SYSTEMIC-FUNCTIONAL PERSPECTIVES ON ACQUIRED LANGUAGE DISORDER: A STRENGTH VERSUS DEFICIT APPROACH

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ABSTRACT

Language impairment is a commonly occurring consequence of brain impairment following left cerebral hemisphere stroke and traumatic brain injury. While some recovery usually occurs, persistent communication impairment interferes significantly with a person's social functioning. Language rehabilitation aims to restore optimum functional communication by enabling a person to recover impaired language skills, and importantly, to utilize remaining language resources. The Systemic-Functional model of language, being concerned with how language is used and language as potential resource, is a highly relevant framework for language rehabilitation. This paper describes how Systemic-Functional-Linguistic theory is currently being applied to the description and interpretation of acquired communication impairment in adults.

1. INTRODUCTION

In "An Introduction to Functional Grammar" (1994) Michael Halliday provides a comprehensive list of possible applications of Systemic-Functional theory, a number of which have direct application to the research and treatment of speech and language disorders. For instance, he suggests that Systemic Functional Linguistics (SFL) can enable us "to understand the relationship between language and the brain (and) to help in the diagnosis and treatment of language pathologies arising from brain insults" (xxx). Gotteri (1988) also recognizes SFL as having particular relevance for speech language pathology. Over the last ten years the SFL framework has been viewed with increasing

interest by researchers and clinicians working with communicatively impaired people, and in particular, adults who have suffered some type of brain injury.

The aim of this paper is to describe how SFL theory can be usefully applied to the study of acquired language disorders. In doing this I will outline some features of acquired language impairment associated with different types of brain injury in adults, and the major linguistic theories which have historically informed our description and interpretation of communication disorders. A brief description of the SFL model will follow, with a discussion of some particular aspects of the framework that are currently being adopted by researchers and clinicians for the examination and treatment of language disorder.

2. FEATURES OF LANGUAGE ASSOCIATED WITH FOCAL OR DIFFUSE BRAIN IMPAIRMENT

Patterns of language disorder accompanying acquired brain impairment vary according to such factors as the nature, site and extent of the brain damage. For example, focal lesions associated with Left hemisphere cerebro-vascular accident (stroke) may result in aphasia. Aphasia is essentially a disorder of language with reception and expression of various aspects of language (phonetic, phonological, syntactic, semantic and pragmatic) involved to varying degrees. The linguistic deficit may not be confined to spoken language, but also include written language and gesture (Ross, 1989).

Two main aphasia syndromes are commonly described: Broca's and Werniche's aphasia. These types relate to the site or location of injury to the brain (Murdoch, 1980). A localizationist model of aphasia is based on assumptions concerning language functions in the brain and the consequent effects of damage to these particular centres. Broca's aphasia, associated with anterior brain damage, is characterized by non-fluent, effortful and agrammatic speech (i.e. a predominance of content words and a paucity of function words). Vocabulary is restricted, while auditory comprehension is relatively spared (Davis, 1993).

Werniche's aphasia, associated with posterior brain damage, presents an opposite picture being characterized by impaired language comprehension and naming abilities. Unlike Broca's aphasia, speech output is fluent and well articulated with phrases of normal length and melody. Despite this fluency, content is abnormal containing substituted words or parts of words (paraphasias). Due to comprehension difficulties Werniche's subjects do not monitor their own disordered verbal expression, which may be incomprehensible to the listener. This is in contrast to Broca's speakers whose self-monitoring abilities remain relatively intact (Davis, 1993).

The nature of brain damage accompanying traumatic brain injury (TBI), (e.g. motor vehicle accidents) is diffuse rather than focal, and results in patterns of speech and language impairment which are not aphasic, but are secondary to cognitive and memory impairments (Adamovich, 1997; Holland, 1982). The term "cognitive-language disorder" was introduced by Hagen (1984) to describe these patterns of communication. The most common feature has been described as "confused language," which is characterized as language that is intact phonologically, semantically and

syntactically, both receptively and expressively, but which is lacking in meaning due to disturbed behavioural responses. Communicative behaviours may be irrelevant, confabulatory, circumlocutory, or tangential in relation to the given topic, and the logico-sequential relationship between thoughts may also be impaired (Hagen, Ibid.).

