out about his birth mother.  
And the, um, nuns that they had left him were contacted, and they were able to contact his mother.  
So he met his mother.  
He has a half brother and half sister, she is married and, uh, they live in Tampa. And that's where he is right now.  
They have been to visit us twice.  
It was a happy ending for him, but I was afraid he would take to them more than to us, and I was a little bit jealous.  
And it worked out OK.  
She is a nice woman.  
And it has worked out OK for him and for us  
I: OK, thank you.