

Running head: COMMUNICATIVE GOALS, OFF-TOPIC SPEECH, AND AGING

Do Younger and Older Adults' Communicative Goals Influence Off-Topic Speech

in Autobiographical Narratives?

Dunja L. Trunk and Lise Abrams

University of Florida

Please address correspondence to:

Dunja L. Trunk, Ph.D.
Social and Behavioral Sciences Department
Bloomfield College
59 Fremont Street
Bloomfield, NJ 07003

Phone: (973) 748-9000, ext. 647

Fax: (973) 748-0489

Email: dunja_trunk@bloomfield.edu

Abstract

The present research investigated younger and older adults' communicative goals and their effects on off-topic speech for autobiographical narratives. Participants indicated their communicative goals by rating preferences among paired goals, e.g., focus-fascinating, one of which was designated as an expressive goal, appropriate for producing elaborative speech, and one which was an objective goal, suited for producing concise speech. They then told stories about episodic and procedural topics, which were rated by groups of younger and older listeners. Age differences emerged in communicative goals, where younger adults clearly favored expressive goals for episodic topics and objective goals for procedural topics. In contrast, older adults' goals were more diverse, consisting of a mixture of expressive and objective goals for both topic types, without a clear preference. Younger adults' goals predicted ratings of off-topic speech assessed by listeners: Younger and older adults were perceived as equivalently focused, coherent, and clear for episodic topics, but older adults were perceived as less focused, less clear, and more talkative than younger adults on procedural topics. These results suggest that age-related changes in off-topic speech emerge as a result of younger adults selecting goals designed to produce more succinct stories.

Keywords: communicative goals; off-topic speech; autobiographical narratives; aging; episodic and procedural topics

Word count for main text: 9,126 words.

Do Younger and Older Adults' Communicative Goals Influence Off-Topic Speech in
Autobiographical Narratives?

Previous research suggests that younger and older adults approach discourse differently, depending on the purpose for the discourse and on their communicative goals or intentions (e.g., James, Burke, Austin, & Hulme, 1998). Communicative goals allow a person to utilize distinctive speech appropriate for various contexts (e.g., Giles & Coupland, 1991). For example, when speaking to others, older adults select expansive discourse, as a reflection of their desire for social interaction and the value they place on the process of talking (e.g., Giles, Coupland, & Wiemann, 1992; James et al., 1998). On the other hand, younger adults who view older adults as having decreased cognitive functioning produce condescending discourse when speaking to older adults (e.g., speak slowly, clearly, loudly), even when the cognitive abilities of older adults do not warrant such condescension (e.g., James et al., 1998; Kemper, 1994). Although the literature suggests that younger and older adults have different communicative goals, there is no empirical research establishing what those goals are. The purpose of the present research was to examine communicative goals in younger and older adults for telling narratives about two different types of topics and to investigate whether those goals influenced the amount of off-topic speech produced.

Although not tested directly, previous research has suggested that communicative goals may influence language production, specifically the level of talkativeness and off-topic speech (OTS; also referred to as off-topic verbosity, Arbuckle & Gold, 1993; Gold, Andres, Arbuckle, & Schwartzman, 1988; Gold, Arbuckle & Andres, 1994). OTS refers to speech that may start out on topic, but quickly becomes prolonged, unconstrained, and irrelevant to the present topic at hand (e.g., James et al., 1998). Arbuckle and Gold (1993) identified two key determinants of

OTS, namely lack of focus and coherence. Lack of focus refers to speech that has a continuous intrusion of irrelevant speech, whereas lack of coherence refers to speech that is lacking in orderly continuity.

Two main hypotheses underlying the causes of age-linked OTS have been proposed: the pragmatic change hypothesis (PCH) and the inhibitory deficit hypothesis (IDH). The PCH maintains that younger and older adults produce different speech as a result of the different communicative goals they hold for their speech (e.g., Boden & Bielby, 1983; Giles & Coupland, 1991). For example, older adults may place greater value on the process of talking and the opportunity for social interaction with others relative to younger adults, particularly when conversing about autobiographical memories, as older adults may view their discourse as part of their identity (e.g., Coupland & Coupland, 1995). In these situations, older adults' communicative goals may be in line with more elaborative conversing, which might then result in increased OTS with age.

James et al. (1998) demonstrated support for this hypothesis by asking younger and older participants to describe three autobiographical topics as well as three pictures depicting some event. The results showed that older adults were more talkative than younger adults in terms of producing more words, but only when describing the autobiographical topics. Similarly, there were age differences in the proportion of OTS, defined as the total number of words that were off-topic, with greater differences for autobiographical topics relative to picture topics. Both findings are consistent with the PCH, which predicted more OTS for older adults when telling stories about autobiographical topics, as they provide older adults with the opportunity to tell elaborative narratives about themselves and their life story. Less OTS occurred in communication tasks involving non-autobiographical information, such as describing pictures of

random events, because in that context, there are more constraints placed on speech production relative to a personal speech topic. With more constraints, the PCH implies that older adults' communicative goals change and become more concise and objective as a function of the context in which they are communicating.

The other explanation for age-linked increases in OTS comes from the IDH (Hasher & Zacks, 1988; Stoltzfus, Hasher & Zacks, 1996; West, 1996; Zacks & Hasher, 1994), which suggests that OTS is caused by an age-linked deficit in inhibiting irrelevant information, such as random thoughts and topics, from working memory. (Arbuckle & Gold, 1993; Pushkar Gold & Arbuckle, 1995). This inhibition deficit leads older adults to talk about topics unrelated to the actual topic at hand and affects all aspects of older adults' language production (e.g., both autobiographical and non-autobiographical speech topics). Support for the IDH comes from several studies (e.g., Arbuckle & Gold, 1993; Arbuckle, Nohara-LeClair & Pushkar, 2000; Glosser & Deser, 1992; Juncos-Rabadan, 1996), evidenced by increased OTS in autobiographical contexts such as life-history interviews, in non-autobiographical contexts such as referential communication tasks, and in the ability to tell stories based on pictures. In these studies, OTS is measured by assessing the relevance of each individual word to the general topic. Therefore, it remains unclear in the literature whether OTS is directly tied to communicative goals or whether it is caused by other factors, such as an inability to inhibit irrelevant information.

The present research offers a holistic and more ecologically-valid technique for assessing OTS compared to the more fine-grained assessments used in previous research, which categorizes OTS at an individual-word level. Previous research has shown multiple ways of operationally defining OTS, but what is to be considered off-topic was ultimately left up to the

experimenter's discretion, which is problematic given the complexity of narratives. For example, individual words, clauses, or sentences in a given narrative may appear to be off-topic in isolation; however, when put in the context of the entire narrative, they may no longer qualify as being off-topic. Therefore, the present research investigated younger and older adults' communicative goals and spoken narratives to shed light on the communicative goals that younger and older adults value (Experiment 1) and whether these goals are predictive of increased OTS with age using a more holistic assessment of OTS from listener ratings (Experiment 2).

The present research also addressed whether communicative goals change as a function of narrative topic within a given memory domain (i.e., autobiographical memories) and whether these topics lead to differing amounts of OTS. Previous research has found evidence for increased OTS for personal topics relative to unfamiliar picture descriptions (e.g., James et al., 1998), but these differences may have been due to differences in the extent to which the topics utilized an autobiographical component. The present research controlled for differences between the two types of narratives by using two different types of autobiographical speech topics, episodic topics (e.g., a favorite vacation) and procedural topics (e.g., a daily routine carried out on a specific day in one's life). Both topics are autobiographical, as they refer back to a personal memory experienced by the speaker; however, they differ in terms of the type of speech they might elicit. The episodic topics were designed to capture a unique autobiographical memory, which might result in more elaborative speech in order to articulate the level of significance that this memorable, one-time event had in the speaker's life. In contrast, the procedural topics were intended to evoke an autobiographical memory containing a sequenced script of events that has occurred numerous times, which may lend itself to more concise speech. The nature of this type

of memory is more factual and inherently contains ordered events, making the need for expressiveness unnecessary for communicating the relevant information.

