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Introduction

Chapter 1

Introduction

Human communication is a dynamic process which requires a complex balance of several functions including voice, speech, language and cognition (Maxim & Byran, 1994). Language is a mode of human communication. Language can be viewed and analyzed at many levels. One of them is, “language in use” or discourse. Since its introduction to modern science the term 'discourse' has taken various, sometimes very broad, meanings. Originally the word 'discourse' comes from Latin 'discursus' which denoted 'conversation, speech'. Discourse is a continuous stretch of (especially spoken) language larger than a sentence, often constituting a coherent unit such as a sermon, argument, joke, or narrative (Crystal 1992). Discourse is a basic sustained unit of human social communication (Brownwell & Joanette, 1993). Discourse can be broadly defined as the language use “at large”, or as extended activities that are carried out via language (Clark, 1994).

Discourse is a term becoming increasingly common in a wide range of professions. For linguists, discourse is often described as “language-in-use” or “socially situated text and talk”. According to them, the written, oral and visual texts are used in specific contexts to make meanings, as against to analysing language-as-an-abstract-system. Other disciplines such as, philosophy, history, sociology, anthropology, political science, media studies tend to use the term discourse to mean what is ‘sayable’ or ‘thinkable’ about a topic in any given political, social, historical, cultural context.

According to linguistics, language is assumed to a larger term and the discourses occur within language. A unit for measuring this was introduced by Zellig Harris. That unit was called discourse analysis. This analysis focuses on language in use, the relation of language to context and the relations of cohesion within a text. According to sociopolitical approaches, discourse is viewed differently. Discourse is seen as a system of power/knowledge, situated in a specific time and space. Analysis focuses on the production of knowledge, i.e., that which is understood to be truth or reality (Blommaert, 2005).
Discourse analysis is primarily a linguistic study examining the use of language by its native population whose major concern is investigating language functions along with its forms, produced both orally and in writing. Discourse analysis is the branch of applied linguistics dealing with the examination of discourse attempts to find patterns in communicative products as well as and their correlation with the circumstances in which they occur, which are not explainable at the grammatical level (Carter 1993). Discourse analysis was employed both for written and spoken text. The spoken discourse genres are separated into two broad categories, viz monologic (monologues) and interactive. These are further divided into descriptive, procedural, expository, conversational and narrative. Descriptive discourse involves attribution of features and concepts of a given stimulus (e.g., object) or personal experience (e.g., favorite hobby). Narrative discourse uses telling of a story, typically through generation of a spontaneous story or retelling of a story previously presented. Procedural discourse employs explanations of action sequences to perform a task. And expository discourse involves informing a listener of a topic through facts or interpretation; draws on higher-level thinking skills (e.g., inferring, understanding cause and effect) (Cherney, 1998).

1.1 Assessment of discourse production

There are various approaches to discourse analysis. They include critical discourse analysis, socio-cognitive discourse analysis, political discourse analysis, discursive psychology and conversational analysis. Critical discourse analysis (CDA) is an interdisciplinary approach to study discourse that views language as a form of social practice and focuses on the ways social and political domination are visible in text and talk (Fairclough & Holes, 1995). The social psychology of discourse is a new field of study that partly overlaps with the social psychology of language (Van Dijk, 1990). Political discourse analysis deals with the discursive conditions and consequences of social and political inequality that result from such domination (Fairclough 1995; Van Dijk 1993b).

Speech-Language pathologists concentrate on the conversational analysis. There are several ways of analyzing conversational discourse. They include within sentence,
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across sentence, text-level and story grammar analysis. Within-sentence analysis includes measures of sentential complexity, propositional analyses and counts, verbal output errors (e.g., mazes, lexical errors, and verbal paraphasias), productivity, and essential content units. Across-sentence analysis composes of analyzing cohesive adequacy, cohesive errors, and usage patterns for cohesive markers. In the text-level analyses, local and global coherence, and gist summarization is carried out. Finally the story grammar analysis involves episode counts and proportion of utterances in episodes.

1.2 Factors influencing discourse production

There are several factors which influence discourse production. They include, age, education, profession, cognition, proficient usage of more than single language (bilingualism/multilingualism), psychological or status of the individual, etc. These factors individually or in combination may influence the spoken language production. A few factors which were considered relevant for the present study were discussed in brief. These factors included bilingualism, cognitive skills, and, dementia.

