
The Analysis of Conversational Skills of Older Adults: Current Research and Clinical Approaches

Analyse des aptitudes de conversation des personnes âgées : recherche actuelle et approches cliniques

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Abstract

The number of older adults requiring the assistance of speech-language pathologists has increased and will continue to increase in the coming decades as the adult population in Canada grows older. The need to look at functional measures of communication such as conversation has never before been greater. The present article reviews the literature on conversational discourse in normal older adults. The discussion offers a context against which clinicians can interpret the diagnostic findings of their older clientele. The existing research has been grouped into three different approaches (i.e., linguistic, psychological, and sociolinguistic) depending on the nature of the study. Suggestions are made regarding the interpretation of these findings for the clinical practice of speech-language pathology.

Abrégé

Le nombre de personnes âgées qui requièrent l'aide d'un orthophoniste a augmenté et s'accroîtra davantage au cours des décennies à venir avec le vieillissement de la population canadienne. Jamais n'a-t-on eu autant besoin d'étudier le discours conversationnel ou les autres mesures fonctionnelles de la communication. Le présent article passe en revue ce qui a été écrit sur le discours conversationnel chez les adultes âgés normaux. L'analyse fournit aux cliniciens un point de départ pour l'interprétation des constatations diagnostiques sur leur clientèle âgée. Les recherches ont été regroupées en fonction de trois approches distinctes (linguistique, psychologique et socio-linguistique), selon la nature de l'étude. Les auteurs formulent des suggestions sur l'interprétation de leurs constatations au niveau de l'orthophonie clinique.

Speech-language pathologists (SLPs) are often called upon to make judgments about what constitutes a disordered conversation. The task of determining what is normal communication is particularly complicated in the normal aging population because of cognitive, physiological, and

sensory changes, adjustments in social status and roles, and stylistic differences that emerge with age. As yet, researchers and clinicians have not been able to operationalize, for example, how many digressions from the primary topic of conversation are permissible or the turn-taking patterns that are required before an older adult's contribution is considered disordered. For instance, if a 90-year-old person describes his Christmas holiday dinner and includes details regarding the colour of the napkins, is this considered normal? In this article we will review the current literature relevant to conversational discourse in normal aging, providing clinicians with an overview of what we know at present about the conversational skills of older adults. We will discuss approaches that are used to examine conversational discourse of the elderly and offer some considerations for interpreting their performance.

Theoretical Issues

The Nature of Conversation

Conversation is considered by many to be a purely linguistic event. In fact, early studies of conversation in adults concentrated solely on its linguistic and nonverbal constituents, such as the number of words exchanged, type-token ratios, the number of turns taken, and the like (Critchley, 1984; Duncan, 1972; Duncan & Fiske, 1977; Halliday & Hasan, 1976). Later, process oriented models such as those developed for text (e.g., Kintsch & van Dijk, 1978) were applied to verbal discourse in an attempt to explain how linguistic information is held together at both the microstructural and macrostructural levels. By far the greatest influence on our understanding of conversation was the development of pragmatic theories (e.g., Austin, 1962; Bates, 1976; Prutting & Kirchner, 1987; Searle, 1969). These theories propose that a conversation is much more

than a linguistic event and should be viewed as an interactional phenomenon that supports the communication of sentiments, observations, opinions, and ideas. Unlike other linguistic and cognitive operations, conversation is considered an interactional event involving reciprocal exchanges between at least two people (Myllyniemi, 1986). At the very least, conversation is seen to consist of the organization of meaning relationships, and to involve the retention of linguistic material and sensory and cognitive processing of both verbal and nonverbal symbols (Poyotos, 1982). Most importantly, pragmatic theories consider that conversation is shaped by the influences of contextual factors (e.g., speaker status, physical and psychosocial environments, etc.). Conversation then can be viewed as a combination of linguistic-based information, psychological (other than language) processes, and sociological conventions that are all inextricably linked, and which form a complex phenomenon.

Conversational Discourse and Normal Aging: A Linguistic Perspective

Although it is difficult to ignore the many factors that play a role in the conversational discourse of older adults, some investigators have examined only the linguistic content of their conversations without making hypotheses about the underlying cognitive processes. We refer to this approach as the linguistic perspective. In early studies of communication in the elderly, older adults were found to be no different from younger speakers, and observed differences were attributed to physiological factors such as age-related changes in respiration, phonation, and articulation (Meyerson, 1976). As researchers became more interested in the linguistic content of older adults' conversations, observations focused on the number of different lexical items and the morphosyntactic complexity of sentences (Critchley, 1984; Emery, 1985; 1986; Maxim & Bryan, 1994; Walker, Roberts & Hedrick 1988).

Only recently have linguistic-based investigators become interested in true discourse issues of conversational performance in older adults. Stover and Haynes (1989) looked at how participants between the ages of 30 and 90 years shifted and maintained topics of conversation and how they were able to keep the conversation cohesive. The authors found that more topics were maintained by the older participants and that the younger participants gradually shifted from one topic to another more often. This was in contrast to Boden and Bielby (1986) who found that older adult participants were able to change topics more subtly. Stover and Haynes hypothesize that older participants may produce more topic maintenance utterances because they have larger information stores and, therefore, more information to share. However, it is also possible that

increased topic maintenance among the elderly reflects mental inflexibility.

Cohesion was another area where older participants differed from younger participants. Stover and Haynes (1989) found that their older participants produced fewer complete ties (i.e., links between ideas in adjacent utterances) and more incomplete ties, especially in terms of personal and demonstrative lexical items. The presence of incomplete ties suggests that the participants used words for which the referent could not be identified in the previous utterance (example from Stover & Haynes, 1989, p. 140, "I like ice cream. *He* does too."). The increased number of incomplete and incorrect ties among the older participants confirms the results of previous studies showing increased referential ambiguity in the elderly (Ulatowska, Cannito, Hayashi & Fleming, 1985). Stover and Haynes agree with others who state that ambiguity might reflect egocentricity on the part of older adults (North, Ulatowska, Macaluso Haynes, & Bell, 1986; Ulatowska et al., 1985). Increased ambiguity might also reflect a compensatory strategy for working memory problems or difficulties with attention systems (see Kwong See & Ryan, this issue).

Along with narrative and procedural discourse tasks, Ulatowska et al. (1985) looked at older adults' conversational skills using a semi-directed interview task. Subjective judgments of relevance, clarity, and overall discourse quality were obtained from three professionally trained raters using a nine-point scale. The elderly participants were rated as significantly poorer on all three global measures, including their comprehension of the interviewer's questions. Problems with participants' ambiguity in co-referencing also were found in the narrative and procedural discourse tasks. In a later report of this same study (North et al., 1986), the authors postulate the existence of a correlation between reduced communication skills (as measured in their study from subjective ratings of relevance, clarity, and quality) and cognitive decline in the elderly. They conclude that communication with older adults should be formulated so that it is less demanding linguistically and cognitively.