Experiment 1

The purpose of Experiment 1 was to establish the communicative goals that were favored by younger and older adults and to determine whether these goals differed as a function of type of autobiographical narrative topic, episodic versus procedural. As both topics included an autobiographical component, older adults were expected to favor expressive goals that would allow them to produce more elaborative speech for both episodic and procedural topics. Elaborative speech is appropriate in any autobiographical situation where value is placed on the process of talking, reminiscence, or social interaction, all of which have been linked with older adults (e.g., Giles, Coupland, & Wiemann, 1992; James et al., 1998). In contrast, younger adults were predicted to favor objective goals in line with more concise speech for both topics because they do not value the telling of personal narratives and reminiscence as much as older adults (e.g., Giles & Coupland, 1991; Giles et al., 1992), especially for procedural topics in which personal anecdotes and reminiscence may be less germane for younger adults.

Experiment 1 was also conducted to acquire the autobiographical narratives on episodic and procedural topics from younger and older adults, which would provide the experimental material from which to determine levels of OTS in Experiment 2.

Method

Participants. Participants included 24 younger adults, 16 females and 8 males (18-21 years; $M = 19.8$, $SD = 1.0$), and 24 older adults, 13 females and 11 males (75-87 years; $M = 79.6$, $SD = 3.5$). Younger adults received extra credit in psychology courses for their participation, and older adults were paid \$8 per hour for their participation. Means and standard deviation scores

for several background variables, e.g., education, as well as significance of t-tests between age groups, are shown in Table 1.

Materials. A communicative goals questionnaire (shown in Appendix A) was designed to assess which of two specifically-paired goals was of more importance to younger and older adults when telling autobiographical narratives. This questionnaire was developed as follows. A list of 16 communicative goals was identified, with 3 taken from James et al. (1998) and 13 new goals based on pilot work using younger and older adults' self-reported goals, which indicated that these would be of value. Six of the goals were considered expressive (e.g., interest, fascinating, elaborative, entertaining, stimulating, and educational), and six were categorized as objective (e.g., clarity, focus, comprehensible, simple, logical, and objective). Expressive goals were determined as ones that would encourage greater production of speech, whereas objective goals were expected to keep speech more concise. The dichotomy of expressive versus objective goals was utilized based on previous research, which has suggested that specific dimensions, such as telling an interesting narrative, may be related to the desire to relay a narrative with personal relevance and also to the production of OTS (e.g., James et al., 1998). The remaining four goals (humorous, honest, emotional, imaginative) were not easily categorized and were therefore used as fillers.

The goals were randomly placed into eight pairs, with each pair containing one expressive goal and one representing an objective goal. The questionnaire was designed in this way so that participants could indicate their preferences for expressive or objective goals when telling autobiographical narratives. This forced-choice format allowed us to capture subtle preferences (or lack of) for either an expressive or objective goal, which might not have emerged if each goal was rated independently. Of the eight pairs, six were experimental (clarity-interest;

fascinating-focus; comprehensible-elaborative; entertaining-simple; logical-stimulating; and educational-objective) and two were fillers (humorous-honest, and emotional-imaginative). The filler goal pairs were included to allow participants to think of additional aspects of telling a narrative but were not analyzed.

The questionnaire contained one episodic and one procedural topic, allowing participants to rate their communicative goal preferences for each topic type. The episodic topics were either “a memorable vacation they had taken” or “a memorable party they had hosted or attended”, with half of the participants getting one topic, and the other half getting the other topic. The procedural topics were either “their morning routine” (i.e., the steps they took to get ready to come in to the lab that morning) or “their evening routine” (i.e., the steps they took to get ready for bed the previous evening), also equally divided among participants. Participants' narratives were recorded using a SONY Digital Voice Recorder.

Procedure. Before coming to the laboratory, a communicative goals questionnaire was mailed to 38 older adults and distributed in class to 43 younger adults, with instructions to complete the questionnaire on their own time. The questionnaire was designed to assess which of two specifically-paired goals was of more importance to younger and older adults when telling autobiographical narratives with two different types of topics. The instructions asked participants to think back on an autobiographical memory (one of the episodic or procedural topics described above) and to pretend that they were going to tell a narrative about this memory to a new person they had just met. With this narrative in mind, they were instructed to circle a number between 1 and 7 for each of the eight communicative goal pairs listed on the questionnaire, indicating which goal they valued the most in terms of how they would tell the narrative. The numbers 1-3 represented valuing the left-hand goal more, whereas 5-7 indicated valuing the right-hand goal

more (see Appendix A). The number 4 was to be circled if both communicative goals were valued equally. All participants rated the goals pairs for both an episodic and a procedural topic, with the order of topics counterbalanced across participants.

Approximately three weeks to one month later, 24 participants in each age group who had previously completed the communicative goals questionnaire were tested individually in the laboratory by one of three female younger adult experimenters with whom they were not familiar. The story-telling task occurred first, where participants were told that their narratives would be recorded for future transcription and analysis and that they should speak for 3-5 minutes on each of the two stories. The topics given in the story-telling task were identical to the ones given in the previously-completed communicative goals questionnaire. The order of topic type for storytelling was counterbalanced across participants, as was the choice of topic within topic type. After telling the narratives, participants were asked to complete the communicative goals questionnaire again, identical to the one they filled out previously.

Results

Communicative goals questionnaire. The results of the communicative goals questionnaire were used to determine which communicative goals were of primary value for episodic and procedural topics for younger and older adults. For ease of presentation, the data from three of the goal pairs (fascinating-focus, entertaining-simple and educational-objective) were recoded so that for all pairs, lower numbers on the rating scale (< 4) represent a preference for the objective goal, whereas higher numbers on the rating scale (> 4) represent a preference for the expressive goal. A rating of 4 meant that the two goals were valued equally, so one-sample t-tests were conducted to analyze whether each age group's mean ratings were significantly different from 4, indicating a preference for one goal over the other. A summary of

younger and older adults' goal preferences is presented in Table 2. Goal ratings were then analyzed in a 2 (Speaker Age Group: Younger, Older) x 2 (Topic Type: Episodic, Procedural) x 2 (Time of Ratings: Before narrative, After narrative) ANOVA on the mean ratings for each of the six experimental goal pairs. Table 3 shows the mean ratings from these ANOVAs collapsed across Time of Rating, with each goal pair broken down by speaker age group and topic type. The Time of Ratings variable was included to explore whether participants would be consistent in their ratings and reporting of goals after actually telling stories. This finding emerged, as the Time of Ratings factor was nonsignificant and did not interact with any other factor in all analyses, so it will not be discussed further.

Clarity-Interest. One-sample t-tests revealed that younger adults had preferences on both types of narratives. For episodic topics, younger adults valued interest more than clarity, $t(47) = 13.54, p < .01$, whereas for procedural topics, younger adults valued clarity more than interest, $t(47) = -17.61, p < .01$. In contrast, the t-tests showed that older adults valued interest and clarity equivalently for both episodic topics, $t(47) = 1.56, p > .13$, and procedural topics, $t(47) = -0.87, p > .39$.

The ANOVA revealed a main effect of topic type, $F(1,191) = 111.67, MSE = 1.98, p < .01$, which was qualified by a speaker age group x topic type interaction, $F(1, 191) = 56.10, MSE = 0.20, p < .01$. Younger adults' ratings were higher than older adults' for episodic topics, $F(1,95) = 21.03, MSE = 1.97, p < .01$, whereas older adults' ratings were higher than younger adults' for procedural topics, $F(1,95) = 36.02, MSE = 1.99, p < .01$. No other effects were significant, $ps > .31$.

Focus-Fascinating. One-sample t-tests showed that younger adults again preferred different goals depending on the type of narrative. Younger valued fascinating more than focus

for episodic topics, $t(47) = 9.67, p < .01$, whereas they valued focus more than fascinating for procedural topics, $t(47) = -11.68, p < .01$. In contrast, the t-tests showed that older adults valued fascinating and focus equivalently for both episodic topics, $t(47) = 1.40, p > .17$, and procedural topics, $t(47) = -1.17, p > .25$.

