CHAPTER 1 - INTRODUCTION TO THE STUDY

This dissertation attempts to explain how a complex process works. The process is the act of interpreting, and specifically a kind of interpreting called "relayed interpreting" as it is applied within the American Deaf community. This application of relayed interpreting requires two interpreters, one hearing and one Deaf. Both interpreters are actively involved in the process of taking a message from English to American Sign Language (ASL) or vice versa. This bilingual form of relayed interpreting is different from the most common uses of spoken-language relayed interpreting which tends to be multilingual, involving three (or more) spoken languages. To this date, the bilingual form of relayed interpreting between English and ASL has been described (Bienvenu & Colonomos, 1990), but has only been partially analyzed by one researcher (Ressler,1999).

Relay interpreters have been doing their work for at least several decades, yet their work has not been extensively researched or even documented. One common use of relayed interpreting with Deaf consumers has been in legal settings which involve Deaf defendants or witnesses who are not fluent in any language but are able to communicate gesturally. In these situations, the hearing interpreter would interpret information from English into ASL. The Deaf interpreter, working from this interpretation, would then create a gestural message in an attempt to allow the Deaf consumer to understand the essence of the original source text. The process would also work in the opposite direction: any gestural reply from the Deaf consumer would then be conveyed in ASL to the hearing interpreter who would then complete the process by interpreting from ASL to English.

A recent development in the use of relayed interpreting is its use for conference presentations and business meetings. While the interactive communication mentioned above is dialogic, conference proceedings are much more monologic in nature and therefore the use of relayed interpreting tends to be unidirectional: the hearing interpreter, sitting in the front row of the audience and facing the stage, actively determines the meaning of the spoken English source text and then creates an equivalent of that message in ASL. The Deaf interpreter, standing on the stage with a clear view of the hearing interpreter, actively determines the meaning of the hearing interpreter's target text and creates a new target text, also in ASL, but perhaps more cohesive and culturally appropriate than the hearing interpreter's text. Both portions of this form of relayed interpreting occur simultaneously with the on-going source text (although they may take place in a more consecutive nature as

compared to each other). Appendix G provides definitions of a variety of different forms of transcommunication.

The scope of this study is limited to the use of relayed interpreting within conference settings for four significant reasons: 1) it is ethically challenging to perform research on actual court use of relayed interpreting because the introduction of researchers and/or video cameras to the situation will not only distract the consumers and interpreters but may directly impact the result of the communication being interpreted. 2) the recording of a performance of interpreting designed for a large audience in a conference setting creates little distraction and should have a minimal impact upon the communication. 3) investigating this complex process in a unidirectional form reduces the total number of variables involved in the process, thus increasing the chances of accounting for the most significant factors. 4) future research on the relayed interpretation of complex dialogic discourse will need a base – which this research is intended to provide.

The Goals - Purpose

This dissertation is written with the intention that it will be accessible to students who are learning about the profession of interpreting as well as scholars who have extensive experience and education regarding the theory and practice of interpreting. Toward this end, the appendices contain instructional material geared for students of interpreting, while the main body of the dissertation is written in a traditional (but not overwhelming) academic style. The primary goal of this work is to analyze and explore relayed interpreting, a previously under-explored aspect of professional interpreting. Secondary goals are 1) to solidify and clarify a set of definitions regarding language and interpreting (and eventually theoretical models which address both the interpreting process and language variation in ASL); 2) to provide guidance for interpreters who wish to improve their own interpreting skills; and 3) to aid in the development of various curricula for the training of interpreters.

The Assumption of Success

Earlier investigations of interpreting had a tendency to seek out negatives, such as errors, in message equivalence, misproductions of vocabulary, or other mistakes that take place in the process of interpreting.

Cynthia Roy (1989) began to change this approach to the investigation of interpreting when she analyzed the interpreting process with the "assumption of success."

The present research began as an attempt to understand why relayed interpreting works. The use of relayed interpreting has been strongly preferred by Deaf participants at conferences[1] which the researcher had previously attended. Yet on the surface its use seems more likely to confuse a message rather than clarify it: a source message is processed through two people rather than only one before the target audience receives the message. This seems to parallel the game of "telephone" where a message is passed from person to person, often becoming completely distorted before returning to the originator. Why do many Deaf audience members continue to express a preference for relayed interpreting over "direct" interpreting in conference settings? This study attempts to analyze a process (which is generally recognized as being very effective) and determine why it works so well.

The Research Goals and Questions

This research is essentially the first in-depth exploration of relayed interpretation. As such, the overriding goal of the research is to lay a solid base for future research. Toward this end this study takes ten minutes of data and provides an intensive exploration of the work of each interpreter and how they interact to provide their interpretation.

Question #1 – What is the amount of message equivalence between the Source presenter, the Hearing interpreter and the Deaf interpreter? This will be answered by identifying the overlap and difference between the Source Text English-productions of a presenter, the Target Text ASL-productions of a Hearing Interpreter (HTT) and the Target Text ASL-productions of a Deaf Interpreter (DTT) for their use of key concepts and nouns.

[1] The determination that there are audience preferences for relayed interpreting comes from personal observations by the author and by members of the dissertation committee. Beyond these personal observations, the Registry of Interpreters for the Deaf has consistently offered relayed interpreting of plenary and business sessions at its biennial conferences since 1991.

Question #2 – What is the amount of processing time required between the Source presenter, the Hearing interpreter and the Deaf interpreter? This will be answered by identifying and comparing the points of onset for key concept words and for nouns in the ST, the HTT and the DTT.

Question #3 – What are the structural differences between the Hearing interpreter's Target Text (HTT) and the Deaf interpreter's Target Text (DTT)? This will be answered by identifying the overlap and difference in the use of syntactic patterns, the lexical choices that each text represents, the use of four specific morphological elements, and the use of two non-manual grammatical markers between the HTT and the DTT.

Question #4 – What kinds of hand-dominance differences appear between the ASL productions of the Hearing interpreter and the ASL productions of the Deaf interpreter? This will be answered by identifying and comparing the use of dominant-hand productions and non-dominant-hand productions[2] of the Hearing Interpreter and the Deaf Interpreter.

Question #5 – How is private, interactive communication between the Hearing Interpreter and the Deaf Interpreter accomplished? This will be answered by identifying the ways that the Hearing Interpreter and the Deaf Interpreter communicate with each other during the interpreting process.

This study is limited to being an investigation of only two interpreters, but it is intended to provide an extensive look at the process of relayed interpreting which can then serve as a starting point for further investigation. Future research may focus on why Deaf consumers of this service indicate a preference for relayed interpreting, the skills and knowledge required to for each interpreter to provide the service of relayed interpreting, and / or how relayed interpreting is different for consumers who have limited ASL skills as opposed to consumers who are fluent in ASL.

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[2] Because ASL is a manual language, it can have vocabulary presented on either hand. Dominant Hand productions are those made with the signer's preferred hand taking on most of the action. Non-Dominant Hand productions are ASL vocabulary items made with the signer's less-preferred hand generating the majority of the action. There are many reasons why this choice may be deliberate, including referencing real items to either side of the signer and also in comparing and contrasting concepts in normal discourse.

CHAPTER 2 - LITERATURE REVIEW

Research on the Interpreting Process of Spoken Languages

Eva Paneth (1957) was among the first people to provide any analysis of spoken-language interpretation and observed that interpreters would generally produce elements of their target texts between two and four seconds after those elements had been presented in the source text. Thus began the identification of an important difference between interpreting and translating. Translations could be done across any range of time (minutes to years) but this time lapse was nothing of importance for research. Consecutive Interpretation allowed the interpreter to take as long as needed to convey the entire text (or portion of a text).