Using a spontaneous language task (i.e., picture description), Shewan and Henderson (1988) found a decline in language performance with advancing age. Significant differences in communication efficiency and the number of paraphasias were observed using the Shewan Spontaneous Language Analyses (SSLA). Communication efficiency was defined as the rate of communicating information (content units/unit of time). All other measures, such as the number of utterances, speaking time, rate, utterance length, articulation accuracy, melodic line, grammatical complexity, grammatical errors, content units, and repetitiveness were not significantly different in the old versus the young

participants. Similarly, Cooper (1990) found that most aspects of oral discourse (on a narrative discourse task) including production, elaboration, complexity, speech disfluency, conciseness, and information imparted do not change with advancing age.

In a recent study, Gould and Dixon (1993) observed the self-generated storytelling abilities of young and older adults. Ten young married couples (mean age 28.5 years) and ten older married couples (mean age 70.7 years) were asked to collaborate in recounting a trip they had shared. In terms of *structure*, they found that older adults speak more slowly, use more words per clause, and use more words overall. Chronological ordering of events shows no age differences. In terms of *content*, older couples produce more subjective content and are more descriptive than younger couples.

If there are few differences in older participants' oral expressive discourse in comparison to that produced by younger participants, can we assume that there are no differences in receptive abilities? Several studies have found no age differences between young and old participants with regard to processing semantic information. Hess and Arnould (1986) found no age differences in participants' abilities to identify explicitly and implicitly stated information in sentences that were read to them. Although Davis and Ball (1989) found several age differences in participants' processing of syntactic versus semantic information, Waldstein and Baum (1992) found that on-line processing of semantic and syntactic information (using reaction time) is not compromised with advancing age. Radvansky, Gerard, Zacks and Hasher (1990) observed that older participants were as likely as younger participants to generate and use mental models when processing incoming information. The authors concluded that all participants were able to organize the information around linguistic representations of events rather than through the linguistic expressions that describe the events.

Using a more interactional-based context, Hupet, Chantraine, and Nef (1993) examined young and old participants' abilities to construct a mutually acceptable referent. Although the experiment was not on conversational discourse per se, it is relevant to the discussion of conversation. Pairs of young and elderly unacquainted partners were given identical sets of ten Tangram figures (abstract figures) arranged in different orders. With a partition separating them, partner A was asked to indicate to partner B the order in which he should place his set of figures so that the two figures would match. Because the figures were abstract representations, the partners could resort only to mutually known referents to facilitate communication, for example, "*It's the one that looks like an*

angel." The researchers examined partners' efficiency in communicating the information (i.e., number of turns needed, number of referents, etc.) and the method used by the partners in arriving at the solution. Results showed that the young participants used both definite references and labels more quickly. Also, the older partners needed more turns and more words to find a shared referent.

Spilich (1983), in a much earlier study, found that older participants do not differ from younger participants in terms of their use of highly thematic information, but do differ in recalling text-based information that is less important in the overall propositional structure. The older participants were able to recall the gist of the information, but not some of the details which they might have judged to be irrelevant. In a recognition task, the elderly preserved the meaning of the text but experienced more difficulty selecting sentences that were exact in terms of surface structure. Spilich concludes, as do Hupet et al. (1993), that there may be qualitative differences in the way linguistic information is processed and stored by older adults.

In summary, the literature offers only preliminary descriptions of the linguistic information contained in the conversational discourse of older adults. To date, relatively few studies have examined conversational skills per se, while others have hypothesized what conversational behaviour might look like, based on experimental studies designed to approximate a conversational context. It appears thus far, that despite age related changes to voice quality and speaking rate, few substantial linguistic changes are evident in the conversations of older adults. Expressively, older adults may exhibit reduced efficiency of communication and an increased level of ambiguity due to imprecise referencing. Receptively, older adults may experience difficulty decoding complex syntactic information. Although older participants appear to be as able to comprehend implicit messages as younger participants, they may be less able to remember detailed information about a conversational theme. Hence, the linguistic information stored when processing conversational discourse might be qualitatively different from that stored by younger participants.

Conversational Discourse and Normal Aging: A Psychological Perspective

In addition to describing the linguistic behaviour of older adults, some investigators attempt to associate the abilities needed for conversational discourse with cognitive changes associated with aging. Kemper, Kynette, Rash, O'Brien, and Sprott (1989) investigated the issue of working memory deficits in conversational discourse of normal older adults. They explored the relationships among education, memory

ability, vocabulary, health and the language abilities of older adults. They also examined the syntactic complexity of the participants' language as the discourse genre varied. Two groups of individuals aged 18 to 28 years and 60 to 92 years were interviewed individually for 30 to 50 minutes. Participants were asked to engage in three tasks including (a) an oral questionnaire, (b) an oral expository discourse about the person they admired the most, and (c) a written description of a significant event in their life. It was hypothesized that oral discourse tasks versus written tasks represent a fragmented and complex genre of discourse and should yield the least syntactically complex productions. Also, it was assumed that participants would have greater opportunities for speaker-audience involvement and a limited amount of time to plan their spoken output. Conversely, the written expository discourse was seen as the most integrated and detached. It was hypothesized that this genre should result in productions with the most syntactically complex sentences because of the decreased speaker-audience involvement and greater time allotted for planning output. Results show that regardless of educational level, young adults with greater memory capacity produce more syntactically complex sentences, especially on written tasks. This pattern was not observed among the elderly participants. Kemper and colleagues present two different interpretations. The first suggests that older adults have working memory limitations which prevent them from producing complex syntactic forms despite having more time to plan their output. The second suggests that older adults do not use complex syntactic forms in written expository tasks because they have learned over time that these sentences are more difficult to comprehend.

Kausler and Hakami (1983) explored whether there were age differences in participants' abilities to retain topics of conversation. Young and elderly participants were given a series of 12 conversational topics to discuss. After presentation of the last topic, participants were asked to recall as many topics as they could. A recognition task was then administered to examine the participants' ability to identify specific questions. Half the participants received explicit instructions to remember the topics while the other half did not (i.e., retention was intended to be incidental). There were no significant differences between the intentional versus incidental recall conditions. Recall of topics was superior for the younger group but there was no significant age difference on the recognition task. The authors conclude that older adults have little difficulty encoding topics of conversation but that they may experience difficulty retrieving the memory traces as they process conversational content.

Cohen (1979) makes similar claims in an earlier study based on a task that required participants to draw correct inferences. Cohen found that older participants are less able

than younger participants to make inferences, to detect semantic anomalies, and to extract the gist of information. Older participants are also more likely to relate irrelevant prior knowledge. The author suggests that this does not reflect problems in older adults' inferential reasoning abilities but rather that inferencing is a stage of cognitive processing that is dropped when the processing demands become too great. Errors are seen to reflect problems with the retrieval of prior knowledge when interpreting current incoming information.

In another experimental study, Gerard, Zacks, Hasher, and Radvansky (1991) found that their elderly participants had trouble inhibiting the recall of erroneous associations during the acquisition of new facts. Irrelevant information was activated and remained there for a longer period of time. The longer activation is thought to interfere with processing time. Gerard et al. (1991) suggest that this interference might reflect problems at the level of the attention systems. Tun, Wingfield, and Stine (1991) found, however, that working memory span is the one cognitive function which clearly affects participants' language processing abilities. When working memory span is controlled, young and old participants perform similarly on recall of expository passages, suggesting a correlation between working memory span and the recall of verbal information. Although the results show that the attention system is burdened for both young and old participants, the findings are inconclusive with regard to whether the task is more taxing on the elderly participants' attention system.