While some patterns of language impairment e.g. auditory comprehension and anomia (word finding) are significant problems for both groups, the main area of difference is that of functional language use, i.e. pragmatics, where both groups are thought to contrast markedly. While aphasic language is viewed as a disorder of language *form*, cognitive-language impairment is considered to be a disorder of language *use* (Holland, 1982).

Whatever the nature of the deficit, psychosocial implications inevitably exist for both groups as a result of their compromised communication. Following any acquired brain injury a certain amount of spontaneous recovery of language and cognitive function occurs, however, people are invariably left with residual deficits, which are likely to interfere significantly with their social, emotional and working lives. In addition, important demographic differences exist between these two groups in that occurrence of TBI is highest in the young population, aged 15-24 years (Adamovich, 1997), while stroke is more common in middle to older age (Murdoch, 1980). These language and demographic factors also influence the process of rehabilitation with respect to assessment strategies, therapy goals, content of treatment sessions and expected outcomes. This process is undertaken by the speech-language pathologist in consultation with the client and his/her family.

3. THEORETICAL PERSPECTIVES ON LANGUAGE DISORDER AND THEIR INFLUENCE ON SPEECH-LANGUAGE PATHOLOGY PRACTICE

The description and classification of language disorders outlined so far reflect the perspectives from which speech-language pathologists approach communication, specifically language and its theoretical basis. These perspectives fall broadly into two fields, psycholinguistic and sociolinguistic. Halliday (1978) clearly distinguishes these two approaches using the respective terms *intra-organism* and *inter-organism* as vantage points for the investigation of language in the individual. Both perspectives share a common goal, that is to establish a coherent theory of language comprehension and production, however, they differ in their views of language in the individual, the role of context in language use and consequently language disorder.

3.1. Psycholinguistic perspectives

The psycholinguistic paradigm views language as a psychological product, i.e. as *knowledge*. Hence language is considered within the context of the psychological world, as the cognitive and abstract representation of a rule system or code, common to all individuals. This "nativist" view as it has been described by Halliday (1978), reflects the philosophical-logical strand in the history of thinking about language, with its sharp distinction between the ideal and the real, or "competence" and "performance" (Chomsky, 1957). This distinction was found to have particular relevance for the description and interpretation of acquired language disorders in adults and has

consequently had a long lasting influence on both research and clinical practice. It has provided a theoretical framework for analyzing and interpreting differential patterns of error in the language of aphasia, and cognitive impairment associated with TBI or dementia. From this perspective errors are seen to reflect either impaired linguistic competence (i.e. linguistic representation) or performance (i.e. linguistic processing) (Bayles & Kaszniak, 1987).

Other psycholinguistic strands have permeated speech-language pathology approaches to acquired language disorder. Historically, the medical model of aphasia and its classification of aphasia syndromes, previously outlined, have provided an ongoing background influence on the field of psycholinguistics. However, other perspectives within that field have gained more recent prominence. They challenge the syndrome classification arguing that it ignores other patterns of impairment which have clinical and theoretical relevance. Some examples include generative linguistics, e.g. Grodzinsky (1990), neuropsychology, e.g. Buckingham (1982), cognitive neuropsychology, e.g. Byng (1988), Coltheart, Satori & Job (1987), neurolinguistics, e.g. Code (1982), Dressler & Stark (1988) and psychosocial linguistics e.g. Luria (1970).

The psycholinguistic perspective has historically dominated clinical practice so that resources for assessment of intra-psychological processes in acquired language disorder are well developed. These include a range of standardized aphasia and cognitive/language tests, which examine psycholinguistic abilities in a strictly controlled context where communication subskills such as naming, sentence formulation, reading and writing words and sentences are evaluated. Based in the theory that language is an abstract representation of a rule system, these tests of language disorder, such as the Boston Diagnostic Aphasia Examination (Goodglass & Kaplan, 1983) and the Western Aphasia Battery (Kertesz, 1982) assume that "normal" language is error free (Grodzinsky, 1990) or that errors represent variation from normatively established standards. Error or variation in aphasia and cognitive-language disorder then is interpreted against this idealized model of language and is seen to reflect pathological impairment.