Simultaneous Interpreting first became a practical option during the Nuremberg trials after World War II (Bowen and Bowen, 1987; Ramler, 1988). Advances in technology allowed for headphones to provide private access to one of several interpretations in different languages. Since the interpretations were perceived privately, they did not interfere with the source text and could be provided as the source text continued uninterrupted. The advent of simultaneous interpreting placed the interpreter in a battle of time between the source presenter and the target audience. The practice of using sound-proofed interpreting booths and electronic sound equipment had removed the interpreter from face-to-face interaction with the source speaker and with the audience. Now source speakers would proceed with their texts as though no interpreter were present and the need to "keep up" with the source presenter became a concern of utmost importance to professional interpreters..

Further research of the time difference between the presentation of source and target texts was conducted by Oléron & Nanpon (1965) who were among the first to conduct experimental studies on the interpreting process. Their work demonstrated that the processing time (sometimes referred to as "ear-voice span") of interpreters ranged between two seconds and ten seconds. This research established that Simultaneous Interpreting is not completely simultaneous.

David Gerver (1969) investigated the effect of presentation speed (between 95 and 165 words per minute) on the accuracy of the interpretation. His results indicated that increased source-text speed had an adverse effect on target-text accuracy and that the optimum rate for interpreting (specifically from spoken French to spoken

English) was 100 words per minute. In the same study, Gerver also investigated the transliteration process of shadowing (trans-communicating a message in the same language encoding system it was presented) and determined that the optimum rate for shadowing spoken French was at 130 words per minute. He identified several categories for errors: omissions (of words, phrases, or larger strings of eight or more words), substitutions, and corrections. Gerver's research began the analysis of errors in determining accuracy of interpreting.

Oléron & Nanpon's 1965 work demonstrated the processing delay in simultaneous interpreting, but questions remained about how much true simultaneous work was being done during simultaneous interpreting. Gerver, in another experiment (1974), determined that interpreters working from spoken French into spoken English both listened and spoke simultaneously for 65% of the texts they interpreted, which lasted between five and twenty minutes. This meant that the remaining 35% of the time was spent either listening or speaking in isolation without overlap between the source presenter and the interpreter. This demonstrates that interpreters are very busy both attending to the source text and producing a target text simultaneously for about 65% of the time. Therefore simultaneous interpreting is not so much a label for how quickly the target text is produced, but rather a description of the activity of interpreters: they produce target texts while simultaneously attending to other portions of the source texts.

Barik (1969) determined that source-text pausing played a significant role in how interpreters analyzed the source text. The pausing structure of the source text would often be understood by interpreters as being meaningful divisions of main points and the interpreters would likewise divide their target texts. With further research, Barik (1973) discovered that interpreters generally make such use of pauses in the source text but also determined that the overall pause time in interpretations was less than those of the source texts (meaning that the interpreters talked more than the speakers). Barik also included analysis of errors in determining accuracy. His categories for errors included omissions, additions, and substitutions (remember that Gerver included "corrections" but did not include "additions").

Goldman-Eisler (1972) also investigated pausing structures and identified three strategies employed by interpreters: 1) they may match the pausing structure in their target texts; 2) they may begin their target text before the source text pauses; 3) they may string together several segments without reflecting the source-text pauses. In other words, interpreters may or may not use identical pausing as compared to the source presenter.

Part of the value of this information was the understanding that interpreters are directly in charge of the work they produce. Various metaphors for interpreting have previously suggested that the interpreter only repackages the information from its source form to its target form while doing nothing else to its organization; but research from the early 1970's began to build a case contrary to this view. Seleskovitch (1978) provided a different metaphor than that of a "conduit:"

> The interpreter is an intermediary, like the actor whose style of acting complements the playwright's script. And like the actor, he knows that to put his message across successfully, he must not be self-effacing but, on the contrary, make his presence very much felt. Like the actor, the interpreter is good or not so good and, like him, his presence is always felt. (p 112).

All of the experimental studies of the 1960s and early 1970s used audiotape recordings of source texts rather than live, spontaneous presentations. They provided the bulk of scientific research on interpreting when David Gerver (1976) performed an extensive review of research on the interpreting process between spoken languages. At that time there had been little research conducted by linguists, psychologists or teachers of interpreting. Gerver's explanation for the paucity of research included the relative youth of the profession (it had only been thirty years since the Nuremberg Trials) and the complexity of the process. These studies were divided into two different approaches: 1) analyzing the time lapse between source and target texts as well as the percentage of correctly interpreted words; and 2) analyzing the errors generated along with personality measures and factors causing stress during the interpreting process (eg. noise level).

Soon afterward Chernov (1979) proposed that the key to successful interpretation was the accuracy of predictions interpreters make about the source text. He credited semantic and pragmatic knowledge as the essential elements of predictability, but primarily analyzed the semantic realm of source language texts and how

semantic propositions were conveyed between spoken languages. In other words, the interpreter must understand the meaning of the source text and the intentions of its presenter to efficiently generate an equivalent target text. The ability to make predictions requires that the interpreter understand a source text's meaning beyond its words. Seleskovitch (1987) suggested that linguistic meaning is not as important as the "sense" conveyed in a text. This is an argument against finding merely lexical and semantic equivalents between languages. Instead the interpreting process should be a search to understand the message fully (to discourse and stylistic levels) and build one's interpretation from that understanding.

Wilcox & Wilcox (1985) defined the process of interpreting in terms of schema theory where the interpreter plays an active role in constructing meaning. They demonstrated that a part of constructed meaning comes from being able to make accurate predictions about the source text. One factor influencing predictions of source texts is the social context surrounding the source text. Tannen (1984) stated that as the understanding of linguistics grew to include studies of meaning, linguists began to understand that all meanings are influenced by their social contexts:

> In fact, there can hardly be any meaning other than social meaning. As a generation of generative semanticists discovered (with the result that they metamorphosed into pragmatists), hardly a sentence can be seen as having a crystalline meaning that cannot be changed by the positing of a different context for it. (p 7).

Gregory & Carroll (1983) address these issues as they relate to the process of translation:

> There has been a growing awareness that translation is not just a matter of item-to-item equivalence, or indeed of group of items to group of items, or structure to structure; rather it is a matter of text-to-text equivalence which involves variety and register considerations. (p 95).

Research on the Interpreting Process Including a Signed Language

Research on interpreting including a signed language did not begin until the 1970s. Most of the early studies of sign language interpreting investigated variables outside of the interpreting process. Quigley, et al, 1973 and Schein (1974) both investigated personality traits of interpreters but both failed to draw any correlations between personality traits and competency. Other research on student comprehension of interpreted texts (Caccamise & Blasdell, 1977; Jacobs, 1977; Newell, 1978) did not report on the performance of the interpretations.

Brasel's research (1976) determined that after twenty minutes of interpreting, the accuracy of the target text is significantly diminished. This information revealed the intensity of the work of interpreting and the need to have teams of interpreters providing service in order to maintain accuracy. Other factors also impact the accuracy of interpretations. Llewellyn-Jones (1981) studied interpreters working between British Sign Language (BSL) and English and found that linguistic abilities in the source and target languages were two areas which strongly influenced resulting interpretations. In other words, greater linguistic skill in both English and BSL provided more accurate interpretations. Beyond being skilled in both languages, however, he also found that choices in target language forms also influenced resulting interpretations. Hurwitz (1980) demonstrated that experienced interpreters out-performed inexperienced interpreters (as would be expected) when interpreting from American Sign Language to English. As predictable as this result would seem it clearly identifies that interpreting is a complex process not easily mastered in a short time.

Cokely (1986) investigated processing time (the time between the production of the source text and the interpreter's production of the target text) and miscues (errors)[3]. Cokely found an inverse relationship between processing time and miscues. This meant that the greater the length of time between the production of an element in a source text and its equivalent production in the interpreter's target text, the more likely it was to be correct[4]. While popular belief might hold that an ideal interpretation should be produced with very little processing time (so that it appears nearly simultaneously with the source text) Cokely's research found that such an interpretation is likely to be replete with errors.