A main effect of topic type was shown by the ANOVA, $F(1,191) = 77.94, MSE = 2.39, p < .01$, and this effect was qualified by an interaction. Speaker age group interacted with topic type, $F(1, 191) = 31.95, MSE = 0.22, p < .01$. Younger adults' ratings were higher than older adults' for episodic topics, $F(1,95) = 11.72, MSE = 2.50, p < .01$, whereas older adults' ratings were higher than younger adults' for procedural topics, $F(1,95) = 21.14, MSE = 2.28, p < .01$. No other effects were significant, $ps > .28$.

Comprehensible-Elaborative. One-sample t-tests illustrated that for episodic topics, younger adults valued elaborative more than comprehensible, $t(47) = 3.97, p < .01$, whereas for procedural topics, younger adults valued comprehensible more than elaborative, $t(47) = -14.68, p < .01$. In contrast, older adults valued comprehensible more than elaborative for both episodic topics, $t(47) = -5.46, p < .01$, and procedural topics, $t(47) = -6.07, p < .01$.

The ANOVA illustrated that there was a main effect of topic type, $F(1,191) = 44.20, MSE = 2.02, p < .01$, and a main effect of speaker age group, $F(1,191) = 16.07, MSE = 0.15, p < .01$. Both of the main effects were qualified by an interaction. Speaker age group interacted with topic type, $F(1, 191) = 38.96, MSE = 0.21, p < .01$, because younger adults' ratings were higher than older adults' for episodic topics, $F(1,95) = 44.80, MSE = 2.37, p < .01$, whereas older adults' ratings were marginally higher than younger adults' ratings for procedural topics, $F(1,95) = 3.01, MSE = 1.67, p < .09$. No other effects were significant, $ps > .39$.

Simple-Entertaining. One-sample t-tests revealed that younger adults valued entertaining more than simple for episodic topics, $t(47) = 19.90, p < .01$, whereas they valued simple more than entertaining for procedural topics, $t(47) = -5.64, p < .01$. In contrast, the t-tests showed that older adults valued entertaining more than simple for both episodic topics, $t(47) = 7.27, p < .01$, and procedural topics, $t(47) = 2.97, p < .01$.

A main effect of topic type, $F(1,191) = 102.20, MSE = 1.92, p < .01$, and a main effect of speaker age group, $F(1, 191) = 6.26, MSE = .14, p < .01$, were qualified by an interaction. Speaker age group interacted with topic type, $F(1, 191) = 47.31, MSE = 0.20, p < .01$, because younger adults' ratings were higher than older adults' ratings for episodic topics, $F(1,95) = 14.68, MSE = 1.25, p < .01$, whereas older adults' ratings were higher than younger adults' ratings for procedural topics, $F(1,95) = 32.65, MSE = 2.58, p < .01$. No other effects were significant, $ps > .40$.

Logical-Stimulating. One-sample t-tests showed similar patterns for younger and older adults. For episodic topics, younger adults valued logical and stimulating equivalently, $t(47) = 1.57, p > .12$, whereas for procedural topics, younger adults valued logical more than stimulating, $t(47) = -17.17, p < .01$. Similarly, for episodic topics, older adults valued logical and stimulating equivalently, $t(47) = -1.45, p > .15$, but valued logical more than stimulating for procedural topics, $t(47) = -4.16, p < .01$.

The ANOVA showed that there was a main effect of topic type, $F(1,191) = 49.37, MSE = 2.19, p < .01$, qualified by an interaction. Speaker age group interacted with topic type, $F(1,191) = 40.33, MSE = 0.21, p < .01$, because younger adults' ratings were higher than older adults' ratings for episodic topics, $F(1,95) = 4.59, MSE = 2.78, p < .04$, whereas older adults' ratings

were higher than younger adults' ratings for procedural topics, $F(1,95) = 18.37$, $MSE = 1.59$, $p < .01$. No other effects were significant, $ps > .17$.

Objective-Educational. One-sample t-tests illustrated that younger adults had preferences on both types of narratives. Younger adults valued educational more than objective for episodic topics, $t(47) = 8.06$, $p < .01$, whereas younger adults valued objective more than educational for procedural topics, $t(47) = -2.20$, $p < .03$. In contrast, the t-tests showed that older adults valued educational more than objective for episodic topics, $t(47) = 3.38$, $p < .01$, and marginally more for procedural topics, $t(47) = 1.94$, $p < .06$.

A main effect of topic type, $F(1,191) = 20.85$, $MSE = 2.50$, $p < .01$, was illustrated by the ANOVA, and this effect was qualified by an interaction. Speaker age group interacted with topic type, $F(1, 191) = 11.42$, $MSE = 0.23$, $p < .01$, because younger adults' ratings were marginally higher than older adults' for episodic topics, $F(1,95) = 3.12$, $MSE = 1.92$, $p < .08$, whereas older adults ratings' were higher than younger adults' for procedural topics, $F(1,95) = 8.47$, $MSE = 3.07$, $p < .01$. No other effects were significant, $ps > .17$.

Discussion

The results suggest some interesting age differences in self-reported communicative goals. Younger and older adults were predicted to favor different goals, which did occur for both episodic and procedural topics. However, the nature of these differences was unexpected. Older adults chose to value a mixture of communicative goals: some expressive, some objective, and some where a clear preference between the two was not made. For example, for procedural topics, older adults reported valuing two objective goals, comprehensible and logical, two expressive goals, entertaining and educational, and two pairings that had no preference for either type of goal. Furthermore, older adults reported virtually the same goals for both episodic and

procedural topics. The consistency in older adults' communicative goals across topic types indicates that their choice of speech was *less* affected by the type of narrative they were telling compared to younger adults, contrary to the suggestion from the PCH that older adults' goals change depending on topic type. In contrast, younger adults' goals had more disparity in their goals for episodic versus procedural topics. Younger adults almost exclusively favored expressive goals for episodic topics, whereas their goals for procedural topics were solely objective.

These results suggest that both younger and older adults may realize the value of expressiveness when telling narratives about episodic topics. A similar finding was observed in James et al.'s (1998) study, where younger adult raters valued expressiveness in older adults' stories as shown by more positive ratings on interest, informativeness, and overall story quality relative to younger speakers' stories. Despite recognizing the value of these expressive qualities in older adults' stories, younger adults are not particularly good at telling expressive narratives themselves (e.g., James et al., 1998), suggesting a complex relationship between what we value in a narrative, what we aim to accomplish when telling stories, and what we actually are able to produce. The results of the present study suggest that unlike younger adults, older adults do not have a definitive preference for either expressive or objective goals when telling autobiographical stories, which may enable their stories to be better-rounded. Both expressive and objective goals may be necessary to tell a more enjoyable story (e.g., Ryan et al., 1992; Kemper et al., 1990; James et al., 1998), and older adults have more experience with what makes for a good story as a function of their increased age (e.g., Boden & Bielby, 1983; Kemper, 1992).

The age differences in selection of goals for procedural topics suggest that older adults may have viewed autobiographical information as more relevant to the procedural topics than did

younger adults. Emphasizing the autobiographical aspect of the procedural topic to a greater extent would encourage older adults to keep similar goals across topics because they are generally interested in personal narratives and reminiscence when communicating (e.g., Boden & Bielby, 1983; Coupland & Coupland, 1995). In contrast, younger adults' communicative goals emphasized simplicity and objectivity with the change of narrative topic, suggesting that they may have found autobiographical reminiscing irrelevant to the description of a daily routine, similar to results with non-autobiographical picture descriptions used in previous research (e.g., James et al., 1998).

The results of the present study support the idea that older adults have typically had more experience with telling stories throughout their life (e.g., Boden & Bielby, 1983; Kemper, 1992), and may therefore see the value of emphasizing the production of autobiographical information over the selection of specific goals. In contrast, younger adults may still be developing their story-telling skills and therefore have a narrower view of which goals make for the best story as well as a more limited ability to utilize multiple types of goals across different narrative topics.