Some psycholinguistic approaches also adopt discourse sampling in their batteries of assessment. Particular discourse analysis techniques used by clinicians have been derived from both psycholinguistic and sociolinguistic perspectives. The psycholinguistic analyses are again controlled contextually and structured in terms of elicitation (e.g. a picture description or structured interviews with questions planned by the interviewer). Analysis tools include structural grammars (e.g. Crystal, Fletcher & GarmaN, 1976; Saffran, Berndt & Schwartz, 1989), which are essentially concerned with constituent level structures, e.g. sentence, word and morpheme. Other techniques employ structural grammar principles to analyze the "microstructure" of the text (Ulatowska, North & Macaluso-Haynes, 1981, a, b; Glosser & Deser, 1990), and at the same time draw upon the text linguistic theories of Van Dijk (1977), Kintsch (1977), Van Dijk and Kintsch (1978) and Longacre (1976) to examine the "macrostructure" of the text, (e.g. setting, complicating action, and resolution etc).

Such analyses have been useful for examining the relationship between language and cognition, and for describing differential features of aphasic and TBI discourse. In the case of subjects with aphasia, it appears that macro-structures are generally

retained despite problems at the microstructure level (Ulatowska et al, 1981, a, b; Glosser & Deser, 1990). Alternatively in people with cognitive/language impairment, problems of connectedness across discourse levels have been revealed, where word and sentence level problems may not be obvious (Coelho, 1995; Liles, Coelho, Duffy & Zalagens, 1989). These latter findings verify clinical impressions of a discrepancy between the performance of a person with TBI on formal testing, which is "within normal," and their poor performance on functional communication tasks.

What are the strengths and limitations of the psycholinguistic or intra-organism approach? Information obtained from sampling structural/syntactic skills provides us with a quantitative view of the client's language competence, i.e. the basic structures of language that she/he has retained following brain impairment, how that person now compares to "normal" speakers/writers, and the patterns and frequency of errors occurring during the assessment period. However, these sampling and analysis procedures are restricted —both contextually and linguistically, preventing a global view of the exact nature of the person's resulting disability and its social consequences. Finally, because assessment does not represent "real" communicative settings, we are unable to ascertain the linguistic capabilities and strengths that have been retained by the client and how he/she utilizes those abilities to convey meanings and maintain social relationships.

3.2. SOCIOLINGUISTIC PERSPECTIVES

The sociolinguistic paradigm views language as *behaviour*. It sees language within the individual as arising from the external socio-cultural world and at the same time influencing that world. This "environmentalist" perspective draws upon the tradition of rhetoric and ethnography, rejecting the distinction between an ideal and real representation of language (Halliday, 1978; Matthiessen & Halliday, 1997). Rather than attempting to establish what is grammatically "correct," this approach aims to determine what is "acceptable" language use in a particular socio-cultural context. Hence with respect to language disorder, the notion of "error" is replaced with that of "variation" and a major goal is to determine the relationship between a person's linguistic performance and their communicative competence (Davis & Wilcox, 1985).

Sociolinguistic approaches to language disorder were adopted in the 70s and 80s when researchers began looking at the language of aphasia and TBI from a social and functional perspective. They began to examine the ways in which these groups of subjects communicated in everyday contexts, rather than in contextually controlled environments, using "functional" analyses which examined more general communication skills (Armstrong, 1993).

Data was obtained by observing speakers in a variety of settings and with different interlocutors. Formal tests were also devised to assess the adequacy of speakers' performance in everyday situations (e.g. Communicative Abilities in Daily Living) (Holland, 1980), the appropriateness of their communication (Penn, 1988), or their ability to convey new information (e.g. Promoting Aphasics Communicative Effectiveness) (Davis & Wilcox, 1985). Pragmatic protocols outlining categories of behaviour which were seen to facilitate or impede communication were also devised and included conversational skills such as turn-taking, maintaining topic and asking relevant questions (Damico, 1985; Prutting and Kirchner, 1983). This focus on commu-

nicative adequacy or competence heralded a shift from a "deficit" to "strength" centred approach to the assessment and treatment of language disorder (Holland, 1991).