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[3] Note that processing time and errors are the two areas that Gerver found the majority of prior research to focus on. Cokely's research tied these two areas together and found a correlation.

[4] With an optimum time frame of four to six seconds.

The research on the timing of interpreting was also a first step in demonstrating that interpretation is done differently by different people who make decisions about the work that they are doing. Various researchers have explored coping strategies used by interpreters. Napier (2002) explored the idea of interpreters using linguistic coping strategies to succeed in the process of interpreting. In reviewing Cokely's 1986 research Napier suggested that interpreters may deliberately use omission at times as an intentional coping strategy rather than merely an error.

Related to the concept of processing time is the overall processing strategy for interpreting, which can be generated either simultaneously with the source text or in consecutive bursts of information which alternate between source text productions and target text productions. Russell (2002) investigated simultaneous and consecutive interpreting[5] within legal settings and discovered that consecutive interpretation provided greater accuracy overall, particularly when the messages being interpreted contained technical terminology or content not well known to the interpreters:

> Overall, the interpreters recognized that the quality of their interpreting was better when they used consecutive interpreting, but consistently they said that they needed to have more practice with consecutive interpreting in order to have the process go more smoothly for all participants. The interpreters also identified how they need to employ more consecutive interpreting into their regular work. (Russell, 2002: 177)

Pausing structures in source texts and their target texts also have relevance to the simultaneous or consecutive nature of interpreting. Gee and Kegl (1983) determined that the use of pausing in American Sign Language narratives was related to the internal structure of those narratives with longer pauses occurring at organizational junctures within the narratives. Their work suggests that the use of pauses as an organizational component in a source text may be essential for an interpreter to replicate in a target text. Cokely (1983) investigated metanotative features of interpretations as they compared to the same features in the source presentations.

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[5] See Appendix G for definitions and explanations of consecutive and simultaneous interpreting.

Metanotative features reflect the organization of a text and the presenters attitudes and personality. Cokely found that interpretations appeared to produce more positive metanotative features than the source presentations, even though the source and target texts themselves contained equivalent content. This is to say that the way things were conveyed differed between the speakers and the interpreters while the content of the information being conveyed remained the same. Cokely suggested that ideal interpretations should allow the Deaf consumers to draw the same conclusions about how information was conveyed as well as ensuring that the information was also identical.

Beyond pausing and metanotative features, discourse markers also provide essential organizational information and need to be represented in target texts. Wilbur and Petitto (1983) found that the organization of ASL discourse parallels that of spoken language discourse, with both linguistic and non-linguistic features. Maintaining or gaining the floor is achieved primarily through raising the hands and averting eye gaze (except for questions) while terminations of conversational turns may be marked by such lexical items as "WELL," or "FINISH." Zimmer (1989) analyzed the interpretation of dialogic discourse (an interview) and found that while interpreters readily use turn holding strategies (um... er... well...) they rarely made use of turn maintenance strategies (I see... uh-huh... sure...). The hearing consumers of the interpretation – who heard silence instead of reassuring feedback – frequently attempted to repeat information or otherwise filled the silence because they perceived them as informational pauses. This caused interference and delays of the turns taken by the interpreter. Roy (1989) identified several strategies used by interpreters during overlaps of dialogic turn-taking such as assigning a turn (usually to the person of higher status), retaining information for insertion into the next turn, and omitting the information of both parties during the overlap. Zimmer's and Roy's research indicate that the interpreters function as a communication manager during dialogic discourse but are hard pressed to provide access to overlapping information such as turn-maintaining feedback or competition for taking the next turn.

Metzger (1995) specifically examined this role of the interpreter as a manager of dialogic discourse and found two primary forms of influence: 1) direct insertions of interpreter-generated content and 2) misrepresentations of the participant's perspectives within otherwise accurate interpretations. Metzger's and Cokely's work indicates that the interpreter's personal perspective and personality can directly impact an interpretation.

Roy (1987) and Gish (1987) emphasized the need for the interpreter to be aware of such things as discourse markers, contextualization cues, and constructed dialogue. Roy suggested that bilingual interpreters are more likely to focus on the lexical items and meanings when reviewing an interpretation; but they often ignore the use of discourse features in the source language and whether an appropriate match was found in the target text. Her study indicated that mismatches between an ASL source text (which used constructed dialogues) and an English interpretation (which inappropriately used constructed dialogues) lead monolingual English users to understand a lecture for adults in the source language (ASL) to be a children's story in the target language (English). Gish (1987) suggested an approach for text analysis which combines the interpreter's prior knowledge with the incoming information of a source text so that interpreters can determine the main points and secondary points. A target text which merely relates, but does not organize, these points is likely to be less useful than one which clearly states the main points and omits some amount of secondary points. Armed with this understanding of the organization of the text, interpreters should be better able to present a target text which shares similar organization to the source text. Once interpreters have understood the organization of the source text they also should make correct inferences when explicit information is not presented in the source text.

Cultural differences between the source text language and the target text language are another consideration in the ability to create equivalent meaning in the interpreting process. Cokely (2001) had ASL/Interpreting students research how non-deaf people associated meanings to eight specific English words[6]. These words were chosen as a subset of English words which have specific cultural meaning to deaf people. The non-deaf people involved were not to have any significant contact with the deaf community. The results indicated that the English words frequently used to identify culturally rich concepts (especially when interpreting from ASL to English) did not successfully convey these concepts for the non-deaf consumers. In other words, interpreters working to express these culturally rich concepts through only lexical equivalence are likely to fail.

[6] The eight words were as follows: *mainstreaming, cochlear implant, sign language, ASL, Gallaudet, hearing, hard of hearing,* and *deaf.*

Components of the Interpreting Process

Isham (1986) proposed six parameters which are essential to the interpreting process: 1) content (morphology and semantics), 2) function (pragmatics), 3) register, 4) affect, 5) contextual force (discourse), and 6) metanotative qualities (stylistics). Witter-Merithew (1987) identified four parameters necessary for text analysis in the interpreting process: 1) content (morphology and semantics), 2) context (discourse and register –how, who, what, and where), 3) function (pragmatics), and 4) style (stylistics). These four overlap for the most part with Isham's six parameters:

> CONTENT: analyzing what is being talked about, the topic, the general information being communicated. This stage of analysis usually provides understanding of the surface meaning of a message.
>
> CONTEXT: analyzing the circumstances or situation in which a particular text occurs, This includes an examination of the people involved, as well as the environment and setting in which the text occurs. This is the part of analysis that examines what surrounds the words used in the message and leads to the deeper level of meaning.
>
> FUNCTION: analyzing the purpose, function, object of the text. Understanding the goal of the message enables students to identify specific relationships, comparisons and contrasts in the message.
>
> STYLE: analyzing the structure, register and manner in which a text is expressed or executed. Looking at the distinctive ways in which one expresses oneself. Often, how interpreters weight information during an interpretation deals more with their own background and style than their understanding and recognition of the speaker's background and style. (Witter-Merithew, 1987: 78-79)

Witter-Merithew (1987) presents a five-part "Core Meaning Model" which includes 1) attending to the source message, 2) analysis of the source text, 3) transferring to basic meaning elements, 4) restructuring of the basic meaning into the target language, and 5) production of the target text. These elements roughly parallel the five

key elements in Colonomos' (1989) model[7] of 1) *Concentrating* on the source message, 2) considering its *Source Frame*, 3) *Representing* the message, 4) Generating a the *Switch* into the Target language, and 5) *Planning* and delivering the target text.

Register Variation and Interpreting

While language varieties are generally cultural, register varieties may be more individual. One way to view pragmatic meaning is as a combination of "cultural convention and personal choice" (Zimmer, 1992: p 83). The present study considers cultural convention as *discourse*, and personal convention as *stylistics*: the unique but frequently repeated choices made by an individual in their speaking habits.