The relationship between cognitive functions, such as memory and attention, and the conversational skills of older adults has puzzled investigators over the past decade and a half and continues to perplex them. The relative preservation of verbal memory versus visuospatial memory in the elderly is well documented (Koss, Haxby, DeCardi, Schapiro, Friedland, & Rapoport, 1991). How this difference influences conversational discourse is not clear. Age related deficits in discourse memory involve a complex interaction among participant, task, and text characteristics (e.g., semantic content, syntactic structures, implicit versus explicit information, etc. [see Ska & Joannette, this issue]). Zelinski (1988) suggests that age differences are more evident (a) when participants with good verbal ability are compared to participants with low verbal ability, (b) when narratives are compared to expository discourse tasks, and (c) when short texts are compared to long texts. For instance, Light and Albertson (1988) present evidence that there is no age difference in the use of pragmatic information *unless* the stimuli overwhelm working memory processes. Pratt, Boyes, Robin, and Manchester (1989) note a relationship between working memory span and the production of adequate cohesive ties (i.e., links between ideas in adjacent utter-

ances) in a story retelling task. In a task that more closely approximates conversational discourse, Drevenstedt and Bellezza (1993) found that older participants were perceived to be less cohesive in their discourse than younger participants. Rather than retelling a story generated by the experimenter, the participants were asked to generate their own stories and to recall them. Three subgroups of elderly participants were formed based on the results. The first group generated good stories but could not recall them, the second narrated and recalled stories just as well as the younger participants, while the third group did not narrate or recall well. Cognitive tests revealed that the last group suffered from a general memory deficit.

In summary, few studies shed clear light on the cognitive processes that underlie conversational discourse in normal older adults. As noted in the previous section on linguistic perspectives of conversation in the elderly, there is evidence that older adults generally do not have problems encoding the topic of conversation but may experience difficulties retrieving detailed information pertaining to that topic. These results point to working memory deficits but also perhaps to attention problems which reflect older participants' inability to inhibit existing information already stored in memory.

Conversational Discourse and Normal Aging: Sociolinguistic and Psychosocial Perspectives

The literature on the sociolinguistic and psychosocial perspectives of the conversations of older adults has addressed several issues. These include establishing and retaining a sense of self and social identity, creating and maintaining relationships, partner and context-dependent influences, and the social actions of communication. Related literature in ethnomethodology, a subspecialty in sociology, has described talk produced primarily by adults under the age of 65 years, focusing on the rules and patterns of interaction, and the social and linguistic structures that constitute their conversations (Psathas, 1995). In this section, the findings from studies that explore the social structure of older adults' conversations will be discussed.

Communication accommodation theory (Coupland, Coupland, & Giles, 1991; Coupland, Coupland, Giles, & Henwood, 1988) describes the social forces that act on speakers to modify their speech, language, and nonverbal behaviours for different conversation partners in order to achieve satisfactory communication. Outgrowths from this theory are the conceptualization of over-accommodated communication with the elderly and the Communication Predicament of Aging model (Ryan, Giles, Bartolucci, & Henwood, 1986). Over-accommodated communication and the Communication Predicament of Aging describe how

negative stereotypes, in concert with social forces, constrain the communication opportunities of older adults. Over-accommodated communication to older adults, often termed *elderspeak*, *secondary baby talk*, or *patronizing speech*, is characterised by simplified grammar and syntax, slower speaking rate, increased loudness, exaggerated pitch contours, elementary semantic content, and non-supportive nonverbal behaviours (e.g., limited eye contact, inappropriate proxemics, finger and/or toe tapping) (Caporeal & Culbertson, 1986; Kemper, 1994; Ryan et al., 1986; Ryan, Orange, & MacLean, 1993; Whitbourne, Culgin, & Cassidy, 1995). Use of the over-accommodated speaking registers and nonverbal behaviours are rated by both young and older adults as demeaning and disrespectful (Ryan & Cole, 1990; Ryan et al., 1986; Ryan, MacLean, & Orange, 1994). Moreover, young and old adults alike perceive that a typical 75-year-old will suffer more conversational problems than a typical 25-year-old and will require accommodated communication (Ryan, Kwong See, Meneer, & Trovato, 1994). These negative perceptions of the conversational skills of older adults can lead to patronizing communication, contribute to reduced opportunities for social interaction, and restrict the maintenance of a unique self-identity. For example, Baltes, Wahl, and Reichert (1991) found dependency-reinforcing communication patterns between institutionalized older adults and caregiving staff. The communication patterns of the caregiving staff helped extinguish older adults' independence in communication and daily activities and, in turn, minimized their social roles as conversationalists. Hummert (1994) provides an excellent review of the current literature on stereotypes of the elderly and patronizing communication patterns.

Studies of inter- and intragenerational communication and the construction of a self-identity show that *elderliness* is developed differently based on the age of the interactants (Green, 1993). Coupland, Coupland, and Grainger (1991) found that young adults in young-old dyadic conversations create a negative identity for the older adult partner on the basis of false assumptions about loneliness and physical, emotional, and mental frailty. Conversely, old-old couples co-construct positive identities for one another using linguistic-based topic introduction and topic-linking structures to advance the social interaction, and to confirm their roles as collaborative partners. Taylor (1994) notes that the frailty label attached to older adults is based on long-standing historical and cultural constructs that influence intergenerational relations. He hypothesizes that the link between aging and frailty is manifest in the language used by young and old members of society (including caregivers, institutions, and older adults) to validate its symbolic construction and representation of older adults. Interestingly, recent evidence shows that even within a population of cognitively impaired older adults (e.g., those with

Alzheimer's disease) the social identity of *self* and *selves* is expressed in conversational interactions with other adults through the participants with Alzheimer's use of personal pronouns (e.g., *I, we, us*) (Sabat & Harré, 1992). How young and old caregivers respond in conversational contexts to support these self-representations remains unknown and warrants further study.

Another widely held negative social perception of older adults' conversational performance is the belief that they are all loquacious. *Off-topic verbosity (OTV)* and its psychosocial consequences, first described by Gold and colleagues, has been examined thoroughly over the past decade. OTV is characterized by abundant spoken output that lacks thematic focus due to the intrusion of irrelevant content (Gold, Andres, Arbuckle, & Schwartzman, 1988). In a series of studies, OTV was shown to correlate with increasing age, the personality characteristic of extroversion, high levels of stress (i.e., few financial resources, difficulty with transportation, poor health), and lower levels of social support (Arbuckle & Gold, 1993; Gold et al., 1988; Gold, Andres, Arbuckle, & Zieren, 1993). The social consequences of OTV are that high levels become aversive to partners, resulting in lower levels of social support and less satisfaction with the social support network (Gold, Arbuckle, & Andres, 1994). Interestingly, the loss or diminished importance of social roles (e.g., through retirement) is hypothesized to bring on high levels of OTV (Gold et al., 1994).

