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Editorial

1. INTRODUCTION

Adequate characterization, assessment and remediation of communication disorders ideally require sharing of concepts and methodologies from disciplines as varied as linguistics, psychology, sociology, neurology and computer sciences. Specific clinical contexts and specific languages require application of particular concepts and methods from different disciplines (Perkins & Howard 1995). In other words, as David Crystal pointed out, clinical linguistics is, and will always be a collaborative discipline.

In countries where clinical linguistics has evolved as a full-fledged sub-discipline of linguistics, there has been an active mediation on the part of linguists. This mediation has taken the form of (1) tutorials in professional journals, (2) books specially designed for practicing speech-language pathologists (e.g. *Phonetics for Speech Pathology; Experimental-Clinical Phonetics*; *Linguistics for Clinicians*), (3) development of assessment tools targeting different linguistic levels, (4) holding inter-disciplinary meetings to debate issues of clinical relevance and bringing out the proceedings in the form of special issues of journals. However, much of this has happened in the decade of 80's in the West with respect to primarily monolingual English speaking population, although, individual level attempts have been made earlier to articulate the nature and scope of clinical linguistics in India (see Karanth 1995 & Vasanta 2008). There is a realization in recent years that we need to take stock of the principles of clinical linguistics keeping in mind individuals who routinely use more than one language in day-to-day communication. This is evident in the move in 2007 to merge the *Journal of Multilingual Communication Disorders* with the *Journal of Clinical Linguistics and Phonetics*.

The Centre of Advanced Study in Linguistics, Osmania University took the initiative to facilitate focused deliberations on what the term "clinical linguistics" entails in the Indian context. Towards fulfilling this goal, a group of practicing speech language pathologists and a couple of neurologists interested in issues of communication were asked to prepare descriptive case studies in communication disorders affecting both children and adults speaking Indian languages. The

Indian languages covered by the case studies were Hindi, Marathi, Kannada, Malayalam and Telugu and the disorders dealt with were: stroke aphasias, dementias, mental retardation, specific language impairment, LK syndrome and hearing impairment. Each case study was referred to a trained linguist who served as a discussant. A two-day symposium held at Osmania University in January 2007 provided an opportunity for extensive discussions on different ways of conceptualizing and assessing language and communication disorders.

One of the major concerns expressed by linguists who were discussants to various papers at this workshop was inappropriate adaptation of English-based language assessment tools such as for instance, Western Aphasia Battery or Boston Diagnostic Aphasia Examination into Indian languages (particularly with reference to Hindi and Telugu). Further, it has already been well established that severity scores on standardized language assessment tests do not always provide relevant information about functional communication abilities of individuals with communication disorders. There is a need therefore to examine salient linguistic aspects of Indian languages for developing language assessment tools afresh.

We felt that instead of deciding salient features of Hindi and Telugu from existing grammar books, it was appropriate to look at naturally produced narratives. Therefore, some of us at the department of linguistics took up a research project aimed at analyzing spoken and written narratives produced by 100 normal young adults (50 from native speakers of Telugu, and 50 from Hindi/Urdu (*Dakkhini*) native speakers) using a sequence picture with eight scenes depicting a woman's purse being stolen (see the illustration at the end of this editorial). We made an attempt to identify and examine the variation; lexical, stylistic, and syntactic by examining language specific discourse devices and other structures contributing to cohesion and coherence in these narratives. A small group of neurologists and speech-language pathologists came forward to collect oral narratives from neurologically impaired patients using the same sequence picture. The results based on these narratives were discussed in a second workshop organized at Osmania University by our centre during March 28-29, 2008. This volume contains select papers from these two workshops dealing only with the oral narratives.

The theoretical papers commenting on linguistic structures and their function in relation to English, Telugu and Hindi (Section I), and all the papers in Section II focus primarily on the issue of assessment. Not all case studies dealing with communication disorders in the second section deal with the issue of assessment at the discourse level. Unless

it was felt essential, the authors were asked not to use IPA symbols because some of the medical professionals may not be familiar with them. Instead, we chose to convey vowel length by doubling the vowel symbol and retroflexion in consonants is indicated by using capital letters. In order to delineate the overall scope of clinical linguistics as a sub-discipline of applied linguistics in the Indian context, more interaction among all the professionals involved is necessary after more contexts of disability are analyzed in relation to several other Indian languages not covered in this volume. We see this volume as a step towards promoting more such interaction among all the professionals concerned with human communication and its disorders.