While the functional approach to language disorder provided a much needed balance to the previous psycholinguistic paradigm, it also has some significant limitations. Firstly, the tools for analysis, particularly the pragmatic protocols, are drawn from many disciplines including philosophy, sociology, linguistics and anthropology, with no agreed upon description or theoretical framework, which according to Lesser and Milroy, "makes the task of pragmatic analysis difficult and contentious" (1993, 45). Secondly, the establishment of tests and protocols clearly contradicts the ethnographic tradition of "natural" language sampling. Categories of language chosen for such protocols determine what the observer considers to be significant, rather than what is naturally occurring. Hence the observer is likely to overlook relevant features of language behaviour. Thirdly, clinicians tend to view pragmatics as behaviours rather than as an integral part of the form and function of language. This view reflects the fact that pragmatic protocols describe the use of general speech functions, without explaining how these functions are achieved linguistically. Such analyses in fact are far removed from the lexicogrammar employed by the speaker/writer, and as Halliday has argued, "A discourse analysis that is not based on grammar is not an analysis at all..." (1994, XVI). This point now brings me to the theory of SFL (Halliday, 1994) which, it is argued, provides a more principled and integrated framework from which to describe the various aspects of language disorder associated with acquired brain impairment, and consequently a new perspective on clinical practice.

4. SYSTEMIC FUNCTIONAL LINGUISTICS —A BRIEF ORIENTATION

SFL is a sociolinguistic theory of language, located within a broadly defined class of "functional" grammars. It is a theory about the social processes, rather than the mental processes that are involved in language learning and language use. It emphasizes "what language can do, or rather what the speaker.... can do with it" (Halliday, 1978, 16), and consequently appears to have particular relevance to the examination of language disability because of its strength or vestigial resource orientation.

SFL theory is concerned with how people use language, how language is structured for use, and how context plays an integral role in determining any language use and choice. Language is construed as a meaning-making resource, where meanings reflect the context (social and cultural) in which they occur (Halliday, 1978). Halliday describes three main types of meanings or functions of language: Ideational, Interpersonal and Textual. Ideational meanings are further divided into Experiential and Logical meanings. These meanings or functions are built into the semantic system of language and form the basis of the grammatical organization of language (Halliday, Ibid.). This framework then offers a dual and integrated perspective on both language as use (meaning or function) and language as potential (system or structure), where meanings are realized through the system of wordings, grammar and phonology or graphology.

To examine the systematic relationship between context, language use (meaning) and language choice (structure) SFL foregrounds "text" as the basic meaningful unit

of language. This differs from a psycholinguistic paradigm, which follows a principle of grammatical constituency incorporating morpheme at the lowest level through word, phrase, and sentence at the highest level.

In describing the text-context relationship, Halliday (1985) identifies three aspects of context, which determine particular meaning choices. These include the Field, Tenor and Mode. Field relates to the on-going activity and purpose of the discourse, Tenor refers to the interrelationship between the participants, and Mode expresses the role that the language plays in the interaction. The Field is expressed through experiential meanings, which are concerned with some aspect of our external and internal world. These meanings are encoded in the clause via the grammatical system of transitivity as a semantic configuration of processes, participants and circumstances. The Tenor accounts for the choice of interpersonal meanings and is encoded in the systems of mood, modality and person. Finally, the Mode is realized through textual meanings via a set of options including theme, information and cohesion (Halliday, 1978).

To summarize, SFL theory, as described by Matthiessen & Halliday, is "characterized by certain orientations: it is oriented towards

> function rather than forms
> rhetoric rather than logic
> text rather than sentences
> resource rather than rules
> meaningfulness rather than grammaticality" (1997, 42)

5. CLINICAL AND RESEARCH APPLICATIONS OF SFL

SFL affords a different way of looking at disordered speech and language behaviour by providing an integrated semantic and grammatical focus on language. This approach contrasts with the discrete structural/syntactic and pragmatic approaches which have dominated research and clinical practice to date. The multilayered model of SFL provides a number of perspectives from which we can examine the language resources of speakers/writers who have acquired brain impairment, which in turn provides us with a multifaceted description and interpretation of different features of disordered language. The relevant aspects of the framework, which are currently influencing research and clinical practice in speech-language disorders, are now discussed.

5.1. CONTEXT

To begin, adopting the SFL approach means asking how a person is using language and how their language is structured for those uses. To do this we must sample and analyse complete interactions that occur in some sort of cultural and situational context, i.e. texts as opposed to contextually isolated linguistic subskills, which will incorporate the two levels of context, i.e. context of culture and situation, and their related concepts of genre and register.