In a study that examined the lack of topic coherence (a characteristic of OTV), Gould and Dixon (1993) found that older couples produce more unshared topics and use fewer back-channelling behaviours than do younger couples. They hypothesize that the elderly couples possess limited abilities to recall specific details and therefore opt to be more *entertaining* in their storytelling. Likewise, the increased use of monologue by the older participants might reflect a difficulty in dividing attention between the internal cognitive activity of generating a story schema and the external social force of sharing the story with a conversational partner. Finally, perceptions of what was asked by the experimenter may be different for older versus younger adults. Older adults may perceive that the experimenters are seeking a more entertaining story whereas younger couples may perceive that the experimenter wants details of their stories.

In summary, investigations that adopted sociolinguistic and psychosocial perspectives of older adults' conversational performance identified social and self-identity issues as important outcomes in inter- and intragenerational communication. Negative stereotyped perceptions of older adults' conversational competence, held by young and old adults alike, result in over-accommodated communication that is described as demeaning and patronizing. The outcomes of over-accommodated communication are the loss of

social roles, reduced communicative, social, and physical independence, the lack of recognition of a unique self-identity, and the perpetuation of the stereotype that frailty is common among the elderly.

Preliminary Conclusions

From the above discussion, along with Wood and Kroeger's (1995) recent review of discourse analysis in research on aging and Kemper's (1992) thorough discussion of language and aging issues, it is apparent that few studies have concentrated on conversational discourse in the normal aging population. Those investigators who attempted to look at this genre often used topic-directed interview formats or other structured tasks designed to approximate the interactional (although not natural or spontaneous) component of conversation. The extrapolation of findings from such methodologies to true conversational contexts is, at best, tenuous. In the next section of this paper we will discuss approaches SLPs may use to examine the conversational performance of older adults.

Clinical Assessment and Intervention Issues

The Legacy of Speech Act Theory

Speech-language pathologists have used a variety of approaches to guide the assessment and interpretation of conversational discourse, and to formulate individualized therapy plans. We regularly request that clients engage in a quasi-conversation during each assessment by asking them to provide a sample of extended spoken discourse. Our analyses of the conversational discourse are often restricted, however, to noting the presence or absence of word finding problems, errors in grammar and syntax, type-token ratios, problems with melodic line, and the presence and type of various paraphasias. Clinicians who have more time per client may count the number of words, and note whether or not the client uses pronominal or lexical co-referencing. Others may use a global checklist of conversational behaviours. Still others might undertake an analysis of adjacent utterances (i.e., termed adjacency pairs), using speech act theory to guide their analyses. Unlike the procedure of counting words or describing the grammatical correctness of a conversation, speech act analyses (Austin, 1962; Searle, 1969) offer the first true pragmatic option for looking at conversation. Using speech act analysis as a theoretical base, clinicians proceed by analyzing conversations in terms of speaker intentions (e.g., question, request, summons, promise, etc.). Adjacency pair analyses involve recognizing the intentions associated to adjacent utterances and determining whether the sequence of intentions is logical according to a pre-determined order (e.g., an answer follows a question).

Speech act analysis, as it is applied to conversational discourse, suffers several drawbacks. First, speech act analysis often lacks an empirical and normative base, especially in terms of a scoring system. Second, as with most conversational analysis perspectives, nonsystematic application of the scoring system may skew findings by misrepresenting the data. Third, although speech act analysis may consider the speaker's intent, it is insensitive to influences such as partner status (e.g., familiar versus unfamiliar) and context (e.g., topic, physical location, etc.). Fourth, speech act analysis does not consider the interpretive nature of conversation (Moeschler, 1993). Speech act analysis tells us little about word-meaning relationships in the conversation or the cognitive underpinnings of the client's behaviours. Fifth, the relevancy (i.e., ecological validity) of speech act analysis as a basis for therapeutic planning is questionable. Lastly, the whole idea of speech act analysis as it pertains to adjacency pairs may lack a firm theoretical motivation.

Levinson (1983) presents four arguments against speech act models of dialogue and the notion of adjacency pair analysis. First, he argues that speech acts are not single unique acts (i.e., they can express several acts simultaneously). For example, *Would you like a drink?* performs the speech act of offering as well as the speech act of requesting. Second, Levinson argues that unit acts cannot always be segmented as suggested by speech act theory. For instance, silences can have an illocutionary force and, hence, be very communicative. Third, adjacency pair theory, which states that a certain speech act must follow a first speech act (e.g., a greeting follows a greeting or an answer follows a question, etc.), is not well grounded in fact. For instance, an assertion can be followed by a whole array of speech acts, any of which are as appropriate as the other. Finally, Levinson argues that speech act theory appears to assume that topic is always preserved. Of course, this is not always so in conversational data where topic initiations and shifts occur frequently.

However, the identification of the number and type of speech acts produced by conversational partners offers SLPs an expeditious manner of scoring reciprocal events in a conversation and empowers clinicians to develop goals that incorporate specific speech acts in therapy. This being said, clinicians should be cognizant of the limitations associated with speech act analyses, including those discussed above.

Checklists, Questionnaires, and Inventories

Besides speech act analysis, SLPs commonly use checklists, questionnaires, and inventories of communication to examine (directly and indirectly) conversational behaviours. Several of the instruments developed over the

past two decades can be useful for clinical practice with older adults. The Appendix contains a summary of key checklists, questionnaires, and inventories that clinicians might find suitable for use with older clients. The list is not meant to be exhaustive, but to show the host of functional communication features and conversational behaviours that can be scored or rated.

The clinician's decision concerning which instrument(s) to use depends on several important considerations. These include (a) the clinician's theoretical perspective(s) of the conversational performance of older adults in general, (b) the clinician's questions concerning a specific client's performance, (c) the linguistic, cognitive, and psychosocial factors thought to influence conversational performance, (d) the clinician's familiarity with the instrument, (e) the manner of administration and scoring (clinician or caregiver scoring versus client self-report), and (f) the availability of the tool. The advantages of using checklists, questionnaires, and inventories cross several domains. First, the clinician may be able to summarize important conversational behaviours in a comprehensive manner. Second, administration and completion normally are fast and relatively simple versus the labour-intensive alternative of conversational sample collection, and data coding and analysis. This advantage is particularly relevant in the current climate of heavy case-loads, reduced financial resources, and the lack of personnel to help with diagnostic and therapeutic activity. Third, scores may be useful for identifying areas that require further detailed analyses via traditional conversational sampling and analysis methods. Last, scores may be useful for documenting gross and domain-specific changes in conversational performance over time.

Several caveats need to be considered, however, before choosing a checklist, questionnaire, or inventory. First, many instruments are cursory overviews of communication (e.g., CADS; FCSI; see Appendix). They may not contain descriptions of behaviours that the clinician wishes to examine. Second, most, if not all, are not standardized, especially on an older adult sample (e.g., FCP; PP; CADS; FCSI; see Appendix). Moreover, several have weak theoretical foundations (e.g., FLCI; CETI; RSCCD; see Appendix). Their development is based primarily on clinical impressions rather than on empirical models of conversation. Therefore, there are few empirical data for comparative purposes. Fourth, the scoring and rating systems may be too broad, lacking the specificity needed to record detailed aspects of performance (e.g., DAP; PP; FCSI; see Appendix). Finally, the breadth of behaviours included in the instrument, while suitable for several different populations, may be insensitive to the heterogeneous communication performance profiles that are well documented in normal older adults (e.g., DAP; FCP; PP; CADS; see Appendix). Experienced clinicians will

take into consideration the advantages and disadvantages of each instrument before making an informed decision regarding which to use.