Experiment 2

The purpose of Experiment 2 was to investigate whether communicative goals were related to the actual speech younger and older adults produced, specifically the degree of OTS in their narratives. We used a rating procedure similar to James et al. (1998), who asked younger and older adults to read transcripts of the autobiographical narratives and evaluate them on various dimensions. However, we had raters evaluate both episodic and procedural topics, whereas James et al. (1998) did not get ratings of their picture descriptions. We also used auditory presentation of the transcripts rather than visual presentation so that the narratives would be presented in an identical way for all participants, including auditory cues such as voice,

intonation, prosody, and emphasis on particular words. The age of the speaker was not obvious, as transcripts were re-recorded using the experimenter's voice.

To address OTS via listener ratings, dimensions of focus and coherence were analyzed, using Arbuckle et al.'s (1993) definition of OTS that lack of focus and coherence determine OTS. In addition, the dimensions of clarity and talkativeness were analyzed, as these have been cited as potential outcomes of OTS (e.g., James et al, 1998). In contrast to previous applications of OTS, the present study allowed listeners to base their ratings of focus, coherence, clarity, and talkativeness in terms of a speaker's entire narrative, rather than a word-by-word basis. This more holistic approach of assessing OTS in context, instead of in isolation, would reveal OTS by decreased ratings of focus, coherence, and clarity and increased ratings of talkativeness. In an effort to provide a comparison to the holistic approach, a more traditional measure of OTS was also included in the analyses by accounting for the percentage of off-topic words in the narratives. This comparison would allow us to see whether the holistic approach categorizes OTS in older adults differently from the measures used in previous research.

Method

Participants. Participants included 30 younger adults, 20 females and 10 males (18-21 years; $M = 18.9$, $SD = 0.8$), and 30 older adults, 17 females and 13 males (75-87 years; $M = 74.3$, $SD = 5.6$). Younger and older adults were recruited and compensated in a manner similar to that of Experiment 1. Means and standard deviation scores for background variables and the significance of t-tests between age groups are shown in Table 4.

Materials. The verbatim transcripts of all spoken narratives were read by a female younger adult experimenter and recorded on a SONY Digital Voice Recorder, which presented the narratives to participants. The narratives were recorded in a normal speaking voice, and the

experimenter read the narratives as if reading a story aloud to another person. Disfluencies, stuttering repetitions, and comments given after the story was completed (e.g., "I'm done") were eliminated.

Recorded sets of transcripts were assigned to rater groups, such that each rater group rated 16 narratives, eight from four younger speakers (one episodic and one procedural per speaker) and eight from four older speakers (one episodic and one procedural per speaker). This assignment process yielded six separate rater groups each composed of ten raters, five younger and five older adults. Transcripts were assigned to rater groups such that the six sets of transcripts were as similar in number of words as possible within each rater group.

Booklets containing 16 pages, one page for each narrative, were created. On each page, there were several dimensions, four of which were deemed experimental for the purposes of this experiment. The experimental dimensions were related to the hypotheses of looking at OTS and included the following: (a) focus, (b) logical (c) clarity, and (d) talkativeness. Three of the four dimensions (i.e., focus, clarity, and talkativeness) were used in James et al. (1998). The dimension of logical was added to the present study for the sake of using Arbuckle et al.'s (1993) definition of OTS, and to make its definition more precise for raters, we used the term "logical" to refer to a story that was both sensible and coherent. To the right of each dimension was a 7-point scale ranging from 1 (not at all) to 7 (completely). The other dimensions were fillers, as they were not relevant to the experimental questions and were therefore not analyzed. A sample booklet page containing the four experimental dimensions is shown in Appendix B.

Procedure. Participants were told that they would hear narratives told by real people that had been re-recorded and to evaluate them on various dimensions. Narratives were presented by alternating younger and older speakers' narratives in the same order they were collected in

Experiment 1, such that that the order of topic type and the specific topic within topic type were counterbalanced across listeners. Participants were tested in groups of five, and they took approximately one hour to complete the ratings.

Results

Narrative Characteristics. 2 (Speaker Age Group: Younger, Older) x 2 (Topic Type: Episodic, Procedural) repeated-measures ANOVAs were conducted on mean narrative length with means and standard deviations reported in Table 5. In terms of number of words, there was a main effect of topic type, $F(1,46) = 9.58$, $MSE = 46064.42$, $p < .003$, where speakers produced more words for episodic narratives than procedural narratives. There was also a main effect of age group, $F(1,46) = 10.95$, $MSE = 74303.01$, $p < .002$, where older adults produced more words than younger adults. No other effects were significant, $p > .884$. These findings paralleled length measured in minutes, where there was a main effect of topic type, $F(1,46) = 10.15$, $MSE = 1.08$, $p < .003$, and a main effect of age group, $F(1,46) = 10.92$, $MSE = 1.83$, $p < .002$. Speakers spoke for a longer period of time on episodic topics than procedural topics, and older adults spoke for a longer period than younger adults. No other effects were significant, $p > .946$.

Holistic Measurement of OTS. To directly address OTS, dimensions of focus and logical were analyzed. Focus was defined as whether the speaker stayed on topic, and logical was defined as a sensible and coherent narrative. Decreased ratings on focus and logical would indicate more OTS. A 2 (Rater Age Group: Younger, Older) x 2 (Speaker Age Group: Younger, Older) x 2 (Topic Type: Episodic, Procedural) repeated-measures ANOVA was conducted on each dimension. Rater age group was a between-subjects variable, whereas speaker age group and topic type were within-subjects variables. The mean ratings for focus and logical by speaker age group and topic type are shown in the top half of Table 6.

Focus. There was a main effect of speaker age group, $F(1,58) = 9.81$, $MSE = 0.73$, $p < .01$, which was qualified by an interaction. As shown in Figure 1, speaker age group interacted with topic type, $F(1,58) = 9.99$, $MSE = 0.36$, $p < .01$, because younger and older speakers were equivalently rated on focus for episodic topics, $F < 1$, whereas younger speakers were seen as more focused than older adults for procedural topics, $F(1,59) = 25.68$, $MSE = 0.23$, $p < .01$. Within each age group, younger speakers were rated as more focused for procedural topics than episodic topics, $F(1,59) = 4.68$, $MSE = 0.33$, $p < .04$, whereas older speakers' focus was equivalent for episodic and procedural topics, $F(1,59) = 2.45$, $MSE = 0.23$, $p > .12$. No other main effects or interactions were significant, $ps > .10$.

Logical. Contrary to OTS measured via focus, there were no main effects or interactions for ratings on logical, $ps > .14$.

To indirectly address OTS, dimensions not included in Arbuckle's definition but that were relevant, i.e., clarity and talkativeness, were analyzed. Clarity was defined as clear and easy to follow, and talkativeness was defined as whether the speaker was talkative. Increased OTS would lead to reduced ratings of clarity and higher ratings of talkativeness. The mean ratings for clarity and talkativeness by speaker age group and topic type are shown in the bottom half of Table 6.

Clarity. There was a main effect of speaker age group, $F(1,59) = 8.06$, $MSE = 0.32$, $p < .01$, qualified by an interaction. As shown in Figure 1, there was a Speaker Age Group x Topic Type interaction, $F(1,59) = 6.18$, $MSE = 0.24$, $p < .02$, because for episodic topics, younger and older speakers were rated equivalently on clarity, $F < 1$, whereas for procedural topics, younger speakers were clearer than older speakers, $F(1,59) = 15.29$, $MSE = 0.26$, $p < .01$. Younger speakers were rated as clearer on procedural topics than episodic topics, $F(1,59) = 5.18$, $MSE =$

0.30, $p < .03$, whereas older speakers were rated equivalently on clarity for episodic and procedural topics, $F < 1$. No other effects were significant, $ps > .35$.