Genre, as a realization of context of culture, refers to the overall purpose of a social interaction. Martin defines genre as "a staged, goal-oriented, purposeful activ-

ity in which speakers engage as members of our culture (1984, 25). Genres have specific schematic structures and linguistic realizations, which are mediated through different text types or registers. For the purposes of language assessment and reha-bilitation, clinicians will be interested in sampling genres which clients identify as most typical of their premorbid communication practices, as well as those which now reflect their current and future social roles. These are likely to include everyday spo-ken and written genres (e.g. social chat, making appointments, exchanging opinions, buying and selling goods, giving and seeking information, writing personal letters and letters of complaint), as well as more specialized business or educational genres (e.g. meetings, presentations, essays or report writing).

Context of situation or register refers to the immediate interactive situation and is therefore less abstract than the notion of genre. It is here that we can target the rela-tionship between particular language choice and the specific context of the talk (or writing) in which it occurs. Hasan (1985) suggests that we can characterize the "con-textual configuration" of any text through describing its Field, Tenor and Mode (de-scribed previously). This framework provides a clear and principled approach to lan-guage sampling. Texts selected for analysis will incorporate a range of relevant topics or Fields (e.g. general, specific or technical), variations in Tenor, where the client assumes diverse roles in terms of distance, power, and status with their interlocutors, and different Mode options including various rhetorical functions (e.g. language as action, reflection or persuasion), different mediums (e.g. spoken or written,) and monologic and dialogic forms.

This multilayered aspect of the context realized in genre and register allows for wide ranging evaluation of linguistic options that are available to the speaker/writer, highlighting not only their deficits, but also their strengths. The outcome of such an examination is a socially and linguistically valid picture of a client's abilities. This approach contrasts with the de-contextualized, short discourse or isolated sentence samples which previously have been elicited in response to formal assessment mate-rials (e.g. pictures, objects), predetermined questions and structured interviews.

5.2. Generic structure

While the notion of context provides a principled approach to language sam-pling, generic structure and its lexicogrammatical realization provide the framework for analysis of the texts. The interaction of context and text gives rise to the specific genres previously outlined. These genres have uniquely defining structures or a "ge-neric structure potential" (Hasan, 1985) consisting of obligatory elements that occur in a specific order, together with optional and iterative elements. (See Hasan, 1985 and 1996 for a characterization of the structure of a service encounter and a nursery tale respectively).

Generic structure analysis provides a way of describing the structural elements of an interaction according to its purpose and the relationship between the interlocutors. However, this does not constitute the complete analysis. Schematic elements of the text are realized or encoded through the semantic level or metafunctions and their related patterns of words and grammar. Using this multistratal framework, research-ers and clinicians can analyse the discourse of speakers and writers in terms of both global, schematic structure and the lexicogrammatical resources which provide ob-

jective evidence of specific elements within the schema (Eggins, 1994). This integrated approach to text analysis differs somewhat from the discourse analyses of Ulatowska et al (1981, a, b) and Glosser and Deser (1990), previously outlined, where macro and micro structural levels are viewed separately and where differential deficits between macro (discourse structure) and micro (word and sentence) language levels are seen to exist in the discourse of speakers and writers with aphasia and cognitive/language impairment.

Foci for evaluation will include global discourse features such as the presence, absence and ordering of obligatory and optional elements across a range of genres. In this way the client's range of schematic options are discerned, as well as the differential demands made by specific text types on the subject's vestigial resources. Information gained from such an analysis establishes the foundation for a therapy program, which will specifically target areas of strength or weakness by anticipating situational demands. Clients can then be prepared for particular interchanges which reflect her/his current and changing communication needs; needs which ideally are identified by the client and his/her family and peers.

Generic structure analysis has been adopted in some research and clinical contexts. For example, Togher, Hand & Code (1997) have used this analysis to describe and compare telephone interactions between people who have suffered TBI and different partners e.g. mother, therapist, police and transport personnel. It has also been used by Ferguson (1998) and Ferguson and Elliot (1999) to analyze aphasia assessment and treatment sessions. These sessions realize the genre of clinical interaction, and belong to a wider genre of service encounter (Ventola, 1987). The generic structures proposed by these researchers were able to define what exactly characterizes a clinical session, as opposed to an interview or a chat, for example. The analysis also made explicit those features that differentiate an assessment from a treatment session. It is suggested that the results could be used as a framework to facilitate learning in undergraduate speech-language pathologists.