Perspectives for Analysing Conversations of Older Adults

So which of the three perspectives (i.e., linguistic, psychological, or sociolinguistic) is most useful for analysing the conversations of older adults? Choosing the most useful and appropriate perspective will depend on the question(s) you ask about your client's skills and behaviours (i.e., what you wish to examine). For example, the ability to name an object is dependent upon several different processes such as intact visuoperceptual recognition, access to and retrieval from an intact semantic system, and access to intact phonological and articulatory systems. A comprehensive assessment would include an evaluation of processes at all levels within each of these systems. Without considering inter- and intrasystemic interactions, however, we might examine the integrity of the phonological system without verifying the soundness of the other systems or their influence(s) on naming. This would lead to a misinterpretation concerning the client's naming performance. The advantage, however, is that it would allow a detailed description of at least one of the factors potentially affecting the client's naming behaviour. Parallels can be drawn for conversation. If one chooses to study turn-taking only from a linguistic perspective, then answers will be found based solely on linguistic interpretations of performance. The influence of other factors such as attention may not be known but could be taken into consideration by the clinician when analysing the client's discourse from a cognitive perspective. Because we do not have a single comprehensive model of conversation at present, we suggest that SLPs focus first on one aspect of conversation rather than try to describe the discourse in its entirety. Possible questions that a clinician may ask are:

1. What exactly puzzles me about this sample of disordered discourse?
2. What aspects (e.g., linguistic, pragmatic, cognitive) do I want to analyse?
3. What is the single most disturbing aspect of the discourse? For example, Is it the gradual breakdown of communication? Is it the maintenance of topic (or lack thereof)? Is it the social appropriateness (or lack thereof)?
4. More important, the clinician needs to ask: What theoretical approach or perspective seems best suited to explain what may be transpiring in this sample of conversation?

The questions posed, the objectives of the assessment, and the features of conversations which clinicians wish to

analyse are factors in choosing an appropriate theoretical framework.

General Considerations for Evaluating the Conversations of Older Adults

Despite a somewhat extensive literature, researchers and clinicians have not established normative values of conversational performance for older adults. For example, the exact number of digressions from the main topic that are normal for a 90 year old person remains unknown. Moreover, we do not know the extent to which cultural factors influence conversational discourse as most of the existing work is based on unilingual American or British participants. Certainly turn taking behavior and perceptions of older adults might vary across cultures. We do know, however, that there are certain behaviours that are more characteristic of older adults and should be taken into consideration during evaluations. From the studies to date, we have learned that certain changes which might have been attributed to pathological processes are actually signs of normal aging. For example, issues of off-topic verbosity and decreased efficiency of communication may be signs of aphasia, yet they are also associated with normal aging. Although individually each characteristic may be part of a pathological process, collectively they may suggest a normal aging process. Outlined below are several clinically-based suggestions to help guide the evaluation and interpretation of the conversational performance of older adults.

Physiological considerations

Clinicians must be cognizant always of the age-related physiological changes in respiration, phonation, articulation, vision, hearing (i.e., presbycusis), and musculo-skeletal systems, and how these changes influence older adults' conversations. The effects of these changes on communication are well described in several good overviews (see Shadden, 1988 and Ripich, 1991 for discussions of age associated changes in speech, language, voice, and hearing in older adults).

Linguistic considerations

When evaluating the conversations of older adults, clinicians need to consider a broad range of *normative values*. For example, older adults may use comparatively more words than younger adults (Shewan & Henderson, 1988). When tallying the number of words, T-units, and the like, clinicians must be prepared to accept a large range of performance (quite possibly in terms of total score values) before deciding that the older client's performance is abnormally logorrheic. Further, it is likely that older adults will give more units of information in their conversations but

will be less efficient overall. During preliminary analyses, clinicians may view these features as circumlocutory, when in fact they are typical of normal aging.

Several studies have shown that older adults include subjective information in their discourse (Kemper, Rash, Kynette, & Norman, 1990; Obler, 1980; Pratt & Robins, 1991). Conversations, therefore, may include more personal anecdotes and be considered slightly more *entertaining* in their qualitative value as compared to the conversations of younger adults. Further, based on the current literature, older clients may maintain topics of conversation longer and may be less flexible with topic shifting (Stover & Haynes, 1989). Clinicians also must be aware that older adults may easily identify and contribute to a general topic but may miss some of the thematic details.

Studies provide evidence showing increased ambiguity and frequent use of incomplete or nonexistent cohesive ties in the conversations of older adults (Kynette & Kemper, 1986; Ulatowska, Hayashi, Cannito, & Fleming, 1986). As well, the comprehension of syntactically complex sentences is difficult for older adults. Clinicians must come to accept referential ambiguity as part of the spoken output in normal older adults. Moreover, frequent misunderstandings of centre-embedded, left-branching sentences, or compound sentences containing multiple commands may very well be considered reasonable for certain cohorts of normal older adults (Baum, 1993).

Psychological considerations

Age related changes in cognition, such as memory and attention, also will affect the older adult's conversational discourse. The exact roles played by attention and memory in conversational discourse are not known. Based on the literature so far, clinicians might consider reducing processing demands when assessing older adults. In order to maximize the older adult's performance, it is important to provide more time to process and to ensure that smaller portions of information are given at any one time. Taxing the older adults' working memory system may increase the level of ambiguity in their discourse.

Sociolinguistic and psychosocial considerations

It is clear that the social identity of older adults is formulated to a large degree through the language, speech, and nonverbal components of communication. Over-accommodated communication, especially in young-old adult dyads, is based on ageist views and negative stereotypes of older adults. Breaking down these barriers is the first step in helping older adults retain control over their identities as independent persons and conversationalists. The

Communication Enhancement Model of aging (Ryan, Meredith, MacLean, & Orange, 1995) provides a theoretical framework for optimizing communication with older adults. The model proposes that caregivers recognize and respond to age related cues (e.g., physical features or speech and voice characteristics) on an individual basis rather than in response to stereotyped expectations. This then fosters unbiased, multi-focused assessments of conversational performance which are unencumbered by negative perceptions of competence. Identification of true measures of conversational performance empowers older adults, optimizes their well-being, increases their effectiveness as conversationalists, increases the satisfaction of conversational partners, and ultimately, maximizes conversation skills and opportunities.