1.2.1 Bilingualism.

According to current linguistic, psychological, and neurolinguistic approaches, the term “bilingual” refers to all those people who use two or more languages or dialects in their everyday lives (Grosjean 1994). According to the dictionary definition from Merriam Webster bilingualism is defined as an ability to speak two languages, the frequent use of two languages and the political and institutional recognition of two languages. There are various types of bilingualism.

1.2.1.1 Types of bilingualism.

Bilinguals can be grouped by reference to two criteria: a) age of second language (L2) acquisition, and b) ways in which the words of the two languages relate to underlying concepts. The first typology refers to simultaneous, early or native bilinguals, who learn their first language or mother tongue (L1) and L2 simultaneously and during infancy, and successive or late bilinguals, who learn their L1 and L2 successively, at different times (Paradis, 2001, 2004). The second typology, proposed by Weinreich (1953), distinguishes three different groups of bilinguals: compound, coordinate, and
subordinate. Coordinate bilinguals learn the languages in two distinguished contexts (for instance, home and school), so they would have two semantic systems and two codes. Compound bilinguals learn L1 and L2 in the same context, so they would have a single semantic system but two codes to access it. Finally, subordinate bilinguals learn the L2 by reference to the L1, generally via translation.

1.2.1.2 Bilingualism and Individual factors.

Some individual factors, such as biological and socio-cultural features have been reported to influence language processing by bilinguals. They include age and mode of acquisition, proficiency level, language exposure and use, and the age of the L2 user. Among these factors, the age of the L2 user is an important issue. Bialystok, Craik and Freedman (2007) and Bialystok, Craik and Ryan (2006) have shown that bilingualism has a crucial effect on cognitive processing, mainly when considering executive functions. Specifically, the authors report a bilingual advantage on tasks that require executive control; this advantage is observed across age windows but is particularly prominent in the elderly. Moreover, Bialystok, Craik and Freedman (2007) report a four-year delay in the appearance of the first signs in a group of bilinguals presenting Alzheimer’s disease, in comparison to monolingual persons with Alzheimer’s disease. These data are in accordance with the hypothesis of the establishment of a greater number of connections in the bilinguals’ brain (Giussani, Roux, Lubrano, Gaini, Bello, 2007), and suggest that bilinguals could have access to a cognitive reserve which could compensate for the early signs of healthy and unhealthy aging.

1.2.1.3 Bilingualism and language organization.

There is a single network mediating the representation of a person’s L1 (first language) and L2 (second language) and that this network is modulated by the control structure. Klein et al. (1995) performed PET scanning during word generation and word translation in twelve late but high proficient bilinguals of French–English. They found convergent brain activity pattern mainly located in the left frontal lobe. Kim et al. (1997) examined sentence generation in L1 and L2 Heterogeneous group of six late bilinguals using fMRI. Divergent brain activity was observed in Broca’s area. Similarly Perani et al.
(2003) used fMRI for studying word generation in a group of early and high proficient bilinguals but exposed differentially to L2. There was more extensive brain activity observed for the language to which subjects were less exposed. The languages of bilingual and multilingual speakers who are proficient in their languages are assumed to be processed by largely overlapping neural networks (Abutalebi & Green, 2007).

The research studies have compared the performance of monolinguals as against the bilinguals on a set of tasks. The studies related to stroop task (Bialystok, Craik, & Luk, 2008a) and flanker task (Costa, Hernandez, & Sebastian-Galles, 2008) have shown that the bilinguals are less disrupted than monolinguals when the response to a stimulus required participants to ignore a competing but irrelevant feature of the stimulus. According to the enhanced bilingual performance persist into older age, sometimes showing a slower rate of decline than that found in healthy older monolinguals.

Bilingual and multilingual individuals, who have years of experience switching between languages and inhibiting or activating their languages in accordance to the communication situation, might have particularly enhanced executive function abilities (Bialystok, Craik, Klein, & Viswanathan, 2004). Bialystok, Craik and Freedman (2007) demonstrated that enhanced executive function associated with bilingualism might be part of cognitive reserve.