Talkativeness. The main effect of rater age group was significant, $F(1,58) = 7.71$, $MSE = 5.39$, $p < .01$, with older adult raters assigning higher ratings than younger adult raters. As shown in Figure 1, a significant main effect of speaker age group, $F(1,58) = 28.13$, $MSE = 0.55$, $p < .01$, occurred but was qualified by a Speaker Age Group x Topic Type interaction, $F(1,58) = 20.50$, $MSE = 0.37$, $p < .01$. For episodic topics, older speakers were rated as marginally more talkative than younger adults, $F(1,59) = 3.13$, $MSE = 0.35$, $p < .08$, whereas for procedural topics older speakers were perceived as significantly more talkative than younger speakers, $F(1,59) = 14.69$, $MSE = 0.49$, $p < .01$. Comparing topics, both younger speakers, $F(1,59) = 29.61$, $MSE = 0.47$, $p < .01$, and older speakers, $F(1,59) = 15.56$, $MSE = 0.28$, $p < .01$, were more talkative on episodic topics than procedural topics. No other effects were significant, $ps > .12$.

Traditional Measurement of OTS. As a comparison for the holistic ratings' assessment of OTS, each transcript from Experiment 1 was also coded for OTS using a coding technique similar to that used in previous research (e.g., item verbosity in Arbuckle et al., 2000; James et al., 1998). In accordance with previous studies, we defined OTS as speech that was not directly relevant to the narrative topic and coded the number of instances of OTS. An instance of OTS was defined as a continuous block of irrelevant speech, ranging from several words to an entire sentence. For example, the following sentences represent a subset from an actual story, and speech categorized as irrelevant is italicized: "My favorite vacation was when my wife and I took a 9-month tour of the United States. *We had both just retired. My wife worked for the school system for over 30 years.* Our trip started out on the east coast." Consistent with previous traditional measurements of OTS, the italicized words in the previous sentences counted as two

instances of OTS, as they were not immediately relevant to the topic of “favorite vacation” regardless of whether the narrator tied this information in with the story later on. The number of instances of OTS for all topics combined ranged from 0 to 3 per story for younger adults and 0 to 6 for older adults.

To account for age differences in narrative length, the *percentage* of words that were off-topic in each narrative was computed by adding up the total number of words in all instances of OTS and dividing by the total number of words spoken for each narrative. Percentage of off-topic words spoken ranged from 0 to 29% for younger adults ($M = 1.83\%$, $SD = 5.99$) and from 0 to 41% for older adults ($M = 7.44\%$, $SD = 11.07$). The mean percentage of off-topic words was analyzed in a 2 (Speaker Age Group: Younger, Older) x 2 (Topic Type: Episodic, Procedural) ANOVA, with means and standard deviations from this analysis shown in Table 7. The results showed a main effect of Age Group, $F(1, 46) = 8.63$, $MSE = 87.46$, $p < .005$, because older adults had a higher percentage of off-topic words than younger adults for both topic types. No other effects were significant, $ps > .11$.

Meeting Goals. To address whether individual speakers utilized their communicative goals to drive their speech in storytelling, we used Pearson correlations to examine potential relationships between an individual speaker's goals (as indicated by the communicative goal questionnaire in Experiment 1) and the ratings of the actual speech they produced in meeting these goals (assessed by independent raters in Experiment 2). Correlations were conducted separately by age group and were collapsed across topic to achieve sufficient power to detect significant effects. The three rated dimensions that were also used as speaker goals in Experiment 1 were focus, clarity, and logical. For ease of presentation, the data were recoded so that higher ratings indicated a stronger preference for objective goals. Thus, positive correlations

were expected (as preference for the objective goal increases, so does the achievement of that goal as determined by raters).

Focus. For younger adults, a Pearson correlation addressed the relationship between speaker ratings of focus-fascinating and listener ratings of focus, and a significant correlation emerged, $r(46) = .56, p < .001$. This finding indicates a strong, positive relationship between speaker ratings of focus-fascinating and listener ratings of focus, where the more value speakers placed on focus relative to fascinating, the higher they were rated on focus by listeners. In contrast, the correlation for older adults was not significant, $r(46) = .03, p > .82$, indicating no relationship between speaker ratings on focus-fascinating and listener ratings of focus.

Clarity. For younger adults, the correlation between speaker ratings on clarity-interest and listener ratings on clarity was also significantly positive, $r(46) = .41, p < .005$. The stronger the speaker's preference for clarity over interest, the higher the listener ratings were on clarity. In contrast, for older adults, the correlation between speaker ratings of clarity-interest and listener ratings of clarity was not significant, $r(46) = .11, p > .45$.

Logical. For younger adults, there was no significant correlation between speaker ratings of logical-stimulating and listener ratings of logical, $r(46) = .13, p > .38$. Similarly, for older adults no significant correlation was found, $r(46) = .02, p > .87$, indicating no relationship between these variables for either age group.

Discussion

The results of Experiment 2 showed that younger and older adults produced speech that differed on OTS, and the degree of OTS when assessed holistically was dependent on the topic. Rater perceptions of the narratives showed age differences in OTS for procedural topics, as older adults were rated as less focused, less clear, and more talkative than younger adults when telling

narratives about these topics. In contrast, there was little evidence of an age-related increase in OTS for episodic topics, where younger and older adults were perceived as equivalently focused, coherent, and clear (although older adults were viewed as marginally more talkative), contrary to previous claims that older adults experience more OTS for autobiographical topics (e.g., Giles & Coupland, 1991; Giles, Coupland & Wiemann, 1992; James et al., 1998). These findings are different from those observed when the narratives were coded on an individual-word level, where older adults produced more OTS than younger adults on both procedural and episodic topics. Assessing OTS holistically allows listeners to judge dimensions thought to make up OTS based on the entire narrative, whereas previous research has defined OTS in terms of number of words that were off-topic (e.g., Arbuckle & Gold, 1993), which fails to account for how instances might tie into something relevant later in the narrative.

These age differences in OTS can be linked to changes in younger adults' communicative goals across topics observed in Experiment 1, unlike older adults' goals, which remained constant and contained a mixture of expressive and objective goals without an obvious preference. It seems that when both age groups hold at least some expressive goals, no age difference in OTS emerges. For episodic topics, younger adults' goals were primarily expressive, and consequently, they produced narratives that were similarly elaborative to older adults, resulting in no age differences in OTS. In contrast, for procedural topics, younger adults preferred only objective goals, and subsequently older adults produced speech that was relatively higher in OTS (as measured directly by focus and indirectly by clarity and talkativeness) than younger adults. Interestingly, even though procedural topics displayed OTS in other measures, logical (i.e., sensible and coherent) did not exhibit any age differences in OTS. Presumably, this

finding can be attributed to younger and older adults holding the same communicative goals, logical over stimulating.

Age differences in OTS may also be explained by age differences in the ability to *meet* one's communicative goals. Younger adults were significantly more effective at meeting their goals, where differences in speakers' communicative goals predicted raters' judgments. Younger adults who held stronger preferences for the goals of focus and clarity produced speech that was rated higher in focus and clarity. In contrast, older adults' goal preferences did not significantly correlate with listener ratings of their speech. One explanation is that younger adults showed a tendency to favor one goal over another to a greater extreme than older adults. Perhaps stronger goal preferences are necessary to be successful in meeting goals during spoken production. For example, older adults' lack of preference for some goal pairings, e.g., fascinating and focus were valued equivalently for procedural topics, may have compromised their ability to meet the goal of focus to the same extent as younger adults (who had a strong preference for focus over fascinating) because older adults included more information in their procedural narratives based on other goals that they held. This interpretation is speculative, however, because collapsing across topics likely resulted in insufficient variance in older adults' data (older adults held similar communicative goals for both topics) to achieve significant correlations between their ratings and listener ratings.