5.3. Metafunctions and their lexicogrammatical realization

Genre and its schematic structure provide a framework for global analysis of a text, while realizational patterns are sensitive to variables of context of situation, i.e. Field, Tenor and Mode. These variables and their expression through related semantic and lexicogrammatical systems provide yet another vantage point for the analysis of disordered texts.

5.3.1. *Field and Experiential meanings*

The Field is encoded in experiential meanings, which are concerned with happenings and "goings on" in the discourse. These meanings are in turn expressed as patterns of transitivity through configurations of process (verbal group), participants (nominal group) and circumstance (adverbial group or prepositional phrase). Traditional assessment and therapy for acquired language disorder has focussed largely on the noun (anomia); the system of transitivity provides a new focus for intervention. Transitivity establishes the pivotal role of the verb and more specifically, the functional role of verb as process. Halliday (1994) proposes four main process types, which encapsulate experiential meanings —material, mental, relational and verbal.

Martin & Rothery (1981) suggest that patterns of process type contribute to the over-all characterization of the text in terms of its genre, i.e. they reflect the particular types of meanings being conveyed by the text. For example, recounts are character-ized by material process (of "doing") as they tell about events, happenings, and where or when they occurred, whereas commentaries, which are concerned with personal attitudes and interpretations of events, contain more mental ("sensing") and rela-tional ("being and having") processes. Reports are characterized by relational and behavioural processes, while relational processes dominate exposition.

By sampling a range of text types then, we can examine the speaker's/writer's resources for process use, and thus evaluate which resources have been lost or re-tained. Further, we can discern the differential impact of specific genre types on the subject's process choice (as well as other experiential elements of course). A study by Mortensen (1998) illustrates this latter point. This study examined a range of text types written by subjects with aphasia or cognitive/language impairment. The texts included a standardized picture description task, together with everyday genres in-cluding personal letters and letters to the editor. A transitivity analysis revealed that both the personal and editorial letters elicited a greater variety of process types when compared to the picture description task, albeit with more errors and inaccuracies. The editorial letter, predictably the most cognitively and linguistically challenging task, also elicited a greater complexity of structures realizing the participant roles and circumstantial elements, while drawing upon reasoning and rhetorical skills. Sig-nificantly, the picture description which is routinely used in formal testing revealed least about the nature of the subjects' linguistic abilities, including available resources and the use of compensatory strategies.

While Mortensen's study points to the diverse impact of genre type on lexical choice, it may be that for some speakers, verb choice itself is differentially impaired following brain injury. A study by Armstrong (1996a) explores this possibility, sug-gesting that the verb system can be affected differentially in aphasia so that for some speakers material processes reflecting concrete events are more easily accessed, while relational processes which constitute more abstract meanings are less accessible, par-ticularly in the early stages of recovery.

While these studies have targeted verb use via the process function, the role and concept of noun, the traditional focus in therapy is also addressed within the transitiv-ity system, in an extensive way through the nominal group. The nominal group real-izes the participant role, which interacts with the verbal group (process) so that within this framework, the noun is not treated as an isolated element as is generally the case with traditional naming activities.

The nominal group resource realizes significant representation of experience through its functional structure of Head, pre-modifying and post-modifying or quali-fying elements (Halliday, 1994). Investigation of the nominal group has clear impli-cations for both aphasic and cognitive/language impaired speakers who are reported as having so-called "naming deficits." Examination of nominal group structures al-lows for a more explicit definition and interpretation of the features of a naming deficit. It allows us to look beyond the names of things (single words), to a continuum of referring/naming devices for the descriptions of things (groups of words). Exami-nation of these referential resources reveals if, and how, the speaker/writer achieves

abstract and concrete meanings through their lexical choice with respect to specificity, complexity, explicitness and error (Armstrong, 1996b). Awareness of these experiential patterns also provides insight into a subject's textual resources, through patterns of theme and cohesion, and their potential to create a coherent text.