2. TERMINOLOGY

Professionals dealing with disorders of communication often notice that when verbal expression is impaired, people still struggle to convey their intentions through non-verbal behaviour. Pragmatics is a sub field of linguistics that deals with the relationship between behaviour and intentions. It extends to the study of social interactions, and includes the analysis of many non-verbal phenomena that accompany linguistic behaviour. It is the study of how contextual factors interact with linguistic meaning in the interpretation of utterances. Perkins (2007) stated that speech language pathologists use the term in a much wider sense, and in a less exclusively language oriented view than linguists. Specifically, because of their familiarity with individuals whose communicative competence varies considerably depending on cognitive capacities such as memory, attention and inferential reasoning, clinicians tend to be far more aware than linguists of the role of cognition in pragmatic functioning. Clinical linguistics needs to embrace a wider perspective on pragmatics to characterize and treat individuals with communication impairments. However, in this volume the focus is limited to only one component of linguistic pragmatics, the discourse.

Discourse is a level of language that relates each item and proposition in speech or writing to what has gone before it. It captures the organization of sentences into higher order structures that express the topics, the flow of information from one topic to the next one. The structure of a discourse is closely linked to the intentions and attentional state of the participants. Computational models are available today to isolate discourse segments corresponding to intentions of the participants. There are linguistic signs to mark boundaries between discourse segments – changes in verb mood, tense and aspect, intonation contour are a few examples.

Narrative is one type of discourse that does not have a complex intentional structure. That is, there is little, if any turn taking, and the intentional states of the speaker-listener remain essentially unchanged throughout the entire discourse. Therefore, it is possible to analyze the structure created by the propositions in a narrative. Caplan (1995) discusses three different levels of a narrative: one, the *schematic structure* referring to the flow of topics; two, *macrostructure* or sequences of utterances that share a topic and three, *microstructure*, the lowest level at which sentences are related to each other locally. A list of propositions in a narrative is called a *text base* and it is the microstructural level of text base that is related to continuity of *reference* that is, continuing mention of items and actions from one proposition to the next one, which constitutes the single most important criteria for establishing *coherence*. Pronouns, substitution, repetition, ellipsis are some of the cohesive devices that serve to make discourse cohesive and also help in creating a semantically coherent narrative. Like continuity of reference, *topic* also plays a role in maintaining coherence. Topic is the element of the text base, the starting point for the construction of the next propositional schema. The topic of a sentence (often receives additional stress or emphasis) may be its subject as is the case in English. It is sometimes referred to as, theme. The macrostructure of a narrative typically consists of a *setting,* a *complication* and *resolution.* If there are more *complications*, the narrative itself is considered as complex. *Story grammar,* a model of narrative has been used in the analysis of discourse structures of brain-damaged patients. Conversation is yet another type of discourse that requires a different methodology and use of detailed transcription of sequential utterances.

3. ANALYSIS OF NARRATIVES

Dooley & Levinson (2000) argued that in most oral narratives, one finds certain places where speakers pause longer than they do normally, where there is likely to be an increase in fumbling and disfluency, and where the interlocutor is especially likely to contribute to some encouraging noise or remark. Similarly, in the written narrative, other kinds of boundary phenomena such as paragraph indentation and chapter breaks occur. In other words, one's mental representation for narratives is organized into sections each of which is associated with particular place, time, action and participants. Speakers typically begin a new thematic grouping when there is a significant discontinuity in at least one of these four dimensions. Also, cohesive ties occurring in

patterns are based on thematic groupings, referred to as T-units. Discourse is thus constituted by a hierarchical organization with at least three levels: (1) clause level or local information (2) paragraph or an episode and (3) overall text or global information. According to Tomlin et al. (1997), the embedding of lower level units into higher ones is ultimately recursive. One of the challenges for clinical linguists in the Indian context is to identify linguistic devices of cohesion and coherence in relation to our languages.