It is worth noting that the age of the raters had no decisive effect on the results of the present study, except for overall higher ratings on talkativeness from older raters relative to younger raters. This finding is perhaps indicative of older adults' differing standards for what constitutes an appropriate narrative. For example, older adults may be more aware of the negative perception of verbosity as well as the prevalent idea that verbosity is related to

increased age (e.g., Arbuckle & Gold, 1993; Gold et al., 1988; Gold, et al., 1994). This increased sensitivity to talkativeness might have influenced older listeners to give higher ratings overall relative to younger listeners.

General Discussion

The results of the present study provide empirical evidence to support previous claims that younger and older adults' speech differs as a function of their communicative goals (Giles et al., 1991; Hymes, 1972; Labov, 1969), and that these goals can shape the discourse a person may choose to utilize in different contexts (Hummert, 1994; Kemper, 1994; Ryan et al., 1986). The present research quantified younger and older adults' communicative goals, some of which differed as a function of the type of autobiographical narratives they intended to tell, and demonstrated that these goals influenced subsequent speech and the occurrence of OTS. The results of Experiment 1 suggest that younger adults' communicative goals were shaped by the topic of discourse more so than older adults, who selected almost identical goals for both topic types. Older adults' lack of definitive preference in choosing one type of goal over another manifested itself in several ways. First, older adults were more likely than younger adults to circle a rating of "4" for a goal pairing, indicating that both the expressive and objective goals were valued equivalently, with no preference for one over the other. Furthermore, even when older adults *did* have a preference within a particular goal pairing, the valued goal fluctuated between expressive and objective goals, rather than consistently favoring one type over the other. This lack of preference has several possible interpretations. One is that older adults favored a more comprehensive set of communicative goals than did younger adults, suggesting that both expressive and objective goals were equally important to them. An alternative interpretation is that older adults were uncertain about which goals were more important to them, illustrating

difficulty deciding whether objective or expressive goals should be emphasized. Although both interpretations are viable, the latter interpretation of uncertainty is consistent with the lack of correlations between older adults' goals and the listener ratings of the actual narratives that they produced. These data suggest that older adults were not successful in meeting a specific goal, which would be more likely to occur if their goals were less clearly defined.

Difficulty with choosing solely expressive or objective goals may result from older adults' relatively acute awareness of the complexity of storytelling. As a result of their increased life experience with storytelling (e.g., Boden & Bielby, 1983; Kemper, 1992), the dichotomy of expressive versus objective goals may have seemed more artificial to older adults and therefore may have been difficult for them to categorize their goals in that way. Through years of practice and experience, older adults are more confident about their communicative goals, and rather than tailoring their goals to the specific topic of conversation, they prefer to adapt the discourse topic to fit their communicative goals, which are well-engrained, easy to invoke, and typically lead to high-quality stories. This explanation is supported by older adults' superior story telling ability (e.g., James et al., 1998; Kemper et al., 1989; Kemper et al., 1990; Pratt et al., 1991), which indicates that older adults know which goals make for a good story and therefore choose to utilize these goals across multiple discourse topics. As a result, requiring older adults to choose a certain type of goal over another would be difficult, especially if the choice is between two goals where neither one is part of the usual repertoire that they use in telling stories or where both are important to them.

Another point to consider when interpreting why older adults' goals rarely changed across topics in the present study is the autobiographical aspect of the narrative topics. Perhaps this aspect was the most salient feature of the narratives to them, and therefore their goals did not

need to shift much from one topic to another. Concentrating on the autobiographical aspect of each narrative topic would allow older adults to tell a more personal narrative, which they generally value to a greater degree than younger adults (e.g., Boden & Bielby, 1983; Coupland & Coupland, 1995), independent of specific goals. Given a different situation, such as non-autobiographical topics like a picture description task, older adults might exhibit a stronger preference for one type of communicative goal over another, particularly objective goals, as the need for expressiveness would no longer be relevant. Another possible influence on goal preferences is the random pairing of expressive and objective goals on the communicative goals questionnaire. Specific pairings may have influenced the strength of the goal ratings. For example, for episodic topics, younger adults' preference for the goal of elaborative, which was paired with comprehensive, was 4.79, whereas their preference for the goal of interest, paired with clarity, was 5.71. Perhaps the preference for elaborative would have been stronger if it had been paired with some other objective goal like clarity. However, while the strength of ratings may have differed as a result of alternate pairings, there is no reason to expect that the pattern of preferences overall would change.

Using a new definition of OTS that employed holistic ratings of focus and coherence, Experiment 2 found that the age differences in communicative goals were predictive of the occurrence of OTS and that younger adults were more successful in meeting their communicative goals than older adults. Additional evidence for the effects of communicative goals in determining speech and subsequently OTS can be seen when comparing the ratings of narratives for the two topics. Older adults' communicative goals were the same for episodic and procedural topics, and their narratives for both topics were rated similarly on focus, coherence, and clarity. Conversely, younger adults' communicative goals did change, becoming more

concise for procedural topics, and the ratings of their narratives reflected this shift: Younger adults were rated as more focused and clear for procedural topics than episodic topics. These results suggest that communicative goals are indeed reflected in the narratives that younger and older adults tell. However, whether older adults are as successful in achieving their goals needs further analysis in situations where older adults' communicative goals are more variable.

Interestingly, the present results suggest that OTS is not a function of older adults changing their speech, as suggested by previous research. Instead, it is younger adults who are altering their speech, i.e., becoming more concise when they acquire more objective goals, which results in an age difference in OTS.

The present results are problematic for the PCH in several ways. The PCH would have predicted more OTS for episodic topics than procedural topics because of the greater personal relevance of the episodic topics. However, this finding did not emerge either in the holistic OTS analysis or in the individual-word OTS analysis. Furthermore, given that procedural topics provide more constraints on speech production than episodic speech topics, the PCH would have predicted a change in older adults' communicative goals for procedural topics, i.e., becoming more concise and objective to match the context in which they are communicating. Again, this did not occur, as older adults' communicative goals remained constant across topics. Although there is support for the claim that age differences in speech are due to a difference in communicative goals held by younger and older adults (e.g., Boden et al., 1983; Giles et al., 1991), the specification of these goals and their effects on OTS is inconsistent with the PCH. The results are also inconsistent with the IDH, which would have expected older adults to have more OTS than younger adults for both topics due to their inability to inhibit random thoughts and topics from intruding into their stories. However, older adults did not have more OTS than

younger adults for episodic topics, which would be especially susceptible to off-topic elaborations. The results are also inconsistent with previous studies claiming that older adults have more OTS and less effective communication skills than younger adults (e.g., Arbuckle et al., 2000; Glosser & Deser, 1992). These inconsistencies could be due to individual-word assessments of OTS used in previous studies, which may overestimate OTS by not accounting for the entire context in which words are used. Support for this conclusion can be observed in the present study, where OTS did emerge for both topics when measuring OTS as the number of off-topic words produced.

It is possible that the specific narrative topics may have influenced the OTS results in the present study. One of the topics used was that of a favorite vacation, which was also used in James et al. (1998), where it produced the weakest evidence of age-related increases in OTS relative to other autobiographical topics. Perhaps topics such as a favorite vacation or party, which were used in the present research, encouraged both age groups to emphasize the autobiographical nature of these topics, thereby resulting in the production of similar narratives. It is possible that an episodic topic, such as describing one's educational background, might have produced more age-related differences in OTS, as it did in James et al. (1998). For example, younger adults might produce a more concise narrative than older adults about their educational background because younger adults' education is not yet completed and is occurring in the present, making it easier to describe without invoking autobiographical information from the past. However, older adults' educational background is a story from the distant past, which may encourage greater emphasis on the autobiographical aspects.

Similar to topic, the narrative situation itself may also have influenced the results. For example, in choosing the communicative goals, participants were told to imagine telling their

stories to “a new person they had just met.” The socioemotional selectivity theory (e.g., Carstensen, 1992) suggests that goals emphasized during interactions with a stranger versus a close friend differ for younger and older adults. It is possible that younger and older adults' goals were influenced differently by such an audience depending on who they might have imagined the new person to be (i.e., same-aged peer vs. someone older vs. someone younger than themselves). A similar influence may have occurred because the experimenter was younger, which created intra-generational interactions for younger adults and inter-generational interactions for older adults. Future research should establish the importance of these potential influences.