1.2.2 Cognitive skills and discourse.

Discourse production is a cognitive and partially conscious process that consist of construction, allocation and update of mental representation of events and of the context of communication (mental and context models). The selection of relevant information from these representations and from general knowledge is the departure point of the process of discourse production. The activation of relevant knowledge in communication situations as well as the interrelation and organization of type of knowledge in memory systems are crucial to explain the construction of coherent structures in discourse (Van Dijk, 2006). In coherent discourse production, language users set out from a significant mental model and organize experiences into global semantic representations which
enable identification of topic of discourse (Brandao, Catello, Van Dijk, Parente & Casenova, 2009).

Discourse or communication which is analyzed at various levels is a dynamic process which requires a complex balance of several functions including voice, speech, language and cognition (Maxim & Byran, 1994). Discourse needs have increased with the rise in life expectancies during the past century. As the health systems have improved, there are more elderly people in the social spectrum. The census reported by Irudaya (2006) has shown that the elderly population of India accounted for 96 million by 2011.

Effective communication is central to an older person's well-being. When people grow older, they often experience problems in effective communication. They not only face difficulties in comprehension, but also in remembering spoken and written language. While some of these difficulties can be attributed to sensory impairments (such as, hearing and vision), it is likely that others could be due to deficits in cognitive processes (such as memory, attention & concentration, abstract reasoning, judgment etc.). Vocabulary tends to be preserved until late old age, and narrative style may actually show increasing complexity with advancing years. Hence, cognitive slowing is the hallmark of aging. This may be exaggerated in persons who are suffering from neurological disease. One such disease which affects the communication or discourse is dementia.

1.2.3 Dementia.

Dementia is a debilitating condition that causes chronic and progressive deterioration in intellect, personality and communication functioning. There are many varied causes of dementia, among them are infections, anoxia, intracranial masses, trauma, toxicity, hearing and visual disorders, vitamin deficiencies, endocrine and metabolic disorders, arteriosclerotic complications and Alzheimer’s and other disorders (Bayles & Kaszniak, 1987).

Dementia means loss of mental functions. It is an acquired, persistent impairment in multiple areas of intellectual function not due to delirium. Operationally, there is a compromise in three or more of the following nine spheres of mental activity: memory,
language, perception (especially visuospatial), praxis, calculations, conceptual or semantic knowledge, executive functions, personality or social behavior, and emotional awareness or expression. The compromise in mental functions is documented by mental status assessment, either by bedside mental status evaluation, clinical rating scales, or neuropsychological testing (Mendez & Cummings, 2003).

1.2.3.1 Discourse and cognitive deficits across stages of dementia.

Dementia, not only affects the cognitive abilities in the individuals but also the communication skills which decline across the stages of the disease. There are 7 stages of dementia ranging from very mild cognitive decline to very severe cognitive decline. For understanding the decline in language abilities, these stages can be broadly classified into mild, moderate and severe stages (Kim, 2008).

In the mild stage, there are a few errors in naming task and they find difficulties with story-level material. However the discourse is usually intact and they can attend to single sentence questions. In moderate stage, there are many errors in naming task. They have decreased knowledge of current and recent events. They are unable to answer questions. They require prompting to begin conversation. Marked difficulty is seen in planning & organization skills. Reduction in memory of personal history as well as poor short-term memory is noticeable. In the final stage, that is, severe stage, naming is severely impaired and they may use jargon. Impairment of short-term and long-term memory is evident. They have impaired abstract thinking, judgment, disturbances of higher cortical functions or personality. Personality changes are significant along with behavioral symptoms. They produce unintelligible speech (Kim, et al., 2008).

Hence, the mild stage is more sensitive for the discourse measurement. And significant difference can be evident between healthy elderly and persons with dementia during this stage. Thus, the present study is planned to explore discourse in persons with mild dementia.
1.2.3.2 Dementia and discourse.

Sensitivity of discourse measures to the subtle communicative deficits in persons with dementia varies according to the analysis used. Findings associated within- and across-sentence measures are mixed. For example, some examining cohesion have found significant differences between individuals with dementia and non-dementia (Coelho, Ylvisaker, & Turkstra, 2005). Others have found comparable performances among the groups. In contrast, text-level and story grammar analysis in the dementia literature have consistently demonstrated sensitivity, showing that global discourse analysis may be more fruitful in understanding the relationship between discourse ability and cognition (Moran & Gillon, 2010). All these studies have used various methods of analyses of discourse genres in persons with dementia and other pathological conditions.