Deborah Schiffrin (2001) has done extensive work on discourse markers, English expressions such as: "well," "but," "oh," "you know" etc. which she argues are not just linguistic items, but have cognitive, expressive, social and textual functions. In her article Schiffrin argues that the analysis depends on the perspective adopted by the analyst. She discusses three different perspectives: a semantic one focused on cohesion exemplified by Halliday and Hasan; her own socio-linguistic perspective, and finally a pragmatic perspective.

4. Development of Narrative Skills

Karmiloff-Smith (1987) reported her work on children's metalinguistic abilities to underscore the need to differentiate (linguistic) behavioural change from internal representational change in understanding utterances during development. To elaborate with an example, she pointed out that children at a young age generate singular masculine and feminine pronouns that seem to function as deictic markers. Yet, they manifest no signs of relating the pronouns to full noun-phrases or to other nominal referential devices. However, a little later, identical surface forms exhibit totally different functions generated from different representations. That is, older children generated pronouns serving not merely as deictics marking correct semantic features, but rather as discourse markers functioning in their relationship with other nominal referential devices. In other words, functions performed by linguistic units at discourse level are not static. A functional approach to discourse analysis highlights the dynamic nature of the ongoing computational process. She added that in her study, as speakers monitored the flow of their unfolding discourse, they dynamically recomputed their referential maintenance devices; that it is erroneous therefore to compare identical surface structure cross-linguistically prior to determining whether their functions are identical and whether there are effects of other factors, such as the existence in one language of a grammatical device which does not exist in the other (she cites the example of grammatical gender as a discourse maintenance device in

French but not in English). Hardly any published research exists on the differential function of discourse markers in maintaining coherence across Indian languages.

Until recently, assessment of children's performance in narrating stories privileged linguistic units such as for instance, number of words, number of turns, number of clauses, range of tenses etc. It was Berman (1997 cited in Parke 2001) who pointed out the need to make a distinction between a linguistic dimension – the use of specific forms and structures, a conceptual dimension, that is assigning due weight to evaluative elements that lie outside the narrative backbone, and finally a communicative dimension involving interpreting the narrative task to meet the pragmatic conditions imposed by the listener. Gutierrez-Clellen (2002) reported a study of narrative development in 33 bilingual Spanish-English children that made use of a spontaneous narrative production in response to frog stories, story-recall, and story comprehension tasks. The results revealed that even those children who were still in the process of learning their second language (English) grammar did well in spontaneous narrative production task. Cross-language differences were evident in narrative recall but not spontaneous production task suggesting that the two tasks seem to be making different processing demands.

Berman (2009) in a discussion of her previous research on this topic (see Berman & Slobin 1994) commented that it is only around the age of 9 or 10 years that children demonstrate well-formed global level organization of narrative structure and that rhetorical expressiveness consolidates only in adolescence and adulthood. Her explanation of linguistic form-function relationships with reference to English narrative data (based on Frog-stories) is worth examining here. English prepositions, "in," "on" and "after" go through different developmental phases listed below:

1. Spatial (used with concrete nouns – e.g. *in* the jar, *on* the floor, *after* the bees)
2. Temporal (with time / event noun – e.g. *in* the morning, *on* that day, *after* breakfast)
3. Temporal/causal (with gerundive – e.g. *in* running, *on* waking, *after* finding it)
4. Manner/cause (with abstract nouns – e.g. *in* fun, *on* his flight, *after* the discovery)

Basically, with age children use a wider variety of prepositions to express locative and other relations between predicates and their

associated noun phrases, reflecting general developmental trend in greater lexical specificity; they assign more and more complex semantic functions; they use these lexical items in different morpho-syntactic environments with gerunds and derived nominals. Functionally, such constructions play a role in narrative connectivity. The point to be noted is that narrative reference demands a combination of linguistic and cognitive abilities including the distinction between deixis and anaphora and between given and new information, awareness of shared information between narrator and interlocutor. She cited considerable evidence to show that it takes children until 9 or 10 years of age or even beyond to master the system in the sense of being able to introduce, maintain and shift reference to characters both appropriately and unambiguously.