The findings of the present research limit the conclusions drawn from previous findings and bring about a more detailed understanding of OTS and its relationship to communicative goals. The present research shows that younger and older adults' communicative goals differ, and these differences can explain the occurrence (or lack) of OTS in autobiographical narratives. Age-related differences in OTS may also be a function of younger adults' willingness to emphasize a certain type of goal over another, whereas older adults are less likely to do so in autobiographical contexts. One could argue that older adults are not necessarily producing OTS, but rather speech that is in line with their communicative goals, which have been developed through a lifetime of experience with what makes for a good story. Communication is not only necessary for the concise exchange of information, but it also allows for a chance to reminisce about one's life. Perhaps that is why older adults are considered superior storytellers (e.g., Ryan et al., 1992; Kemper et al., 1990, James et al., 1998). Contrary to negative perceptions about older adults' speech, older adults' communicative goals give them some advantages in the production of discourse.

References

- Arbuckle, T. Y., Nohara-LeClair, M., & Pushkar, D. (2000). Effects of off-target verbosity on communication efficiency in a referential communication task. *Psychology and Aging, 15*, 65-77.
- Arbuckle, T. Y., & Pushkar Gold, D. (1993). Aging, inhibition, and verbosity. *Journal of Gerontology, 48*, 225-232.
- Boden, D., & Bielby, D. (1983). The past as resource: A conversational analysis of elderly talk. *Human Development, 26*, 308-319.
- Carstensen, L. L. (1992). Social and emotional patterns in adulthood: Support for socioemotional selectivity theory. *Psychology and Aging, 7*, 331-338.
- Chapman, S. B., Ulatowska, H. K., King, K., Johnson, J. K., & McIntire, D. D. (1995). Discourse in early Alzheimer's disease versus normal advanced aging. *American Journal of Speech Language Pathology, 4*, 124-129.
- Cooper, P. V. (1990). Discourse production and normal aging: Performance on oral picture description tasks. *Journal of Gerontology: Psychological Sciences, 45*, 210-214.
- Coupland, N., & Coupland, J. (1995). Discourse, identity and aging. In J. F. Nussbaum & J. Coupland (Eds.), *Handbook of communication and aging research* (pp. 79-103). Hillsdale, NJ: Erlbaum.
- Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). Mini-mental state: A practical method for grading the state of patients for the clinician. *Journal of Psychiatric Research, 12*, 189-198.
- Giles, H. & Coupland, N. (1991). *Language: Context and consequences*. Pacific Grove, CA: Brooks/Cole.

- Giles, H., Coupland, N., & Wiemann, J. (1992). "Talk is cheap..." but "My word is my bond": Beliefs about talk. In K. Bolton & H. Kwok (Eds.), *Sociolinguistics today: International perspectives* (pp. 218-243). London: Routledge.
- Glosser, G., & Deser, T. (1992). A comparison of changes in macrolinguistic and microlinguistic aspects of discourse production in normal aging. *Journal of Gerontology: Psychological Sciences*, 47, 266-272.
- Gold, D., Andres, D., Arbuckle, T., & Schwartzman, A. (1988). Measurement and correlates of verbosity in elderly people. *Journal of Gerontology: Psychological Sciences*, 43, 27-33.
- Gold, D. P., Arbuckle, T. Y., & Andres, D. (1994). Verbosity in older adults. In M.L. Hummert, J. M. Wiemann, & J. F. Nussbaum (Eds.), *Interpersonal communication in older adulthood* (pp. 107-129). Thousand Oaks, CA: Sage.
- Gould, O. N., & Dixon, R. A. (1993). How we spent our vacation: Collaborative storytelling by younger and old adults. *Psychology and Aging*, 8, 10-17.
- Hasher, L., & Zacks, R. T. (1988). Working memory, comprehension, and aging: A review and a new view. In G. H. Bower (Ed.), *The psychology of learning and motivation* (Volume 22, pp. 193-225). New York: Academic Press.
- Hayslip, B. (1981). Verbosity and the projective test performance in the aged. *Journal of Clinical Psychology*, 37, 662-666.
- Heller, R. B., & Dobbs, A. R. (1993). Age differences in word finding in discourse and nondiscourse situations. *Psychology and Aging*, 8, 443-450.
- Hummert, M. L. (1994). Stereotypes of the elderly and patronizing speech. In M.L. Hummert, J.M., Weimann, & J.F. Nussbaum (Eds.) *Interpersonal communication in older adulthood* (pp. 162-184). Thousand Oaks, CA: Sage.

- Hymes, D. (1972). Models of the interaction and social life. In J.J. Gumperz & D. Hymes (Eds.), *Directions in sociolinguistic: The ethnography of communication* (pp. 35-71). Oxford, England: Basil Blackwell.
- James, L. E., Burke, D. M., Austin, A., & Hulme, E. (1998). Production and perception of "verbosity" in younger and older adults. *Psychology and Aging, 13*, 355-367.
- Juncos-Rabadan, O. (1996). Narrative speech in the elderly: Effects of age and education on telling stories. *International Journal of Behavioral Development, 19*, 669-685.
- Kemper, S. (1994). "Elderspeak": Speech accommodations to older adults. *Aging and Cognition, 1*, 1-10.
- Kemper, S., Kynette, D., Rash, S., O'Brien, K., & Sprott, R. (1989). Life-span changes to adults' language: Effects of memory and genre. *Applied Psycholinguistics, 10*, 49-66.
- Kemper, S., Rash, S., Kynette, D., & Norman, S. (1990). Telling stories: The structure of adults' narratives. *European Journal of Cognitive Psychology, 2*, 205-228.
- Labov, W. (1969). The logic of nonstandard English. *Georgetown Monographs on Language and Linguistics, 22*, 1-31.
- North, A. J., Ulatowska, H. K., Macaluso-Haynes, S., & Bell, H. (1986). Discourse performance in older adults. *International Journal of Aging and Human Development, 23*, 267-283.
- Pratt, M. W., & Robins, S. L. (1991). That's the way it was: Age differences in the structure and quality of adults' narratives. *Discourse Processes, 14*, 73-85.
- Pushkar Gold, D., & Arbuckle, T. Y. (1995). A longitudinal study of off-target verbosity. *Journal of Gerontology, 50B*, 307-315.
- Ryan, E. B., Giles, H., Bartolucci, G., & Henwood, K. (1986). Discourse performance in older adults. *International Journal of Aging and Human Development, 23*, 267-283.

- Ryan, E. B., Kwong See, S., Meneer, W. B., & Trovato, D. (1992). Age-based perceptions of language performance among younger and older adults. *Communication Research, 19*, 423-443.
- Shewan, C. M., & Henderson, V. L. (1988). Analysis of spontaneous language in the older normal population. *Journal of Communication Disorders, 21*, 139-154.
- Stoltzfus, E. R., Hasher, L., & Zacks, R. T. (1996). Working memory and aging: Current status of the inhibitory view. In J. T. E. Richardson, R. W. Engle, L. Hasher, R. H. Logie, E. R. Stoltzfus, & R. T. Zacks (Eds.), *Working memory and human cognition* (pp. 66-88). New York: Oxford University Press.
- Ulatowska, H. K., Cannito, M. P., Hayashi, M. M., & Fleming, S. G. (1985). Language abilities in the elderly. In H. K. Ulatowska (Ed.), *The aging brain: Communication and the elderly* (pp. 125-139). San Diego, CA: College-Hill Press.
- Webster, J.D. (1998). Attachment styles, reminiscence functions, and happiness in younger and elderly adults. *Journal of Aging Studies, 12*, 315-330.
- West, R. L. (1996). An application of prefrontal cortex function theory to cognitive aging. *Psychological Bulletin, 120*, 272-292.
- Zacks, R. T., & Hasher, L. (1994). Directed ignoring: Inhibitory regulation of working memory. In D. Dagenback & T. H. Carr (Eds.), *Inhibitory processes in attention, memory, and language* (pp. 241-264). San Diego, CA: Academic Press.