There are two studies of register in the interpreting process between ASL and English and both focus on English as the target text. June Zimmer (1990) compared two performances of simultaneous interpretation into English. Both interpretations were performed during the presentation of the ASL source text with the expectation that neither interpreter would interrupt the presenter. The source text and both interpretations were recorded on videotape and are commercially available. Zimmer noticed differences in spoken English productions between the two interpretations. One interpreter tended to use more colloquial terms, shorter, simpler and sometimes incomplete, sentence structures. The other interpreter used more technical terms, longer, complex and nearly always complete sentence structures. Zimmer concluded that although there was variation in their interpretations, the register of both resulting works appeared to nearly match the source text with one interpretation being slightly less formal than the source text and the other being slightly more formal than the source text.

Risa Shaw (1987) conducted another significant study of register in ASL to English interpreting. Her research used samples from the same data tapes that Zimmer used in her study[8], but also sampled elements from another Deaf person providing a more formal lecture. Shaw's results indicated that a variety of variables (words per

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[7] Colonomos' model is based on concepts presented by Danika Seleskovitch (1978).

[8] The videotapes used in Zimmer's and Shaw's research are commercially available through Sign Media Incorporated ("Interpreting Model Series" Item #301).

minute, pausing, false starts, enunciation, complexity of sentence structures, vocabulary choices) were juggled between the two performances such that even with differences between the interpreters they both accomplished effective matching between the source text and target text registers. Zimmer's and Shaw's research both indicate that interpreters are able to match register in the process of interpreting but that this match is achieved through personally unique choices by each interpreter. In other words, individual and personal style of an interpreter will influence and infuse every target text that interpreter creates.

English-Influenced ASL Variation and Interpreting

Within American Sign Language (as with any language) there is significant variation for a variety of reasons. One kind of variation is known as Contact Signing (Lucas & Valli, 1992) where elements of English directly impact the productions of ASL. This phenomenon is sometimes desired by bilingual Deaf consumers of interpreting services who make use of the visual nature of ASL to make the message accessible while desiring the organization of the message to reflect the English structures of the source text. The Registry of Interpreters for the Deaf certifies this kind of interpreting with the title "Transliteration" (See Appendix D). It will be referred to here as "English-Influenced Interpretation into ASL" or as "Literal Interpreting" since the target language is not a form of English but rather is a variety of ASL.[9]

Hoffmeister & Shettle (1983) present evidence that deaf adults who are bilingual in ASL and English will vary their communicative behavior depending upon their audience, whether native ASL users or people who have learned ASL later in life. Cokely (1984) addresses a similar issue in the frame of foreigner talk. While the visual-gestural language contact that can often occur between deaf and hearing people exhibits aspects of both English and ASL, Cokely attributes this to foreigner talk and learner's grammar. In other words, a hearing person who knows English will develop an interlanguage grammar based on English. The deaf person communicating with this hearing person will make adjustments in order to assist the hearing person's comprehension of the discussion.

[9] Note that a language can include varieties that are ungrammatical or disfluent, such as those produced by non-native users of the language. ASL signs presented in English word order may not be grammatically accurate ASL, but it remains distinct from the language of English, just as French words put into English word order would not be considered to be a form of French.

Lucas and Valli (1992) call this entire process "contact signing," which they propose is what occurs both between hearing and deaf people and also on occasion between deaf people. Contact signing has various features of both ASL and English, but is not entirely predictable: "There is a set of predictable linguistic features that do constitute a system, but there also seems to be a great deal of individual variation due to differences in linguistic background. This means that the contact signing input that second-language learners are exposed to may also be highly variable." (Lucas & Valli, 1992; p 118).

Winston (1989) investigated English-Influenced Interpretation into ASL (identified in the study as "transliteration") and discovered five strategies relevant to successful interpretation in this manner: 1) Sign Choice, 2) Additions, 3) Omissions, 4) Restructurings, and 5) Mouth Movement patterns. Sign Choices were conceptually accurate, based on semantic relationships of secondary or figurative meanings rather than phonological relationships to only a primary sense of the word. Additions were used to idiomatically clarify portions of the interpretation which were otherwise very literal and potentially confusing. Omissions were generally of morphological elements unique to English. Restructurings involved combinations of Sign Choice with grammatical structures in ASL which more clearly represented relationships than the syntax of the source text. Mouth Movements were used to disambiguate specific English words within the source text where a single conceptually accurate sign might have several possible English equivalent words.

Ingram (1988) investigated the differences between listening, literal interpreting and idiomatic interpreting and their effect on memory for syntactic and semantic information in the source texts. He found that interpreters could much more readily recognize the meaning of source texts after interpreting them. This result directly contrasted the results of similar research done with spoken language interpreting (Lambert, 1983; Gerver, 1974) which indicated a deficit for memory after interpreting as compared to only listening. The Lambert and Gerver studies also investigated shadowing, or verbatim repetition of the source text, and found that this had the most negative effect on memory as compared to just listening or interpreting. Ingram considered the literal interpreting task (which he labeled as "transliterating") initially to be a task similar to shadowing, but it showed improvement on memory over listening alone, indicating that it was indeed very different from shadowing.

Ingram explains his improved results in part as being related to a reduction in interference since the source and target texts are expressed in different, non-competing modalities. In other words, the interpreter's production of the source text (signed ASL) does not interfere with the perception of the source text (spoken English). McDermid (1996) also compared memory for meaning versus syntactic structure and confirmed Ingram's (1988) findings that interpreters much more readily recognize meaning rather than structure of source texts.

Siple (1993) analyzed the use of pausing within spoken discourse in relationship to the task of literal interpretation from spoken English to English-influenced ASL. The results of Siple's study indicated that spoken texts with random pausing disrupted the target transliteration more than spoken texts with normal speech pausing. This clearly indicates that literal interpreting is not merely a word for word lexical matching but enters into semantic processing; but also implies that the manner in which a text is delivered has an impact upon the way it is understood in the interpreting process and that source texts which maintain connections between ideas are more successfully interpreted than those which do not. In other words, the accuracy of the interpretation can be influenced by the clarity and cohesion of the source text.

Livingston, et. al (1994) compared idiomatic and literal interpreting of both narrative and lecture source texts. Forty-three Deaf subjects responded to questions after receiving one or the other stimuli. Results indicated that students receiving idiomatic interpretations performed better, even if the students had previously indicated a preference for literal interpreting. The authors analyzed the differences in the performances of literal and idiomatic interpretations. They found that the need to maintain the general syntax of the source text in the literal interpretations results in a very limited amount of processing time between hearing the source text and generating the target text. The limited processing time meant that message processing was generally at the lexical level which prohibited a deeper understanding of the source text prior to generating the target text. This limited understanding of the source text had less of an impact upon the interpretation of the narrative than it did the interpretation of the lecture. The authors conclude that the meanings of syntactically complex lectures is not adequately conveyed via literal interpretation.

It is interesting to note that for both tests the ASL to English requirements are identical except for the provision of additional processing time for the idiomatic interpreting task. This indicates that the Deaf community has need for both literal and idiomatic interpretations into signed languages while the hearing community benefits primarily from interpreting into idiomatic spoken language. This can be explained logically in that the Deaf community members are much more likely to be bilingual in both ASL and English and may desire to know the original structure of an English source text. The hearing community members are much more likely to have little or no knowledge of ASL and therefore have little need to know the original structure of an ASL source text.

Kelly (2001) provides an overview of the traditional views of "transliteration" as being a form of signed English. While several different specific manual English codes are identified as the possible result of the work of a "transliterator" the text focuses largely on the work done into what is called "Conceptually Accurate Signed English" which by Kelly's own definition is essentially ASL restructured to fit the grammatical patterns of English. This work largely reinforces the concepts that the work of "transliterators" is actually *literal* interpreting (as contrasted with *idiomatic* interpreting), but Kelly makes no attempt to reassign these labels.