The research reported by Berman & Slobin's (1994 and Hickman (1996) has demonstrated that reference-marking strategies are influenced by target language typology. For example in Mandarin Chinese unlike in English, French and German, pronouns are unmarked for categories such as gender, case or animacy. Several other languages have surface morphological cues that serve to disambiguate reference. These inflections are acquired early, and children can rely on them to identify a given referent in both interpreting and producing narratives. Berman & Slobin (1994) noted that English speaking 3 to 9 year olds as well as adults relied heavily on pronominal subjects. Hebrew speakers used null subjects for maintaining reference in a majority of the clauses they produced, whereas, Spanish narrators hardly ever used pronoun subjects at all. Berman (2009) offered a detailed discussion of developmental trends in other aspects of narrative organization such as temporality demonstrated by tense-aspect shifting to express foreground-background distinctions, discourse embedded clause-linkage or nexus and other lexical markings of connectivity in children's narratives. Commenting on the form-function relations in developing Hebrew narratives, she stated that a linguistic devise such as same-subject elision serves both referential clarity and discourse connectivity, while non-finite subordination plays a role both in varying temporal texture and also as a tightly cohesive means of packaging clauses together.

5. Narrative Skills and Language Disorders

Narratives serve as good indicators of linguistic complexity for they provide reliable indication of discourse skills such as for instance, introduction of referents, topic maintenance, location of action in time,

use of connectives and so on. Researchers have pointed out that the global skill of understanding and reconstructing a story is closely linked to the development of literacy skills and that narratives elicited using appropriate picture sequences tend to exhibit more varied syntax than action pictures alone because events depicted in the frames must be related to one another.

Hesketh (2004) studied 65 children in the age range, 6-11 years diagnosed to have language disorders using narrative sub-test of a standardized test, Assessment of Comprehension and Expression Test. She had the children produce ten constructions in two different contexts to obtain what she called syntax-formulation score which she stated as having correlated highly with some of the narrative variables.

Thomson (2005) elicited narratives and story recall data from twenty-five 5-8 year old children with Specific Language Impairment (SLI) and twenty-five age-matched typically developing children. Her analysis centered on textual theme, interpersonal theme, topical theme and ideational theme. The results of this study revealed that children with SLI used less variety and complexity in the themes suggesting a localized lexico-grammatical problem.

In a critical appraisal of methods used in the language assessment in aphasiology, Kennedy (1996) argued that a description of the linguistic variables of aphasic patients' language is likely to remain a description and not an explanation. She emphasized the need for researchers to be more specific about the nature of the processing deficit that exists in the syndrome of aphasia by undertaking more comprehensive language assessment.

Considerable evidence has been gathered on the effects of brain damage on discourse production and understanding in monolingual English speaking patients. Using the term *discourse aphasia*, Hawkins (1989) for instance, assessed two English-speaking aphasics' discourse for number of turn-takings (gaps between turns, overlaps, repairs); type of responses (no response, inappropriate response, minimal response); initiation (attention getting, verbal or nonverbal devices); discourse cohesion evident in the use of connectors (e.g. and, but, so etc), ellipsis, anaphora, topic controllers and so on. He concluded that aphasics' linguistic disability is located at the level of discourse, a finding supported by Edwards & Garman (1989) who concluded that the loss of specificity evident in their discourse (less number of content words; use of more proforms) throws the burden of communication on the discourse partner. For more details about research dealing with discourse analysis in right hemisphere damaged patients and Traumatic

Brain Injury (TBI) patients, see Myers (1993), Bloom, Obler & De Santi (1994) and Christiansen (1995). Application of conversational analysis to the study of a non-fluent aphasic is illustrated in Wilkins (1995).