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References

- Arbuckle, T. Y., & Gold, D. P. (1993). Aging, inhibition, and verbosity. *Journal of Gerontology: Psychological Sciences, 48*, 225-232.
- Austin, J. (1962). *How to do things with words*. Cambridge: Oxford University Press.
- Baltes, M. M., Wahl, H. W., & Reichert, M. (1991). Successful aging in long-term care institutions. *Annual Review of Gerontology and Geriatrics, 11*, 311-338.
- Bates, E. (1976). *Language and Context: The acquisition of pragmatics*. New York: Academic Press.
- Bayles, K. A., & Tomoeda, C. (1994). *Functional Linguistic Communication Inventory*. Tucson, AZ: Canyonlands.
- Baum, S. R. (1993). Processing of center-embedded and right-branching relative clause sentences by normal elderly individuals. *Applied Psycholinguistics, 14*, 75-88.
- Boden, D., & Bielby, D. D. (1986). The way it was: Topical organization in elderly conversation. *Language and Communication, 6*, 73-89.
- Bollinger, R., & Hardiman, C. J. (1991). *Rating Scale of Communication In Cognitive Decline*. Buffalo: United Educational Services.
- Caporeal, L. R., & Culbertson, G. H. (1986). Verbal response modes of baby talk and other speech at institutions for the aged. *Language and Communication, 6*, 99-112.
- Clark, L. W., & Witte, K. (1995). Nature and efficacy of communication management in Alzheimer's disease. In R. Lubinski (Ed.), *Dementia and communication* (pp. 238-256). San Diego, CA: Singular.

- Cohen, G. (1979). Language comprehension in old age. *Cognitive Psychology, 11*, 412-429.
- Cooper, P. V. (1990). Discourse production and normal aging: Performance on oral picture description tasks. *Journal of Gerontology: Psychological Sciences, 45*(5), 210-214.
- Coupland, N., Coupland, J., & Giles, H. (1991). *Language, society, and the elderly*. Oxford: Basil Blackwell.
- Coupland, N., Coupland, J., Giles, H., & Henwood, K. (1988). Accommodating the elderly: Invoking and extending a theory. *Language and Society, 17*, 1-41.
- Coupland, J., Coupland, N., & Grainger, K. (1991). Inter-generational discourse: Contextual versions of aging and elderliness. *Aging and Society, 11*, 189-208.
- Critchley, M. (1984). And all the daughters of musick shall be brought low: Language function in the elderly. *Archives of Neurology, 14*, 1135-1139.
- Davis, G. A., & Ball, H. E. (1989). Effects of age on comprehension of complex sentences in adulthood. *Journal of Speech and Hearing Research, 32*, 143-150.
- Drevenstedt, J., & Bellezza, F. S. (1993). Memory for self-generated narration in the elderly. *Psychology and Aging, 8*(2), 187-196.
- Duncan, S. (1972). Some signals and rules for taking speaking turns in conversations. *Journal of Personality and Social Psychology, 23*, 283-292.
- Duncan, S., & Fiske, D.W. (1977). *Face to face interaction: Research, methods, and theory*. Hillsdale, NJ: Erlbaum.
- Emery, O. B. (1985). Language and aging. *Experimental Aging Research, 11*(1), 3-60.
- Emery, O. B. (1986). Linguistic decrement in normal aging. *Language and Communication, 6*, 47-64.
- Frattali, C. M., Thompson, C. K., Holland, A. L., Wohl, C. B., & Ferketic, M. M. (1995). *Functional Assessment of Communication Skills for Adults*. Rockville, MD: ASHA.
- Gerard, L., Zacks, R. T., Hasher, L., & Radvansky, G. A. (1991). Age deficits in retrieval: The fan effect. *Journal of Gerontology: Psychological Sciences, 46*(4), 131-136.
- 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.
- Gold, D. P., Andres, D., Arbuckle, T. Y., & Schwartzman, A. (1988). Measurement and correlates of verbosity in elderly people. *Journal of Gerontology: Psychological Sciences, 43*, 27-33.
- Gold, D. P., Andres, D., Arbuckle, T. Y., & Zieren, C. (1993). Off-target verbosity and talkativeness in elderly people. *Canadian Journal on Aging, 12*, 67-77.
- Gould, O. N., & Dixon, R. A. (1993). How we spent our vacation: Collaborative storytelling by young and old adults. *Psychology and Aging, 8*(1), 10-17.
- Green, B.S. (1993). *Gerontology and the construction of old age: A study in discourse analysis*. New York: Aldine de Gruyter.
- Halliday, M.A.K., & Hasan, R. (1976). *Cohesion in English*. London: Longman.
- Hess, T. M., & Arnould, D. (1986). Adult age differences in memory for explicit and implicit sentence information. *Journal of Gerontology, 41*(2), 191-194.
- Holland, A. L. (1980). *Communicative Abilities in Daily Living*. Baltimore: University Park Press.
- Hummert, M. L. (1994). Stereotypes of the elderly and patronizing speech. In M. L. Hummert, J. M. Wiemann, & J. F. Nussbaum (Eds.), *Interpersonal communication in older adulthood* (pp. 162-184). Thousand Oaks, CA: Sage.
- Hupet, M., Chantraine, Y., & Nef, F. (1993). References in conversation between young and old normal adults. *Psychology and Aging, 8*(3), 339-346.
- Kausler, D. H., & Hakami, M. K. (1983). Memory for topics of conversation: Adult age differences and intentionality. *Experimental Aging Research, 9*, 153-157.
- Kemper, S. (1992). Language and aging. In F. I. M. Craik, & T. A. Salthouse (Eds.), *The handbook of aging and cognition* (pp. 213-270). Hillsdale, NJ: Erlbaum.
- Kemper, S. (1994). Elderspeak: Speech accommodation to older adults. *Aging and Cognition, 1*, 17-29.
- Kemper, S., Kynette, D., Rash, S., O'Brien, K., & Spratt, R. (1989). Life-span changes to adults' language: Effects of memory and genre. *Applied Psycholinguistics, 10*, 49-66.
- Kemper, S., Rash, S.R., Kynette, D., & Norman, S. (1990). Telling stories: The structure of adults' narratives. *European Journal of Cognitive Psychology, 2*, 205-228.
- Kintsch, W. & van Dijk, T. A. (1978). Towards a model of text comprehension and production. *Psychological Review, 85*, 363-394.
- Koss, E., Haxby, J. V., DeCardi, C., Schapiro, M.B., Friedland, R. P., & Rapoport, S. I. (1991). Patterns of performance preservation and loss in healthy aging. *Developmental Neuropsychology, 7*(1), 99-113.
- Kynette, D., & Kemper, S. (1986). Aging and the loss of grammatical forms: A cross-sectional study of language performance. *Language and Communication, 6*, 65-72.
- Kwong See, S.T., & Ryan, E.B. (1996). Cognitive mediation of discourse processing in later life. *Journal of Speech-Language Pathology and Audiology, 20*, 109-117.
- Levinson, S. C. (1983). *Pragmatics*. Cambridge: Cambridge University Press.
- Light, L. L., & Albertson, S. A. (1988). Comprehension of pragmatic implications in young and older adults. In L. L. Light and P. M. Burke (Eds.), *Language, memory and aging* (pp. 133-153). Cambridge: Cambridge University Press.
- Lomas, J., Pickard, L., Bester, S., Elbard, H., Finlayson, A., & Zoghaib, C. (1989). The Communicative Effectiveness Index: Development and psychometric evaluation of a functional communication measure for adult aphasia. *Journal of Speech and Hearing Disorders, 54*, 113-124.