These pieces of research represent the scientific investigation into the differences of literal and idiomatic interpretation into ASL. The Registry of Interpreters for the Deaf has also issued guidelines for successful completion of their performance exams for literal and idiomatic interpreting (see appendix D). These guidelines indicate essentially the same five variables that Winston's 1988 research identified as elements of successful English to ASL "transliteration" (literal interpretation).

Relayed Interpreting

Relayed interpreting occurs when the target text of an interpretation serves as another interpreter's source text. Janet Altman (1990) included relayed interpreting in a survey of ninety-four European conference interpreters (spoken language interpreting) and found overwhelming negative response to its use. Three questions on the survey were as follows (Altman, 1990: 32):

11. What is the effect of relay interpreting on the communication process?

very positive	positive	neutral	negative	very negative
2%	13%	28%	50%	7%

12. What is the effect on your work when you know you are being used as a relay?

very positive	positive	neutral	negative	very negative
4%	46%	38%	12%	0%

13. I prefer working on relay to interpreting "direct"

often	occasionally	hardly ever	never
2%	6%	26%	65%

Figure 2.1 – Altman's (1990) Survey Questions on Relayed Interpreting

While interpreters generally felt that serving as an early link in the process of relayed interpreting had a positive effect on their own work (50% responding either "very positive" or "positive" to question #12), they overwhelmingly agreed that relayed interpreting was detrimental to communication and that they did not prefer relayed interpreting to "direct" interpreting.

The use of relayed interpreting within the American Deaf community differs from its general use in spoken-language settings. Spoken-language interpreters who are part of relayed interpreting are likely to have a large number of direct consumers of their services, meaning that an interpretation from Arabic to French might serve a large number of French-speaking audience members at the same time that it serves as the source text for several relay interpreters working into English and German, for example. This means that the Arabic-to-French interpreter is not monitoring the English or German interpretations. In contrast, relayed interpreting within the Deaf community generally works between only two languages and the first interpreter is at least potentially able to monitor the production of the relayed target text and may in fact have only the relay interpreter as the consumer of the initial interpretation. This allows for much more feedback and interaction between the interpreters and therefore is likely to create greater confidence in the accuracy of the final interpretation. There are very few formal papers on Relayed Interpretation in general and only two which discuss the use of relayed interpretation where a signed language is involved.

Bienvenu & Colonomos (1990) describe relayed interpreting within the American Deaf community as involving a minimum of four parties: Hearing Consumer, Hearing Interpreter, Relay Interpreter (Deaf), and the Deaf

Consumer. In the spaces between each party they identify the language options being employed in the relayed interpreting process: Spoken English used between the Hearing Consumer and the Hearing Interpreter, "preferred Sign Variety" between the Hearing Interpreter and the Relay Interpreter, and then four options between the Relay Interpreter and the Deaf Consumer (based on the consumer needs): Foreign Sign Language, Idiosyncratic Sign/Gesture, ASL for monolinguals, and Native/Complex ASL (Bienvenu & Colonomos, 1990: 70). The first two of these are further explained within their article:

> A serious problem occurs when the person who requires relay interpretation has no formal language. In training, we must come up with strategies for communicating in gestures and mime. In some situations, this is not a difficult task, but, particularly in legal matters where the consequences are severe and the ideas are not concrete, it's very hard to come up with successful ways to communicate. It's important to keep in mind that some D/deaf people who come from other countries, will be relying on a much different gestural system than what is commonly used in America... If the D/deaf consumer is using foreign signs, that will give the relay interpreter a clue that there can be a basis for communication. (Bienvenu & Colonomos, 1990: 75).

Bienvenu & Colonomos identify legal, medical, mental health, psychiatric, and drug/alcohol treatment programs as settings where relayed interpreting may be essential for effective communication, especially when the Deaf consumer has little usable language and the information is complex. "Legal dialogues often have little to do with concrete and material things (i.e. the Miranda Warning), and it is difficult to convey abstract concepts using gestures." (p 77). Bienvenu & Colonomos also identify the use of relayed interpreting for public events:

> For years it has been standard practice to [provide idiomatic and literal interpreting simultaneously with two interpreters] for an event, whether it be a lecture, rally, performance, etc. A number of Deaf people in the audience have not always been able to follow the [literal interpreters] and some [idiomatic] interpreters have been equally unclear. An alternative to this would be to have a hearing [literal interpreter], in clear view of the relay interpreter, who would then take that [literal interpretation], and provide an [idiomatic] interpretation for the Deaf audience. (Bienvenu & Colonomos, 1990: 77).

Carolyn Ressler (1999) produced the first published research of relayed interpretation using ASL. Her study investigated only the Hearing interpreter's work and compared the differences between the Hearing interpreter's target text production when working as part of a relay team and when providing direct, solo interpretation of the same text (specifically, the hearing interpreter was asked months later to reinterpret the same material but not as part of a relay team). The source text was a videotaped message in spoken English and the setting was a research lab without any consumers of the interpreting work being done. Results indicated a few differences between the performances of the hearing interpreter performing direct and intermediary interpreting. These differences included significant direct eye gaze directed toward the deaf interpreter while working as a team (compared to much less "audience" eye gaze in the direct interpreting). The interpreting as part of a team had more head nodding (as part of monitoring the Deaf Target Text), had fewer signs per minute, and had greater use of fingerspelling. The teamed interpretation made significant use of pausing and clarification strategies (communication between the team members about the information being interpreted). Ressler's research did not investigate the differences between the Hearing interpreter's interpretation and the Deaf interpreter's target text within the relay team.

The use of eye-gaze for private communication between the interpreters will be an important part of this study. Luciano (2001) reviews eye-gaze research regarding ASL and the Deaf community, but sheds no new light, identifying the ways that eye-gaze might influence communication such as regulating turn-taking, enhancing interpersonal relationships, and referencing physical space, such as distractions. These uses of eye gaze are clearly useful for Relay interpreters who must make eye contact to maintain the communication between them, but may also shift their eye gaze for grammatical or referential meanings while doing their work.

Whynot (1999) compares the roles of interpreters and ethnographers and finds similarities in how both approach their work. One key area of similarity is that the members of the minority culture must trust the interpreter. Interpreters can enhance this sense of trust by increased association with minority culture members and thus gaining an inherent respect and desire to convey the meanings of the culture with accuracy. These concepts can help to explain the popularity of relayed interpreting with Deaf team members because the final target text is

generated by a member of the minority culture, thereby immediately increasing the trust that the minority culture members will have in the resulting interpretation.

Summary of the Literature

Research on the interpreting process began with observations made by Paneth in 1957. In the 1960s research was primarily experimental in nature which excluded the consumers of interpreting services. Observational studies began in the 1970s. Various models of interpreting have been proposed which currently leave us with the understanding of interpreting as an incredibly complex process primarily in the hands and mind of the interpreter.

The interpreting process has been previously assumed to be a simple matching of the meanings of words which is conducted automatically without conscious decisions being made by the interpreter. The research reviewed in this chapter indicates that interpreters are very much involved in making decisions regarding much of the communication process. Interpreters need processing time and vary the amount of processing time required to understand the source text and produce a target text (Paneth 1957; Oléron & Nanpon,1965; Llewellyn-Jones, 1981, Cokely, 1986). They may even produce a target text which has larger units of message production than the source text (Barik, 1973). Interpreters simultaneously attend to a source text while producing a target text (Gerver, 1974) and serve both as audience to the source text and as presenter of the target text (Roy, 1989; Seleskovitch,1995) which means they are working at least twice as hard as any of their consumers; and therefore interpreters can only work to their highest ability for a limited time (Brasel, 1976).