Yiu & Worrall (1996) compared a group of 30 monolingual Cantonese-speaking aphasics and 10 non-aphasic controls. Cantonese, a Chinese dialect, like English has as its primary word order S-V-O. It is however, a topic prominent language, that is, in Cantonese, a sentence takes a topic-comment structure in contrast to the subject-complement structure typical of English. In Cantonese, the topic of a sentence can be omitted if it is understood or has been mentioned previously, thus leaving the sentence elliptical. All the participants were asked to describe four sets of sequence pictures. The theme of each set of these pictures used to elicit narratives was:

1. A farmer planting and harvesting a crop (four pictures)
2. A thief being caught in a burglary attempt (four pictures)
3. A picnicking young couple whose barbecue eat is being stolen by a dog (four pictures)
4. A man who has overslept is woken by his wife, and falls asleep at his office (five pictures).

All the narratives were videotaped and transcribed. After eliminating all the neologisms, repairs and repetitions from the propositional utterances, the following analysis was carried out:

1. Number of morphemes
2. Number of function (closed class) words
3. Number of complete sentences (a complete sentence contains at least a subject and a main verb)
4. Number of embedded sentences (containing two or more clauses)
5. Number of elliptical sentences (sentences in which the pre-verbal noun phrase was omitted).

From these, the mean length of utterance (MLU), the proportion of closed class words, the proportion of complete sentences, the proportion of embedded sentences and elliptical sentences were calculated. The results revealed that two of the three aphasic groups demonstrated features of agrammatism, characterized by shorter and simpler sentences with fewer morphological structures compared to the controls. Both the patient groups exhibited higher proportion of

elliptical sentences than the controls, which was not surprising as these structures are simpler, shorter and acceptable in Cantonese discourse. The severely agrammatic group of patients in this study seems to be fully exploiting the inherent characteristics of Cantonese in that they chose to use elliptical sentences extensively once the topic was understood in the context.

Discourse analysis was a chosen tool in the assessment of language breakdown in Traumatic Brain Injury (TBI) patients. The most important question during evaluation of an individual with TBI relates to the impact of the brain injury on language function. Traditional tests designed for aphasia were found to be totally insensitive for assessing communication efficiency in the language of individuals who became communicatively impaired after a traumatic brain injury. Clinicians turned away from reliance on primarily structure-based tests to doing discourse analysis that allowed them to judge an individual's communication in more complex situations. Further, it was realized that discourse tasks have advantages over most tasks in standard aphasia tests in that they draw on cognitive skills for topic initiation, content organization and sequencing of linguistic structure. Patients with right hemisphere damage reportedly demonstrate coherence and pragmatic difficulties despite intact ability to encode and decode language at the surface level. In particular, they evince difficulty in interpreting connotative and metaphorical meanings in words and sentences as well as comprehending indirect requests and jokes (Myers 1993).

Stout, Yorkston & Pimentel (2000) reported a study based on 94 TBI patients (divided into three groups: 39 mild, 22 moderate and 33 severe) and 38 matched controls (who had no history of TBI). Discourse was sampled in two tasks; first, a picture description was elicited and audio taped in response to "Cookie Theft picture" from BDAE. The second task required the participants to retell a story containing about 200 words (Mice and Weasels Fable). Both tasks were at the simpler end of discourse task continuum with little opportunity for an individual to bring personal experience to the development of the structure of the discourse. The following measures of quantity and efficiency were included: Quantity of production (Number of concepts, number of syllables & words per T-Unit); Efficiency (Rate of production including speaking rate, that is, syllables per minute and rate at which relevant information was provided, that is, concepts per minute; extent to which non-essential words and phrases were included in the production, that is, number of mazes and words per maze). T-unit was defined as an independent clause and non-clause elements associated with it; mazes were referred to as hesitation phenomena or filled pauses.

The results of this study revealed that performance on the two discourse tasks clearly differentiated TBI patients from controls. The performance of the severe group was statistically different from that of the controls. On the whole, the stories produced by TBI patients were shorter and contained less content than those produced by controls. This reduced output did not occur in the picture description task. Specifically, the picture description task yielded a pattern of reduced efficiency in narrative production characterized by slower rates and longer mazes. On the other hand, the story-retelling task yielded a pattern of reduced output characterized by a shorter narrative with less content. This suggests that the two tasks are imposing differing cognitive demands. The story telling task requires skills in the area of attention, auditory comprehension and memory. Picture description task on the other hand requires visual-perceptual skills, initiation and sequencing skills in developing the narrative. The authors emphasized the need for developing task hierarchies that systematically increase the cognitive demands of the language use to assess TBI patients' reduced communication efficiency.