- Maxim, J., & Bryan, K. (1994). *Language of the elderly: A clinical perspective*. San Diego, CA: Singular.
- Meyerson, M. D. (1976). The effects of aging on communication. *Journal of Gerontology*, 31(1), 29-38.
- Moeschler, J. (1993). Relevance and conversation. *Lingua*, 90, 149-171.
- Myllyniemi, R. (1986). Conversation as a system of social interaction. *Language and Communication* 6(3), 147-169.
- 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(4), 267-283.
- Obler, L.K. (1980). Narrative discourse style in the elderly. In L.K. Obler & M.L. Albert (Eds.), *Language and communication in the elderly*, (pp. 75-90) Lexington, MA: D.C. Heath.
- Penn, C. (1985). The Profile of Communicative Appropriateness: A clinical tool for the assessment of pragmatics. *The South African Journal of Communication Disorders*, 32, 18-23.
- Poyotos, F. (1982). Language and nonverbal behavior in the structure of social conversation. *Language Sciences*, 4, 155-185.
- Pratt, M. W., Boyes, C., Robin, S., & Manchester, J. (1989). Telling tales: Aging, working memory, and the narrative cohesion of story retellings. *Developmental Psychology*, 25(4), 628-635.
- Pratt, M.W., & Robins, S.L. (1991). That's the way it was: Age differences in the structure and quality of adults' personal narratives. *Discourse Processes*, 14, 73-85.
- Psathas, G. (1995). *Conversation analysis: The study of talk-in-interaction*. Thousand Oaks, CA: Sage.
- Prutting, C. A., & Kirchner, D. M. (1987). A clinical appraisal of the pragmatic aspects of language. *Journal of Speech and Hearing Disorders*, 52, 105-119.
- Radvansky, G. A., Gerard, L. D., Zacks, R. T., & Hasher, L. (1990). Younger and older adults' use of mental models as representations for text materials. *Psychology and Aging*, 5(2), 209-214.
- Ripich, D. N. (1991). *Handbook of geriatric communication*. Austin, TX: Pro-Ed.
- Ryan, E. B., & Cole, R. (1990). Evaluative perceptions of interpersonal communication with elders. In H. Giles, N. Coupland, & J. M. Wiemann (Eds.), *Communication, health, and the elderly* (pp. 172-191). Manchester, UK: University of Manchester Press.
- Ryan, E. B., Giles, H., Bartolucci, G., & Henwood, K. (1986). Psycholinguistic and social psychological components of communication by and with the elderly. *Language and Communication*, 6, 1-24.
- Ryan, E. B., Kwong See, S., Meneer, W. B., & Trovato, D. (1994). Age-based perceptions of conversational skills among younger and older adults. In M. L. Hummert, J. M. Wiemann, & J. F. Nussbaum (Eds.), *Interpersonal communication in older adulthood* (pp. 15-39). Thousand Oaks, CA: Sage.
- Ryan, E. B., MacLean, M. A., & Orange, J. B. (1994). Inappropriate accommodation in communication to elders: Inferences about nonverbal correlates. *International Journal of Aging and Human Development*, 39(4), 273-291.
- Ryan, E. B., Meredith, S. D., MacLean, M. J., & Orange, J. B. (1995). Changing the way we talk with elders: Promoting health using the Communication Enhancement Model. *International Journal of Aging and Human Development*, 41(2), 89-107.
- Ryan, E. B., Orange, J. B., & MacLean, M. A. (1993, August). *Evaluations of communication accommodation in individuals with dementia*. Paper presented at the Annual Conference for the American Psychological Association, Toronto.
- Sabat, S. R., & Harré, R. (1992). The construction and deconstruction of self in Alzheimer's disease. *Aging and Society*, 12, 443-461.
- Searle, J. (1969). *Speech acts*. Cambridge: Harvard University Press.
- Shadden, B. B. (1988). *Communication behavior and aging: A sourcebook for clinicians*. Baltimore: Williams and Wilkins.
- Shewan, C. M., & Henderson, V. L. (1988). Analysis of spontaneous language in the older normal population. *Journal of Communication Disorders*, 21, 139-154.
- Ska, B., & Joannette, Y. (1996). Discourse in older adults: Influence of text, task, and participant characteristics. *Journal of Speech-Language Pathology and Audiology*, 20, 101-108.
- Spilich, G. J. (1983). Life-span components of text processing: Structural and procedural differences. *Journal of Verbal Learning and Verbal Behavior*, 22, 231-244.
- Stover, S. E., & Haynes, W. O. (1989). Topic manipulation and cohesive adequacy in conversations of normal adults between the ages of 30 and 90. *Clinical Linguistics and Phonetics*, 3(2), 137-149.
- Taylor, B. C. (1994). Frailty, language, and elderly identity. In M. L. Hummert, J. M. Wiemann, & J. F. Nussbaum (Eds.), *Interpersonal communication in older adulthood* (pp. 185-208). Thousand Oaks, CA: Sage.
- Taylor, M. L. (1965). A measurement of functional communication in aphasia. *Archives of Physical Medicine and Rehabilitation*, 46, 101-107.
- Terrell, B., & Ripich, D. N. (1989). Discourse competence as a variable in intervention. *Seminars in Speech and Language Disorders*, 10, 282-297.
- Toner, J., Gurland, B., & Leung, M. (1990). Chronic mental illness and functional communication disorders in the elderly. In E. Cherow (Ed.), *Proceedings of the Research Symposium on Communication Sciences and Disorders and Aging* (pp. 54-64). Rockville, MD: ASHA.
- Tun, P. A., Wingfield, A., & Stine, E. A. L. (1991). Speech processing capacity in young and older adults: A dual task study. *Psychology and Aging*, 6(1), 3-9.
- 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 in the elderly* (pp. 125-139). San Diego: College Hill Press.
- Ulatowska, H.K., Hayashi, M., Cannito, M., & Fleming, S. (1986). Disruption of reference in aging. *Brain and Language*, 28, 24-41.

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Waldstein, R. S., & Baum, S. R. (1992). The influence of syntactic and semantic context on word-monitoring latencies in normal aging. *Journal of Speech-Language Pathology and Audiology, 16*, 217-222.

Walker, V.G., Roberts, P.M., & Hedrick, D.L. (1988). Linguistic analyses of the discourse narratives of young and aged women. *Folia phoniatrica, 40*, 58-64.

Whitbourne, S.K., Culgin, S., & Cassidy, E. (1995). Evaluation of infantilizing intonation and content of speech directed at the aged. *International Journal of Aging and Human Development, 41*(2), 109-116.

Wood, L. A., & Kroeger, R. O. (1995). Discourse analysis in research on aging. *Canadian Journal on Aging, 14*(1), 82-99.

Zelinski, E. M. (1988). Integrating information from discourse: Do older adults show deficits? In L. L. Light & D. M. Burke (Eds.), *Language, memory, and aging* (pp 117-132). Cambridge: Cambridge University Press.