Interpreters with more language skills (Llewellan-Jones, 1981) and with greater experience (Hurwitz, 1980) are more likely to provide accurate interpreting. Interpreters can improve their accuracy while interpreting if they allow themselves more processing time during the task (Cokely, 1986). The organization of target texts created by interpreters may be influenced by the pausing structures in the source text (Barik, 1969; Siple, 1993) but interpreters may impose their own organization (Goldman-Eisler, 1972). Interpreters must know the meaning of the source text in order to accurately construct an equivalent target text (Chernov, 1979). Interpreters need to

have an understanding of the intentions and goals of the presenter to accurately construct an equivalent target text (Chernov, 1979; Seleskovitch, 1987).

Interpreters are communication managers who influence how participants take turns in dialogues while also directly influencing the meaning of the resulting message (Zimmer, 1989; Roy, 1989; Metzger, 1995; Cokely, 1983). Interpreters manipulate a variety of variables to create their own unique target texts (Zimmer, 1990; Shaw, 1987). Greater lengths of processing time and the use of consecutive interpreting provide for greater accuracy than shorter processing times and simultaneous interpreting (Cokely, 1986; Russell, 2002). Literal interpreting[10] shares many aspects with idiomatic interpreting and is significantly different from transliterating (Ingram, 1988;Winston, 1994; Siple, 1993). Idiomatic interpreting results in significantly better comprehension of complex source texts than Literal interpreting (Livingston, et. al., 1994).

Literal interpreting may play a part in relayed interpreting (Bienvenu & Colonomos, 1990) but there is currently no research which investigates the differences of the intermediary and final target texts within relayed interpreting. That is the focus of the present research.

[10] Literal Interpreting occurs when an interpretation places the target language words into word orders that parallel the structure of the Source Text.

CHAPTER 3 - RESEARCH METHODS

Data Collection – Participants & Setting

This study is structured around a carefully detailed analysis of a series of recorded performances of relayed interpreting. All of the recordings were made within a single week during the 1997 National Convention of the Registry of Interpreters for the Deaf. Since the early 1990s it has become tradition at RID's national conventions to provide relayed interpreting during plenary sessions. As a national organization dedicated to professional interpreting, the RID national conventions have recruited top, nationally recognized interpreters. Therefore, the relayed interpreting at the 1997 National Convention represents some of the best talent and experience in performing relayed interpreting. Two different communication events were videotaped: 1) a keynote presentation on the evening of August 4th and 2) a business meeting conducted on the afternoon of August 6th.

All of the participants in this research were people who attended the 1997 National Convention of the Registry of Interpreters for the Deaf held in Long Beach, California. The reason for selecting this venue for research was that the RID National Conventions regularly make use of relayed interpreting performed for a large and public audience. Relayed interpreting also takes place in much smaller and private settings (such as legal depositions or witness testimony) but it is much more intrusive to do research in these settings. The public venue of the RID conventions provides an ideal opportunity to document relayed interpretation with a minimum of intrusion.

Interpreter Participants

Seven interpreters became a part of this study because they had been selected to perform relayed interpreting services at the 1997 RID National Convention in Long Beach, California. Approval for initiating this research had been granted by the Executive Director of RID. Each interpreter-participant was informed of the goals of the research prior to the beginning of the convention. Each interpreter had the option of not participating, but all agreed to be included in the study and to be videotaped. Each interpreter-participant signed a permission form which allowed the researcher to use the videotape strictly for research purposes and not to exhibit any portion of the videotapes either publicly or privately[11]. Four hearing interpreters (three female, one male) and three deaf

[11] The Participation in Research and Permission forms can be found in Appendix A and B.

interpreters (two female, one male) were videotaped. The chart below identifies each interpreter for the purposes of this research:

Interpreter Designation	Description
DI-A	Deaf Interpreter, Female
DI-B	Deaf Interpreter, Female
DI-C	Deaf Interpreter, Male
HI-A	Hearing Interpreter, Female
HI-B	Hearing Interpreter, Female
HI-C	Hearing Interpreter, Male
HI-D	Hearing Interpreter, Female

Figure 3.1 – Coded Designations for Deaf and Hearing Interpreters

The interpreter teams for the keynote address consisted of two of the female hearing interpreters and both of the female Deaf interpreters. The keynote presenter was consistently interpreted by the same deaf interpreter (DI-A) throughout the entire sixty-six minutes of the keynote presentation. One of the hearing interpreters (HI-A) worked with this Deaf interpreter for the first fifty-five minutes of the keynote presentation and a different hearing interpreter (HI-B) worked with the same Deaf Interpreter for the final eleven minutes. The other Deaf interpreter (DI - B) provided interpretation for announcements prior to the keynote presentation and for one audience-member response during the keynote presentation.

The interpreters for the business meeting functioned in three, rotating matched sets. Each set worked for periods of between eighteen and twenty-eight minutes before rotating. Interpreters were assigned as follows: 1) DI-A with HI-C, 2) DI-C with HI-B, 3) DI-B with HI-D. The chart below identifies all the pairings of deaf and hearing interpreters, their sequence of work, and the duration of each portion of work.

Segment #	**Communication Event**	**Team Assignment**	**Duration**
Segment 1	Keynote Announcements	DI-B & HI-B	15.25 min
Segment 2	Keynote Presentation	DI-A & HI-A	11.5 min
Segment 3	Audience Response	DI-B & HI-B	0.75 min
Segment 4	Keynote & Responses	DI-A & HI-A	18.25 min
	Panel Response (in ASL)	no relayed interpreting	(1.75 min)
Segment 5	Keynote & Responses	DI-A & HI-A	3.0 min
	Panel Response (in ASL)	no relayed interpreting	(1.75 min)
Segment 6	Keynote & Responses	DI-A & HI-A	18.5 min
Segment 7	Keynote & Responses	DI-B & HI-B	10.75 min
Segment 8	Bus. Mtg Announcements	DI-A & HI-C	18 min
Segment 9	Business Mtg	DI-C & HI-B	28 min
Segment 10	Business Mtg	DI-B & HI-D	25.5 min
Segment 11	Business Mtg	DI-A & HI-C	25.5 min
Segment 12	Business Mtg (tape ends)	DI-C & HI-B	24 + min

Figure 3.2 –Deaf and Hearing Interpreter Team Assignments

Each of the four hearing and three Deaf interpreters had been selected to provide service based on their skill and national reputations. The fact that they were performing interpreting services in front of their professional peers creates a significant filter so that those candidates selected to interpret at national RID conventions are generally regarded as some of the best interpreters in the field.

The interpreting teams rotated to provide continual service during the performances of the source texts. Segments #10 and #11 represent the longest portions of providing interpreting services, each being under twenty-six minutes in length. Only two of the twelve segments (segments #1 and #8) contained source texts which began and concluded while the same interpreting team provided services. In other words, the interpretations were not interrupted by switching the members of relay teams during the performance of the source text. Segment #1 was composed of a series of brief announcements for fifteen minutes. Segment #8 contained a guest speaker presentation and provided the largest sample of uninterrupted monologic discourse interpreted from beginning to end by the same interpreting team. The two interpreters, (one hearing, one Deaf) both have very strong national reputations for excellence[12].

[12] as confirmed by my adjuncts and a peer on my committee, all three being RID certified interpreters with extensive experience interpreting and researching American Sign Language and interpreting.

Other Participants

The participants also include the presenters of the source text because it is their messages that provided the stimulus for the interpreting process. Relayed interpretation was only provided for plenary sessions at the convention. The primary presenters were Daniel Burch, the RID president at the time of data collection, who ran the business meeting, and Janet Bailey, a former RID president, who provided the keynote presentation. An additional presenter was a guest speaker from another interpreter organization.

The present research focused entirely on Segment #8 – the segment with the guest speaker at the opening of the business meeting. Segment #8 was chosen for two reasons: 1) both members of the interpreting team providing service during this segment have excellent reputations for providing quality interpretations and also have had extensive experience working professionally as a team and 2) this segment has a message which begins and concludes within ten minutes, and thus was interpreted, in its entirety, by the same interpreting team without any rotation of interpreters.