There are several studies which have reported language deficits in persons with dementia. According to these studies, language deficits are frequent in persons with dementia. Unlike aphasias that are due to focal brain damage, language deficits in dementia occur in the context of multiple cognitive impairments (Kempler & Goral, 2008). Persons with dementia demonstrate word-finding difficulties (anomia), sentence comprehension deficits, and lack of cohesion in discourse. The earliest language deficit observed in persons with dementia is anomia. They have difficulty in coming up with words in structural tasks such as word list generation, as well as in elicited narratives and spontaneous conversation (Kempler, Curtiss, & Jackson, 1987; Nicholas, Obler, Albert, & Helm-Estabrooks, 1985). The speech of persons with dementia has semantically empty words (e.g., thing, stuff, etc) which are scattered throughout the utterances in place of the content words, thereby maintaining fluency.

Sentence comprehension impairments are observed in the tasks which require listening and remembering instructions while selecting one of several choices in a response array or responding to information questions about the material presented (Kempler, Almor, Tyler, Andersen, & MacDonald, 1999; Rochon Waters, & Caplan, 2000). The difficulties in the syntactic comprehension in persons with dementia can be attributed to the extralinguistic deficits related to the executive functions such as working
memory (Kempler & Goral, 2008). However the speech rate alteration can module sentence comprehension for persons with dementia suggesting that extra-linguistic factors may not always play a major role in sentence processing in this population (Kempler, 1997). Language comprehension for simple, structured, concrete material appears intact during early stage. However comprehension of abstract language does not rely on meaning of single words in syntactic structures.

Sentence production in persons with dementia is characterized by intact morphosyntactic structures (Kempler, Curtiss, & Jackson; Kave, 2003; Kave, Leonard, Cupit, & Rochon, 2007). The grammatical errors made by persons with dementia are similar in type and proportion to those made by healthy elderly (Altmann, Kempler, & Andersen, 2001). Almors, Kempler, Andersen, Tyler, and MacDonald in 1999 associated discourse impairments in persons with dementia to the deficits in working memory. They stated that the speech of persons with Alzheimer type dementia contained more pronouns than the speech of healthy participants. Extra-linguistic processing has also been used to explain discourse impairments in persons with dementia. They are known to have difficulty in constructing an informative and coherent narrative. The narratives are often repetitive with topic changes, unclear references and lack of coherence and informativeness (Ripich & Terrell, 1988; Chapman, Highley, & Thompson, 1998). They can communicate in most social situations but cannot follow difficult conversations and may repeat themselves. However their reading and writing remain intact (Cummings & Benson, 1983; Horner, Heyman, Dawson & Rogers, 1988).

The data reviewed till now suggest that there is a close relationship between bilingualism, cognitive deficits and language impairments in persons with dementia. It is necessary to understand how bilingualism influences the discourse production in persons with dementia.
1.3 Need for the study

A Dementia India report was released from Kerela, India in September, 2010. According to the report, the overall prevalence of dementia is estimated as 3%. Prevalence of dementia was 33.6 per 1000. Alzheimer's disease was the most common type (54%) followed by vascular dementia (39%), and 7% of cases were due to causes such as infection, tumor and trauma. It is estimated that there are about 1.5 million people with dementia in Kerala state of India. This number is likely to increase by 30% in the next four decades (Shaji, Bose & Varghese, 2005). According to Murthy (2010), there are about 32,000 elderly who are suffering from Alzheimer’s disease (most common cause of dementia) in Bangalore. Considering this increase in the occurrence of dementia, there is a dire need to rehabilitate these individuals seriously. Discourse analysis is an important tool for speech-language pathologists to work on functional communication abilities in them. Majority of the research in the area of discourse has been done in the West and research is skewed towards bilingual adults from native English speaking environment. However, researchers should be cautious about generalizing the results of these studies to individuals from other language backgrounds. Thus, there is a need to study discourse of bilingual elderly from countries like India, where the native language is spoken at home and in the environment, yet they acquire literacy in English. In India, English has become the common language for communication throughout the country. Also there has been little emphasis on management of the persons with dementia. The persons with dementia have largely been ignored because the nature of the disease is degenerative. Additionally, there are very few comprehensive examinations of communication deficits or competence to date. No normative data is available for evaluating the performance of persons with dementia for functional communication. Hence there is an immediate need for studying this population with respect to their preserved functional communication abilities including discourse.