Appendix. Summary of Selected Communication Checklists, Questionnaires, and Inventories

Features	Instruments										
	FLCI	FACS	DAP	FCP	PP	PCA	CETI	CADS	RSCC	CADL	FCSI
Respondent and population	SLPs and other professionals familiar with dementia score performance of patients with moderate or late-stage dementia	SLPs, other professionals, family, or friends score performance of individuals with aphasia and traumatic brain injury	SLPs and other clinicians score performance of individuals with dementia	clinicians rate performance of adults with neurogenic language and cognitive-communication disorders	SLPs rate performance of school-aged children adolescents, and adults in spontaneous, unstructured conversation with a partner	SLPs rate performance of adults with neurogenic and cognitive-communicative disorders	SLPs, other clinicians, spouses, or significant others judge changes in performance over time of individuals with aphasia	individuals self-rate and family caregivers rate aspects of functional communication	SLPs, other clinicians, family caregivers rate communication performance of individuals with dementia	SLPs rate the performance of adults with aphasia	SLPs or other professionals interview informant and from their descriptions rate performance of older adults with cognitive-communicative disorders and mental illnesses (e.g., depression)
Turn-taking	+	+	+	-	+	+	+	+	+	+	-
Topic	+	+	+	-	+	+	+	+	+	+	+
Repair	+	+	+	-	+	+	+	+	+	+	-
Speech acts	+	+	+	-	+	+	+	+	-	+	-
Linguistic level cohesion, coherence, etc.)	+	+	+	+	+	+	+	+	-	+	+
Interactions with others (familiar vs. unfamiliar, groups, etc.)	-	+	-	+	+	-	+	-	-	+	+
Using and understanding emotions	-	+	-	+	-	-	+	+	+	+	+
				(understanding only)							

(Appendix Continues)

Note	
FLCI	- Functional Linguistic Communication Inventory (Bayles & Tomoeda, 1994)
FACS	- Functional Assessment of Communication Skills for Adults (Fratelli, Thompson, Holland, Wohl, & Ferketic, 1995)
DAP	- Discourse Assessment Profile (Terrell & Tipich, 1989)
FCP	- Functional Communication Profile (Taylor, 1965)
PP	- Pragmatic Protocol (Prutting & Kirshner, 1987)
PCA	- Profile of Communicative Appropriateness (Penn, 1985)
CETI	- Communicative Effectiveness Index (Lomas, Pickard, Bester, Eibard, Finlayson, & Zoghaib, 1989)
CADS	- Communication Adequacy in Daily Situations (Clark and Witte, 1995)
RSCC	- Rating Scale of Communication in Cognitive Decline (Bollinger & Hardiman, 1991)
CADL	- Communicative Activities in Daily Living (Holland, 1980)
FCSI	- Functional Communication Screening Instrument (Toner, Gurland, & Leung, 1990)

Appendix (cont.). Summary of Selected Communication Checklists, Questionnaires, and Inventories

Features	Instruments										
	FLCI	FACS	DAP	FCP	PP	PCA	CETI	CADS	RSCC	CADL	FCSI
Daily living (greetings, pain, etc.)	+	+	-	+	+	-	+	-	-	+	+
Using and understanding nonverbal behaviours	+	+	+	+	+	+	+	+	-	+	+
Using and understanding prosodic features	+	+	+	+	+	+	+	-	-	-	-
Naming	+	+	-	+	+	+	+	+	+	+	-
Writing	+	+	-	+	-	-	-	-	+	+	-
Reading	+	+	-	+	-	-	+	-	+	+	-
Response modalities rated/scored	verbal written gestural pantomime	verbal written gestural facial expressions	verbal gestural facial expressions prosodic	movement-gestures verbal written	verbal gestural facial expressions proxemics	verbal gestural pantomime facial expressions prosodic proxemics	verbal (directly) nonverbal, writing, and prosodics (indirectly)	verbal]nonverbal	verbal gestural facial expressions proxemics	verbal gestural	verbal written gestural
Rating Scoring system	sub-test and total percentage scores compared with values from subjects with dementia	43 items rated on 7-point scale; use means for domain and total scores; qualitative functional rating on 5-point scale for each domain	rate <i>present</i> or <i>absent</i> for features in narrative, procedural, and conversation genres; ratings (<i>excellent, good, adequate, fair, poor</i>) made for genre, general discourse, and overall performance; discourse profile generated from matrix using number of features present, and general discourse ratings	performance ranked on eight point scale (<i>normal, good, fair, poor</i>) for five domains, then weighted and converted to percentages; domain and overall percentages calculated	performance rated <i>appropriate</i> or <i>inappropriate</i> ; calculate means, standard deviations, and ranges for each of 30 items, sub-domains (e.g., speech acts, etc.) and domains (e.g., verbal, paralinguistic, etc.)	communicative competence rated on 5-item scale (from <i>appropriate</i> to <i>inappropriate</i>) for linguistic features in scales (<i>control of discourse, fluency, and global</i>) and sub-scales of interactive features	ratings on a visual analogue scale with performance scale end-points of <i>Not at all able</i> vs. <i>As able as before stroke</i>	ratings for 26 items based on 5-point items (<i>almost always, usually, sometimes, rarely, almost never</i>); no indication that ratings are quantified	items in verbal and nonverbal domains rated as <i>normal</i> or <i>disordered</i> (<i>mild, moderate, severe, absent</i>); quantitative values assigned to each rating, and verbal and nonverbal sub-domain and total ratings calculated	3-point scoring system (<i>correct, adequate, and wrong</i>) for each of eight domains; ratings summed for each domain and compared to values of aphasia types	
Psychometric properties	well-standardized; validity and reliability values published	recently standardized on small samples; validity and reliability values published	small samples of normal elderly and early and middle stage Alzheimer's disease; no published validity or reliability values	none	published, non-standardized profiles for traumatic brain injured, aphasia, and child language disorders; no validity or reliability values	non-standardized, no published validity or reliability values	none published	non published	validity, rater agreement, and reliability values published	well-established validity and reliability values; normative and cut-off scores for normals, aphasia types, and institution vs. non-institution	
Theoretical background	based on concept of functional communication	based on theories of pragmatics and concept of functional communication	motivated by theories of narrative and procedural discourse, and theories of pragmatics	based on concept of functional communication	based on theories of pragmatics	based on theories of pragmatics	based on concept of functional communication	based on theories of pragmatics	based on concept of functional communication	based on concept of functional communication and theories of pragmatics	
Note	<ul style="list-style-type: none"> FLCI - Functional Linguistic Communication Inventory (Bayles & Tomoeda, 1994) FACS - Functional Assessment of Communication Skills for Adults (Fratalli, Thompson, Holland, Wohl, & Ferketic, 1995) DAP - Discourse Assessment Profile (Terrell & Tipich, 1989) FCP - Functional Communication Profile (Taylor, 1965) PP - Pragmatic Protocol (Prutting & Kirshner, 1987) PCA - Profile of Communicative Appropriateness (Penn, 1985) 					<ul style="list-style-type: none"> CETI - Communicative Effectiveness Index (Lomas, Pickard, Bester, Eibard, Finlayson, & Zoghaib, 1989) CADS - Communication Adequacy in Daily Situations (Clark and Witte, 1995) RSCCD - Rating Scale of Communication in Cognitive Decline (Bollinger & Hardman, 1991) CADL - Communicative Activities in Daily Living (Holland, 1980) FCSI - Functional Communication Screening Instrument (Toner, Gurland, & Leung, 1990) 					