The remaining participants include the Deaf and hearing audience members. They function as participants in that they are the receivers of the final target text. The audience members were largely interpreters and professionals involved in the interpreting profession. Both Deaf and hearing audience members were fluent in ASL and able to understand the messages generated by the Deaf interpreter. The hearing audience members, however, would have double access to the message because they would also have direct access to the source text and thus could compare the source text with the target text. Both the Deaf and hearing audience members generated some amount of auditory feedback to the presenters in the form of laughter, coughing, murmuring, or silence. The microphones on each camera recording the video data captured much of this auditory information from the audience and it was including in the data entry and analysis.

Likewise both the Deaf and hearing audience members would generate some amount of visual feedback to the presenters and the Deaf interpreter, such as smiling, yawning, looking at the stage space or each other, and waving or gesturing. This visual feedback from the audience members is not directly reflected in the data, but could have some impact on the interpretations. The Deaf audience members were generally seated together.

This provided a specific portion of the audience for the Deaf interpreter to focus on. The Deaf audience members would likely have a greater impact on the interpretation since they are the direct audience for the interpretation.

The Ethics of Data Collection

Professional interpreters work under a Code of Ethics which directs (among other things) that information gained while performing the work of interpreting be kept confidential. Because of this necessity to maintain the trust of our consumers, it was necessary to take several steps to ensure that this tenet of the code of ethics, and all others as well, were adhered to. The first step was in choosing a setting in which I was not only researcher but also participant. The national RID conventions are a fairly regular experience for me and therefore it was not unusual for me to be present at one. In this aspect of confidentiality, there is no conflict at all with that fact that I have access to the information presented during the course of the relayed interpreting.

The next aspect of confidentiality is one often not understood by people entering the field of interpreting. Confidentiality is often misunderstood to mean that an interpreter does not tell anyone anything about an interpreting assignment. This may indeed be a good practice because it avoids a significant amount of ethical concerns. I remember a good friend who was so strict about not telling anyone anything about her interpreting work that she would not even admit to the fact that she had been interpreting in the first place. She would only respond that she had been "working" and no one could gain any further information than that.

Confidentiality means that only the people who need to know will find out about the information. The contracts signed by me and the participant-interpreters prior to data collection was a very overt statement that ensured that only those people who needed to see the data (the interpreter-participants and the researcher's committee) would have access to the information once the live, real-time event had concluded. An additional statement maintaining subjects' confidentiality was signed by the members of the dissertation committee.

Videotaping an Interpreted Event

Early research on interpreting was experimental in nature, generally concerning only spoken languages (eg. Oléron & Nanpon, 1965 and Gerver,1969). Many of these experimental studies would use audio recordings for source texts and would have an audio recorder as the target audience. Ethical issues were of little concern in such artificial situations, but the results of experimental research have been of limited use in analyzing real-world use of interpreter's services.

Observational research of signed language interpreting requires the recording of visual information. Dennis Cokely (1984) was one of the first to perform such research of simultaneous interpretation within a national conference setting. The videotaping of interpretations of private or personal communication, however, raises concerns about the influence of a researcher upon the processing being investigated. Cynthia Roy's (1989) research of an interpreted interview was based on a fairly private interaction but one in which all three participants (professor, students, and interpreter) had a long and comfortable relationship with the researcher.

Interpreting is a process where the interpreter is not expected to personally gain from the information exchanged during the process. Likewise, neither the identity of the participants nor the nature of the communication is to be made public except by the participants and by their own choice – interpreters are to maintain confidentiality regarding all aspects of the communication involved in their work. Video recordings not only document the contents of the interaction but clearly identifies the people involved. These ethical issues were resolved in Roy's work through the consent of all participants (including the interpreter) that their interaction would serve as research data.

The data for the present study were publicly performed before an audience of more than one thousand people. While the interpreters were still bound to achieve no personal gain from the information they exchanged, nor to reveal the participants or topics, the one thousand audience members, of which the researcher was one, were under no such restriction. The researcher agreed, however, not to publicly or privately exhibit the recordings made as part of the agreement to obtain the permission of the interpreters. Data were collected via two video cameras which were set on tripods and ran, for the most part, unmanned, with black tape covering the tell-tale

red light which indicates recording. In viewing the recordings it is evident that the cameras were only of concern to their subjects during the brief moments when they were being checked by the researcher.

The Process of Data Collection

The process of video recording relayed interpreting required that two cameras simultaneously record the two "A" members of the interpreting team. One of the additional benefits to collecting video data from a public event such as the RID national conventions is that lighting is already sufficient for clear video recording of interpreters on stage. Two video cameras were required. One camera was placed along the wall of the meeting room, facing the main stage where both the presenter and the Deaf interpreter were visible to the general audience. This camera was positioned so that the Deaf interpreter was on the left side of the video image and the presenters were on the right side. The other camera was placed to one side of the stage and focused on the hearing interpreter who sat in the front row of seats (across from the Deaf interpreter) facing both the presenter and the deaf interpreter. This placement of cameras allowed for the filming to take place without positioning the cameras in the path of people moving onto and off of the stage. It also provided enough distance between the cameras and their respective subjects so that the subjects would not be preoccupied with the fact that the video cameras were running.

Once the recording was finished, it was possible to produce rough copies of the tapes which inset one interpreting performance within the image of the other so that they were synchronized for the real-time occurrence of the turn-taking exchanges required to produce effective relayed interpreting. Computer technology (mentioned below) later provided a much more precise means of manipulating the exact framing and placement of each interpreting into a single split-screen image while also ensuring their precise synchronization.

The segment chosen as the focus of this research (Segment #8) is an opening segment of the business meeting run by Daniel Burch, the President of the RID in 1997. The first ten minutes of this session include the introduction of a guest speaker to the audience, who then provides an overview of a different organization serving interpreters in Canada and closes with an invitation to attend that organization's conference in 1998.

This segment is interpreted by the same interpreting team in its entirety, which allows it to serve as a complete text with an introduction, beginning, middle, and end.

Data Analysis

As mentioned above, video recording of the relayed interpreting process required the use of two videocameras: one to capture the hearing interpreter (seated in the front row of the audience) and the other to capture the Deaf transliterator (standing to one side of the main stage, in front of the hearing interpreter). Once the two simultaneous video recordings were made, they were each transcribed using standard practices for English discourse transcription of the spoken-English source texts (Tannen, 1984), and standard practices for ASL Glossing of the ASL texts generated by both the hearing interpreter and the Deaf interpreter (Baker & Cokely, 1980). This means that a total of three transcripts were initially produced; one each for 1) the Source Text (ST), 2) the Hearing interpreter's Target Text (HTT), and 3) the Deaf interpreter's Target Text (DTT). The sentence structures, discourse markers, use of pausing, and affective elements of all three texts were reviewed.

Intensive, computer-based video data entry and analysis

Several multi-step processes were applied to the video data which made extensive use of Macintosh computers and various software applications, including some original programming specifically for the purposes of this research. Initially the video data of both video recordings for Segment #8 were recorded into digital format using iMovie software. These two data files were then merged into a single split-screen dataset using Final Cut Pro digital editing software. The two data fields were synchronized to show the actual time of delivery for each part of the interpreting process[13]. A digital version of the audio and video data was then created using Quicktime software. The Quicktime version of the data set was then merged with data fields using SignStream software which allows the creation of links between video data and text fields and was designed specifically for signed language research. Signstream software generates a running time counter which displays the frames elapsed

[13] Initially this was attempted by means of matching the audio tracks; however the video data for Segment #8 contains two instances where flash photography took place. The video data indicated that the audio-track matching was two frames out of complete synchrony. The identifcation of the single videodata frames in each data file which corresponded to the flash of light (which was always present in only a single frame per instance) provided the means to ensure complete synchrony of both texts in the split-screen version.

since the onset of the source text and allows the duration of any element (lexical items, non-manuals, vocalizations, etc) to be marked for the onset and termination of each occurrence.