Dutta (1999) made an attempt to evolve a simple assessment protocol for Kannada-English bilingual TBI patients whose second language is English. She created a simple sequence picture, " story of a lady and a robber" (reproduced at the end of this chapter). She collected data based on English narratives from five patients and ten normal subjects. Drawing on an earlier published work in this area (e.g. Ehrlich 1988), she measured # of content units; # of syllables, Content units/minute; syllables/minute; and redundancy index. Except on syllables per minute, on all the other four measures, the most severely head-injured patient's performance differed significantly from that of normal controls. However, she reported considerable variability in patient-performance, which is to be expected in cases of cognitive-communication impairments.

It can be seen that the focus in Dutta's study was quantity and efficiency of verbal communication, which no doubt is important to assess. However if we know the language specific devices for coherence, perhaps, we can devise assessment protocols that will allow us to note presence or absence of such devices across different languages in which the communication is taking place. Such information will help us in diagnosing and planning individualized therapy programmes.

6. PAPERS IN THIS VOLUME

The first section begins with Dipti Misra-Sharma's paper containing information about the differences between English and some of the Indian languages with respect to linguistic devices used in encoding information. She argues that these differences influence the way meaning is organized at the sentence and discourse level in various languages. In the next paper, Lakshmi Bai describes the multilingual setting of Hyderabad and offers a detailed analysis of spoken narratives produced by Hindi, Telugu and Dakkhini speakers. Her findings show that linguistic devices employed in a language for coherence are interconnected. She further points out the need to consider clausal repetition as a discourse connective in Indian languages. In the next paper, Aditi Mukherjee looks closely at the way participial constructions function in spoken narratives of Hindi speakers. Usha Rani's paper based on Telugu narratives illustrates the contribution of conjunctive participles, relative participles, quotatives and co-reference in maintaining coherence among normal young adult speakers of Telugu. She also makes a brief examination of the reasons for disturbed coherence in the narratives of two neurologically impaired patients.

The second section opens with Prathibha Karanth's paper which provides a brief history of development of commonly used language assessment tools. In the latter part of her paper Karanth provides a detailed description of the Linguistic Profile Test (LPT) that she originally developed in Kannada (which has since been translated into some other Indian languages including Hindi). She shows how LPT can be used to assess language impairments at the discourse level. Karbhari-Adhyaru's and Pauranik's papers illustrate different approaches to analyzing spoken narratives of patients with aphasias and dementia respectively. The next two papers by Annamma George & P. S. Mathuranath on primary progressive aphasia, and that of Suvarna et al. on semantic dementia and stroke aphasia illustrate the use of language specific semantic batteries in relation to Malayalam and Telugu respectively. The paper on selective impairment of verbs after subcortical damage in one of the two Kannada aphasics by Krishnan and Tiwari underscores the need to pay more attention to inclusion of words from different grammatical categories (especially nouns and verbs) in language assessment tools for the purposes of differential diagnosis and intervention among brain damaged patients presenting similar etiology. The paper by Vasanta et al. illustrates the usefulness of the construct, "sonority" in assessing phonological processing abilities

in relation to Telugu using a single aphasic patient and two normal controls. The last two papers deal with child language disorders. While Shivashankar et al. present a case study of a relatively less studied condition (LK syndrome), Prema et al. discuss a series of five different case studies of children with Specific Language Impairment (SLI). The transient nature of language breakdown in LK syndrome and the challenges posed by SLI in bi/multilingual children in our context discussed in these two papers demonstrate the difficulties in characterizing the scope of "clinical linguistics" as merely applying linguistics to clinical contexts, for there are no readily available linguistic methods/techniques to pin-point the nature of language breakdown. Overall, all the papers in this volume emphasize the need for development of language assessment tools that draw on salient features of Indian languages.

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