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Aging and Language

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This article examines changes in language comprehension and production in normal aging, the ways in which lay conceptions of older adults' abilities

influence speech directed towards older people, and the effects of that speech on older recipients. Important changes that occur in language as a function of age-related pathology (e.g., Alzheimer's disease) are covered elsewhere (e.g., Kemper and Mitzner, 2001).

Considerable work has focused on language comprehension problems in aging, with a particular focus

on the role of working memory capacity. Correlational evidence suggests that age is associated with problems in understanding complex syntactic structures, and that those problems are largely accounted for by parallel declines in working memory capacity (Norman *et al.*, 1991). Complementary patterns are apparent in language production. Older adults produce less complex syntax, and again, such declines are largely accounted for by declines in working memory (Kemper *et al.*, 1992). Particular problems are experienced with left-branching clauses, and with utterances that include multiple clauses – syntactic structures that put particular strain on working memory. Fast speech rate also results in decreased comprehension for older adults more than for younger adults (Stine and Wingfield, 1987).

Recent research suggests that the association of communication problems with working memory is not a result of the immediate processing in working memory, but rather a function of “postinterpretative processing” (Caplan and Waters, 1996). That is, older adults demonstrate equal initial understanding and processing of language, but demonstrate deficits in the storage and integration of linguistic material into memory for future retrieval and use.

Attention has been paid to older adults’ ability to inhibit irrelevant or intrusive thoughts and the implications of this for language production and comprehension. Harsher and Zacks (1988) suggest that a decline in inhibitory ability is part of normal aging, and that it accounts for communication problems in older adulthood. Other scholars assign the association between inhibitory capacity and language use to pathological conditions. For instance, Pushkar, Gold and Arbuckle (1995) suggest that “off target verbosity” in older adulthood is a result of declines in frontal lobe functioning occurring among a minority of older adults. This debate is ongoing.

Less controversy is apparent in examinations of older adults’ abilities to recall proper names. Considerable evidence indicates problems in this area (Cohen, 1994). Proper names appear to present a particular challenge given their uniquely arbitrary and semantically unelaborated character. Nussbaum, Hummert, Williams, and Harwood (1995) point out that proper nouns have no synonyms, which removes one retrieval route that is used in other situations of retrieval difficulty.

While not strictly language-related, considerable communication problems for older adults are also caused by presbycusis – the normal age-related decline in upper-frequency hearing. While research into other communication problems has generally attempted to control for hearing declines, presbycusis is a somewhat specific pattern of hearing loss that

may contribute to some of the problems observed in other research (Schneider *et al.*, 1994).

The work described above has revealed important problems for older adults’ communication, as well as developing theoretical understanding of psycholinguistic processes. However, it has also sometimes conformed to more general notions that aging is about decline, and thus may serve to reify stereotypical notions of aging (Coupland and Coupland, 1990). In the remaining sections, some less pessimistic messages concerning communication and aging are emphasized.

First, the scholars described above are generally careful to note that, many findings reflect small effects that are observable in the laboratory, but have only minor effects in everyday communication (Ryan, 1991). In addition, research has revealed multiple ways older adults compensate for specific deficits, such as by relying more heavily on prosody or processing at a more global level (Stine and Wingfield, 1987, Stine-Morrow *et al.*, 1996). Also, findings of deficits among a group of older adults may be due to some subset of that group who are actually experiencing the early (undetected) stages of some form of dementia, rather than a general pattern of decline across all participants (e.g., note that longitudinal work sometimes shows little age-related change, except among those who experience working memory decline: Kemper *et al.*, 1992). Related to this, many negative effects begin around age 80: Discriminating among age groups within the ‘older adult’ population is therefore essential.

Second, language and aging research has paid scant attention to what might improve, or remain unchanged, with age as compared with what might decline. Normal aging has no effect on lexical availability or semantic memory (Kemper and Mitzner, 2001), vocabulary increases into old age (Salhouse, 1988), and narrative production improves with age (Kemper *et al.*, 1989). We have little systematic knowledge of older adults’ abilities in group decision-making, public speaking, or emotional expression, yet each of these seems open to improvement into late old age. The creative writing skills of older people might also merit investigation as a potential area of improvement in language (Sternberg and Lubart, 2001).

Third, a focus on ‘decrement’ causes inattention to the positive functions that may be served by what are apparently aberrant behaviors. For instance, Coupland, Coupland, Giles, Henwood, and Wiemann (1988) describe a pattern of “painful self-disclosure” (PSD) among older people – e.g., disclosure to relative strangers about personal issues such as illness or bereavement. It would be possible to interpret this as a sign of egocentrism or a decline in conversational skill. However, Coupland *et al.* (1988) illustrate the

functional nature of PSD for managing age-related face threat.