Studies have addressed nominal group resources in aphasic discourse (Armstrong, 1996b) and in the spoken discourse of a subject with Alzheimer's dementia (Mortensen, 1992). The former study revealed that subjects used incomplete and predominantly simple as opposed to complex nominal groups. Also, non-specific lexical choice, particularly evident in spontaneous recount, resulted in loss of clarity and some confusion of meanings. The study of the subject with Alzheimer's dementia highlighted the speaker's diminished lexicon, which was exemplified in her reduced lexical variety, simple and implicit word choice, frequent use of repetition, and minimal qualifying features. Similar analyses are likely to prove advantageous for the analysis of nominal resources in speakers with cognitive/language disorder.

Another aspect of experiential meaning which has relevance to our examination of disordered language is grammatical metaphor, i.e. where meanings usually realised in one way (congruent realization) get realized in an alternate or untypical way (incongruent realization). There are two types of metaphor: Interpersonal and Experiential, both of which are characteristic of adult discourse (Halliday, 1994) Experiential metaphor is commonly achieved through the process of nominalization, i.e. where words which are not normally nouns are turned into nouns. This feature is typical of certain types of genres, particular written exposition. Nominalization allows the writer to organise a text rhetorically, in contrast with the more dynamic nature and "real world sequencing" of spoken texts (Eggins, 1994). Furthermore, it creates an impression of formality or objectivity, which is an important feature of expository texts, particularly of the persuasive kind.

Experiential metaphor encoded in the system of transitivity has clinical relevance. Facility with it enables writers to access specialized genres (e.g. lectures, essays, memos, and letters to the editor). These genres may have been part of a person's premorbid written repertoire and now constitute personal and socially valid therapy goals. Furthermore, by understanding a client's ability to both comprehend and express nominalized meanings, we are better able to determine how effectively they will cope if they are aiming to return to secondary and tertiary levels of education or literacy-based professions.

5.3.2. *Tenor and Interpersonal meanings*

Tenor involves the relationship that exists between the interactants and their relative status and roles in the communicative situation. The tenor of a text is associated with the realization of interpersonal meanings, which in turn are influenced by the nature of the relationship —close or distant, and the formality of the communicative situation. Tenor expresses the participation or "intrusion" of the speaker/writer in the communicative situation through the expression of attitudes and judgements, and by seeking to influence the attitudes and behaviour of others (Halliday, 1978).

Interpersonal meanings then are concerned with communication as interaction and how this is achieved. When we use language to interact we establish a relationship with the other participant through dialogue or an exchange of meanings, and in

doing so, we assume different *speech roles* which include giving and receiving *commodities* —either information or goods and services. This four-way classification of speech role and commodity exchanged define the four primary *speech functions* of statement, offer, question and command which are fundamental to all aspects of exchange (See Halliday, 1985, p. 69).

Exchange structure analysis reflects the dynamic nature of the interactional process and has immediate relevance for the TBI population whose difficulties with pragmatic behaviours are well documented. Studies by Togher, Hand & Code (1996; 1997), and Togher & Hand (1998) have investigated interactions between subjects with cognitive/language impairment assuming different speech roles with partners of differing social distance and power. Results point to the important impact of contextual variables on the interaction, enabling speakers with cognitive/language impairment to demonstrate a wide range of interpersonal options not seen in previous assessments. In addition, the nature of the partner's contribution to the discourse has proved important in revealing particular attitudes towards the brain injured person.

Interpersonal meanings reflect many of the pragmatic behaviours identified in various pragmatic protocols (e.g. Prutting & Kirchner, 1983; Damico, 1985). These meanings or speech functions are captured in the patterns of lexicogrammar, specifically those of mood and modality. Hence by examining these strata we can determine the linguistic realizations of particular pragmatic behaviours. Analyses at this level of language have examined interpersonal aspects of aphasic subjects' conversation (Ferguson, 1992).

Pragmatic behaviours have been reported to be frequently well retained by aphasic speakers (Davis & Wilcox, 1985) hence researchers have been interested to discern how this success is achieved linguistically. Ferguson (1992) demonstrated that aphasic speakers retained access to all speech functions although these were realized in grammatically diverse ways. For example while questions tended to be realized as polar or WH interrogatives, at times they were expressed as declaratives with rising intonation to indicate the question function. In cases when only minimal linguistic resources were available (e.g. rising intonation only), meanings were still successfully exchanged despite omitted grammatical features. These preliminary findings were seen to further our understanding of how people with aphasia achieve interpersonal meanings and support the notion that aphasics communicate better than they talk (Ferguson, Ibid.).