Author Notes

This article is based in part on Dunja Trunk's dissertation. This research was supported by a Sigma Xi Grant-in-Aid of Research awarded to Dunja Trunk. We thank research assistants Paige Spencer and Kimberly Gorski for assistance in data collection, transcription of narratives, and data entry. We also thank Lori Altmann, Susan Bluck, and Ira Fischler for their valuable input and critique.

Correspondence concerning this article should be sent to Dunja Trunk, Psychology Department, Bloomfield College, 59 Fremont Street, Bloomfield, NJ, 07003. Email: dunja_trunk@bloomfield.edu.

Appendix A

Communicative Goals Questionnaire

Circle a number between 1 and 7 for each of the following communicative goal pairs:

	1	2	3	4	5	6	7	
Clarity								Interest
telling a narrative that is understandable, straightforward, and unambiguous								telling a narrative that keeps the listener's attention and makes the listener want to hear more
	1	2	3	4	5	6	7	
Fascinating								Focus
telling a narrative that is intriguing and contains unique information								telling a narrative that stays on topic
	1	2	3	4	5	6	7	
Comprehensible								Elaborative
telling a narrative that makes sense and is easy to follow								telling a narrative full of details and expanding on ideas
	1	2	3	4	5	6	7	
Entertaining								Simple
telling a narrative that is amusing to listen to								telling a narrative without frills, using little or no elaboration
	1	2	3	4	5	6	7	
Logical								Stimulating
telling a narrative that is sensible and coherent								telling a narrative that is thought-provoking

Humorous	1	2	3	4	5	6	7	Honest
telling a narrative that is funny and amusing								telling a narrative that is sincere and serious
Educational	1	2	3	4	5	6	7	Objective
telling a narrative that is instructive and enlightening								telling a narrative that without expressing personal feelings and opinion
Emotional	1	2	3	4	5	6	7	Imaginative
telling a narrative while showing a range of emotions								telling a narrative that is creative and original

Appendix B

Rater Evaluation Sheet

Please circle the number that best fits your evaluation of the narrative you just heard on the following dimensions:

(a) focus – Did the speaker stay focused on the topic? 1 2 3 4 5 6 7
(not at all) (completely)

(b) logical – Was the story sensible and coherent? 1 2 3 4 5 6 7
(not at all) (completely)

(c) clarity- Was the story clear and easy to follow? 1 2 3 4 5 6 7
(not at all) (completely)

(d) talkativeness – Was the speaker talkative? 1 2 3 4 5 6 7
(not at all) (completely)

Table 1

Means and Standard Deviations for Background Variables in Experiment 1

	<u>Speaker Age Group</u>			
	<u>Younger</u>		<u>Older</u>	
	M	SD	M	SD
Years of Schooling*	14.23	0.98	15.73	2.63
Health Rating (max 10)*	8.71	1.16	7.58	1.41
Vocabulary (max 25)*	15.17	3.14	21.38	2.18
Forward Digit Span**	7.42	0.97	6.75	1.51
Backward Digit Span	5.17	1.40	5.04	1.30

*indicates $p < .05$, **indicates $p < .10$

Table 2

Younger and Older Adults' Goal Preferences for Episodic and Procedural Topics in Experiment

1

Goal Pairs	<u>Episodic</u>		<u>Procedural</u>	
	Younger	Older	Younger	Older
<i>Clarity-Interest</i>	Interest	No preference	Clarity	No preference
<i>Focus-Fascinating</i>	Fascinating	No preference	Focus	No preference
<i>Comprehensible-Elaborative</i>	Elaborative	Comprehensible	Comprehensible	Comprehensible
<i>Simple-Entertaining</i>	Entertaining	Entertaining	Simple	Entertaining
<i>Logical-Stimulating</i>	No preference	No preference	Logical	Logical
<i>Objective-Educational</i>	Educational	Educational	Objective	Educational

Note. Expressive goals are shown in italics.

Table 3

Mean Ratings of Goal Pairs as a Function of Speaker Age Group and Topic Type in Experiment

1

	<u>Episodic</u>				<u>Procedural</u>			
	<u>Younger</u>		<u>Older</u>		<u>Younger</u>		<u>Older</u>	
	M	SD	M	SD	M	SD	M	SD
Clarity-Interest	5.71	0.87	4.40	1.76	2.04	0.77	3.77	1.82
Focus-Fascinating	5.50	1.07	4.34	1.95	2.27	1.03	3.69	1.85
Comprehensible-Elaborative	4.79	1.40	2.69	1.67	2.15	0.87	2.60	1.60
Simple-Entertaining	6.29	0.80	5.42	1.35	2.90	1.36	4.77	1.80
Logical-Stimulating	4.38	1.67	3.65	1.66	1.96	0.83	3.06	1.57
Objective-Educational	5.29	1.11	4.79	1.62	3.48	1.64	4.52	1.86

Note. The scale ranges from 1-7, with lower values favoring objective goals and higher values favoring expressive goals. A value of 4 means that both goals were valued equivalently, with no preference.

Table 4

Means and Standard Deviations for Background Variables in Experiment 2

	<u>Rater Age Group</u>			
	<u>Younger</u>		<u>Older</u>	
	M	SD	M	SD
Years of Schooling*	13.40	1.07	17.02	3.32
Health Rating (max 10)	7.97	1.54	8.23	1.28
Hours per Day Spent Writing*	2.55	1.70	1.84	0.84
Hours per Day Spent Reading	2.97	1.55	2.64	1.37
Hours per Day Spent Watching TV	2.24	2.13	2.81	1.84
Hours per Day Spent Doing Crossword Puzzles	0.21	0.68	0.54	1.07

*indicates $p < .05$

Table 5

Length of Narratives Transcribed in Experiment 2

Narrative Length	<u>Episodic</u>				<u>Procedural</u>			
	<u>Younger</u>		<u>Older</u>		<u>Younger</u>		<u>Older</u>	
	M	SD	M	SD	M	SD	M	SD
Number of Words	309	218	487	307	167	99	358	298
Time (in minutes)	1.52	1.07	2.45	1.58	0.86	0.49	1.76	1.39

Table 6

Younger and Older Listeners' Ratings of Younger and Older Speakers' Narratives in Experiment

2

Dimension	<u>Episodic</u>				<u>Procedural</u>				
	<u>Younger</u>		<u>Older</u>		<u>Younger</u>		<u>Older</u>		
	M	SD	M	SD	M	SD	M	SD	
Younger Raters									
Focus	4.20	0.99	4.12	1.05	4.77	1.06	4.25	0.77	
Logical	3.86	0.82	3.94	0.93	4.16	1.20	4.02	0.87	
Clarity	4.15	0.92	4.14	0.77	4.47	0.81	4.08	0.78	
Talkativeness	4.28	0.73	4.73	0.89	3.54	0.92	4.13	0.91	
Older Raters									
Focus	4.73	0.96	4.42	1.20	4.81	1.13	4.37	1.22	
Logical	4.18	0.94	3.94	1.22	4.19	1.05	4.11	1.23	
Clarity	4.34	0.90	4.25	0.96	4.48	0.92	4.14	1.09	
Talkativeness	5.01	0.92	4.94	1.06	4.38	1.24	4.78	1.03	

Table 7

Percentage of Off-topic Words for Younger and Older Speakers as a Function of Topic Type

Age Group	<u>Topic Type</u>			
	<u>Episodic</u>		<u>Procedural</u>	
	M	SD	M	SD
Younger	3.26	8.22	0.40	1.23
Older	6.05	8.34	8.83	13.29

Figure Caption

Figure 1. Mean ratings of focus, clarity and talkativeness averaged across rater age group for younger and older adults' episodic and procedural topics in Experiment 2. Range: 1 = *not at all*; 7 = *completely*.