Fourth, research has begun to pay attention to the social construction of decline and decrement in old age, i.e., decline is created by language use concerning age and language directed towards older adults. Levy (1996) shows that making negative age stereotypes salient leads to less competent behavior (e.g., memory problems). These stereotypes are likely to be activated when older adults are addressed with stereotype-driven language strategies. For instance, patronizing talk to older people (in various manifestations called overaccommodation, elderspeak, secondary baby talk) is documented in numerous settings (Kemper, 1994), particularly institutional settings (Caporael, 1981), and is driven by stereotyped conceptions of aging (Ryan *et al.*, 1986; Hummert *et al.*, 2004). Patronizing speech can result in 'blame the victim' effects (recipients of such speech are perceived to be impaired, even if they are not: Hummert and Ryan, 2001). Varieties of this speech are associated with dependency in institutional environments (Baltes and Wahl, 1996), and older adults in institutional settings become accepting of such speech despite initially viewing it negatively (O'Connor and Rigby, 1996). Ironically, certain elements of the patronizing style (particularly semantic elaboration and reduced syntactic complexity) are helpful to older adults' comprehension, but other elements are harmful, such as prosodic adjustments and reduced sentence length (Kemper and Harden, 1999).

This brief review does not touch on all aspects of language and aging (e.g., paralinguistics of older people's speech, critical approaches, etc.). As noted by Coupland (2004), aging has received less attention than race/ethnicity, gender, class, and regional variation within the sociolinguistic literature on group variation. This is, however, beginning to change, and attention to aging issues is now common in psycholinguistics (Kemper and Mitzner, 2001) and communication (Nussbaum and Coupland, 2004). The theoretical and practical implications of this work are tremendous.

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Agrammatism I: Process Approaches

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Agrammatism is a disorder that leads to difficulties with sentences. These difficulties can relate both to the correct comprehension and the correct production of sentences. That these difficulties concern sentences is evident from the fact that word comprehension and production can be relatively spared. Agrammatism occurs in many clinical populations. For Wernicke's aphasia, for instance, this has been established for both comprehension and production. Agrammatic comprehension has been demonstrated in Parkinson's patients, Alzheimer patients, and children with specific language disorders. However, agrammatism has been studied most systematically in patients with Broca's aphasia, and it is this group that is the focus of this article.

Agrammatism in Comprehension

The large majority of studies on agrammatism in Broca's aphasia have been on comprehension. An important impetus to these studies was the claim made by Zurif and Caramazza in the early 1970s that Broca's aphasics lack all knowledge of syntactical rules. It appeared that these patients were unable to comprehend reversible sentences such as 'the cat that the dog chased was black' (Caramazza and Zurif, 1976). The hypothesis that Broca's aphasics were 'asyntactic' led to three different reactions. The first was that this global characterization ignores the possibility that these patients may all be classifiable as Broca's aphasia but that their underlying deficits may

be very different (Badecker and Caramazza, 1985). In support of the claim that agrammatism is not a unitary phenomenon, a number of studies have demonstrated that problems in comprehension can dissociate from problems in production (Miceli *et al.*, 1983); that in production, problems with grammatical morphology can dissociate from problems with syntax *per se* (Miceli *et al.*, 1983); and that there is large variation in the type of morphological errors within a group of patients (Miceli *et al.*, 1989). (It should be noted that the latter findings were obtained from a large group of unselected aphasic patients, both fluent and nonfluent. However, grammatical deficits may manifest themselves very differently in fluent and nonfluent aphasia.) The critique by Badecker and Caramazza has widely been taken as a critique on neuropsychological group studies as such and has led to a substantial shift from group to case studies, particularly in the areas of reading, writing, and naming. Many researchers still insist on the usefulness of group studies in the case of agrammatism, maintaining that these patients share a number of important symptoms that need to be accounted for. A second reaction came from aphasiologists with a linguistic background. It held that instead of a loss of all syntax, only specific subsets of linguistic competence could be lost. In particular, when patients have to understand sentences with noncanonical word order, such as the ones employed by Caramazza and Zurif, they perform at chance, whereas they seem relatively unimpaired with canonical sentences (Grodzinsky, 1989). This approach has led to a large number of linguistically motivated studies of agrammatism, which are discussed in **Agrammatism II: Linguistic Approaches**.