5.3.3. *Mode and Textual meanings*

Mode and its realization through textual meanings of theme and cohesion provide yet another avenue for examination of disordered language. The textual metafunction has been referred to by Halliday (1978) as the "enabling metafunction." Matthiessen (1995) describes its distinctive role in the overall creation of meaning within the text, "constructing ideational and interpersonal meanings as information that can be shared between speaker and listener" (20). These particular functions are achieved through the systems of Theme, Information-focus, and Cohesion.

Theme is the resource for organizing the interpersonal and experiential meanings in the clause in the form of a message. Choices for theme represent the importance or priority given by the speaker/writer to the message at the clause level. Patterns of

theme selection also realize progression or development of the text. (Fries, 1981). Analysis of thematic representation and progression would appear to have particular application to the discourse of speakers/writers with cognitive/language impairment. It may be useful for example in capturing and explaining features of their discourse which are reported to be disorganized, tangential and circumlocutory. While research in this area has not been used for the investigation of aphasia or cognitive/language disorder, it has been applied to children's narrative and recount texts (see Thomson, 1998).

Cohesion, another textual resource, has been the aspect of SFL originally, and most widely adopted for the investigation and treatment of language disorder, not only in relation to aphasia (Armstrong. 1992; Lemme, Hedberg & Bottenberg, 1984; Ulatowska et al, 1981b), but also cognitive/language impairment (Mentis & Prutting, 1987) and Alzheimer's dementia (Ripich & Terrell, 1988). The potential for cohesion analysis as a clinical tool has been discussed by Armstrong (Ibid.). In her study she describes cohesion analysis as originally developed by Halliday and Hasan (1976), and the later extensions of this work by Hasan (1985) in relation to assessment and treatment of different types of aphasia. The roles of lexical cohesive devices (e.g. repetition and collocation) and grammatical devices (e.g. reference, substitution and ellipsis) are described, together with features that differentiate the various language disordered populations from "normal" speakers.

6. SOCIOCULTURAL IMPLICATIONS FOR THERAPY

The adoption of a sociolinguistic framework for any communicative context, (and this includes a speech pathology session) presupposes that all communicators are active participants in constructing meanings (Armstrong, 1993). Communicatively impaired participants however are at a disadvantage in any communicative context as they have limited or impaired access to their previous linguistic potential. In the case of a clinical interaction, there is also a pervasive impact of the "medical" context which dominates the speech pathology setting, particularly in relation to adult acquired communication disorders. The hospital and rehabilitation context is one that bestows "power" upon the health professional who is the assumed "knower," while the client is placed in the role of "sick" person and "receiver" of knowledge. Consequently therapy is potentially clinician rather than client directed, so that therapy goals, tasks and target responses are predetermined by the clinician (Armstrong, Ibid.). Even apparently spontaneous conversations may provide the client with little opportunity to introduce and develop personally relevant topics, thus denying them opportunities for the creation of new meanings.

The studies by Ferguson (1998) and Ferguson & Elliot (1999) referred to previously, have paved the way for evaluating the structure of a speech pathology session and the interactive patterns of the participants, including clinician, client and partner. Using generic and exchange structure analyses, these studies allow us to evaluate if, and to what extent, we conduct our therapy in line with our stated philosophies and theoretical constructs, as well as providing theoretically and socially valid frameworks for the education of future clinicians.

7. CONCLUSION

This paper has presented a preliminary view of the SFL framework and its application to the investigation of disordered language. Its potential as a tool for analysis and treatment of acquired language disorders in adults is based on a number of perceived strengths. Firstly, it is an integrated approach that allows us to see the many ways in which a text, i.e. language in use, is created. It offers a framework in which speaker's/writer's discourse can be analyzed in terms of both specific and overall meanings, i.e. meanings at the rank of word and clause are seen in relation to their function within the whole text, while the text is viewed in relation to the socio-cultural context in which it is constructed. Secondly, it is not a deficit model. SFL sees language as a set of meaning resources. This means that we focus on *all* the meanings a client can make and *all* the ways in which they realize their meaning choices. Hence vestigial resources are seen as strengths, albeit, at the same time, we are aware of the impact that restricted language resources has on the creation of discourse. Therapy consequently can capitalize of retained skills as well as considering alternative choices and realizations, which may improve deficits, or provide strategies for compensation.

Note

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