Data Entry

Using the SignStream software the video dataset was augmented by adding transcript data and additional notations. These data entries were accomplished in five steps:

Step 1 – The transcript for the spoken Source Text portion of the data was entered into the SignStream database, including any misproductions, pauses, restatements, etc. Each utterance in the ST transcript was analyzed to identify the onset and termination of each spoken element[14] of the ST transcript. This allowed each utterance of Source Text data to be associated to specific time codes.

Step 2 – The signed text of the Hearing interpreter was transcribed by means of GLOSSES. Glosses are words which are used to represent the meanings of each sign. Glosses are used because there is no commonly-accepted, standardized written system for American Sign Language. Glosses provide access to the lexical items in an ASL text and provide a transcript of ASL that can be easily reviewed and compared to other data. The transcript for the spoken Hearing interpreter Target Text portion of the data was entered into the SignStream database, including any misproductions, pauses, restatements, etc. Each utterance in the HTT transcript was analyzed to identify whether it was produced by the dominant or non-dominant hand and also to identify the onset and termination of each signed element. This allowed each utterance of HTT data to be associated to specific time codes.

Once the Glosses were identified and mapped to the Quicktime version of the videodata, additional non-manual signal information was identified and linked to the videodata. These non-manuals included a) eye gaze, (directed at either the other interpreter, the presenters, or as lexical eye gaze[15]) b) eye brow positions (raised, or furrowed, including grammatical information such as wh-questions, topics, conditionals and yes-no questions),

[14] Spoken elements include lexical items (words) and other vocalizations, such as false starts or fillers such as "umm…".
[15] Lexical eye gaze occurs when the signer's eyes are focused either on the hands or on specific points in signing space.

and c) head postures (including head tilts, head shakes, and head nods). Each instance was entered into the SignStream database, and analyzed to identify the onset and termination of each behavior. Another review of the data resulted in additional information regarding the performance, including the identification of false starts, the meanings of non-specific gestures or behaviors and any other information which provided clarification not already present in the lexical portion of the transcript. The result of this step is referred to as the "Hearing interpreter Target Text" transcript or data, and is abbreviated as "HTT".

Step 3 – The signed text of the Deaf interpreter was transcribed in the same way as the hearing interpreter's text was transcribed in step 2. Similarly to the transcriptions in steps 1 and 2, the data were also entered into the SignStream database which provides corresponding time codes for the production of each sign and each non-manual signal. The result of this step is referred to as the "Deaf interpreter Target Text" transcript or data, and is abbreviated as "DTT".

Step 4 – The audiotrack of the data was reviewed for all perceivable forms of audience response/feedback (including applause, laughter, coughs, and cheers).Entries were made which identified the onsets and terminations for all instances of audience response/feedback.

Step 5 – The final steps in altering the SignStream data set involved editing and corrections. The most common corrections involved altering the words used for GLOSSES so that the same signs used identical GLOSSES regardless of the nuances of difference (such as past versus present tense).

Methods of Analysis

The transcripts and time-coded database were then compared and analyzed in five patterns:

A) Comparisons of lexical items and semantic concepts (ST, HTT, & DTT)

B) Determination of the time delay for the presentation of concepts (ST, HTT, & DTT)

C) Comparisons of word orders and use of complex grammar (HTT vs DTT)

D) Comparisons of stylistic differences (HTT vs DTT)

E) Analysis of private communication between the interpreters (Hearing & Deaf)

The specific means of analysis were all facilitated by the SignStream database software and include the following types of analysis:

A1) Identification of all of the key concept words in the Source Text (ST) and determination whether they appeared intact in the HTT and in the DTT. The transcripts for all three texts (ST, HTT, DTT) were transferred into a Microsoft Excel spreadsheet which allowed different columns to be assigned for each of the three texts. This step was somewhat subjective and involved noting the key words which would be required to generate useful notes from the Source Text. These notes would have sufficient detail to capture all names and titles that were mentioned in the ST along with the essential relationships between the key words. Semantically equivalent lexical items were then identified in the HTT including signs which were hypernyms or hyponyms.[16] The same comparison was made for the DTT. Where no equivalent, non-pronoun sign was produced a null symbol "ø" was entered in the HTT and/or DTT column as appropriate.

A2) Identification of all of the nouns in the Source Text (ST) and determination whether they appeared in the Hearing interpreter Target Text (HTT) and/or in the Deaf interpreter Target Text (DTT). This approach was chosen to provide a non-subjective method to contrast with that identified in A1.[17] This included all instances of any noun (including redundancies and false-starts). This excluded the use of pronouns and adverbs such as "here" or "there". The transcripts for all three texts (ST, HTT, DTT) were transferred into a Microsoft Excel spreadsheet which allowed different columns to be assigned for each of the three texts. Initially the ST was reduced to only nouns, then semantically equivalent lexical items were identified in the HTT, eliminating pronominal references but including signs which were hypernyms or hyponyms. The

[16] A Hypernym is a word from a higher, more generic category while a Hyponym is one from a lower, more specific category. As an example, "fruit" is a hypernym for the more specific word "apple" but "fruit is also a hyponym of the more generic word "food".

[17] The identification of a "noun" is much more objective and clear than the identification of a "key concept"; however, the analysis of key concepts in A1 is still held by the researcher as the more useful (and faster) means of text analysis for the comparison of Source and Target texts. While nouns are fairly objectively determined, they do not represent the entirety of the message and in fact it is possible to capture all of the nouns and completely misrepresent the relationships between them (Bob bought a car vs Bob sold a car vs Bob crashed a car, etc)

same comparison was made for the DTT. Where no equivalent, non-pronoun sign was produced a null symbol "ø" was entered in the HTT and/or DTT column as appropriate.

B1) Identification of the time delay between the ST, the HTT, and the DTT by focusing on the time codes for the onset of the key concepts identified in analysis A1. Again, Excel spreadsheet software provided a means not only for listing the time code information but also for performing mathematical calculations to determine the time differences both by frame counts and by seconds. Simple calculations also identified the briefest, the longest, the mean, median and mode for each pair of ST versus HTT, HTT versus DTT, and ST versus DTT.

B2) Identification of the time delay between the ST, the HTT, and the DTT by focusing on the time codes for the onset of the nouns identified in analysis A2. Excel spreadsheet software provided a means for listing the time code information and for performing mathematical calculations to determine the time differences by frame counts and by seconds. Simple calculations also identified the briefest, the longest, the mean, median and mode for each pair of ST versus HTT, HTT versus DTT, and ST versus DTT.

C1) Comparison of ten sets of complete utterances[18] (HTT, DTT) and identification of some of the ways that the DTT syntax differs from the HTT. This analysis is a more subjective explanation of differences between the texts, but allows a more direct viewing of portions of the database.

C2) Comparison of the content of each utterance (HTT, DTT) and identification of instances where the DTT word choices and word orders are different from the HTT. This analysis made use of Excel spreadsheet software to generate a direct counting of elements in the transcripts.

C3) Comparison of the content of each utterance (HTT, DTT) and identification of relative frequencies of the use of specific morphological elements (the use of Classifiers, Fingerspelling, Indexing and

[18] These utterances were sampled at regular intervals, one minute apart from each other throughout the entire ten-minute text. Although the entire dataset could be presented in this work, analysis C1 is included to provide scholars and practitioners systematic access to the raw data with commentary from the researcher.

Pronominalization) between the two interpretations. This analysis made use of Excel spreadsheet software to generate a direct counting of elements in the transcripts.

C4) Comparison of the use of grammatical non-manual signals (eyebrow and head postures) between the HTT and DTT. This analysis made use of Excel spreadsheet software to generate a direct counting of elements in the transcripts.

D) Comparison of the use of dominant-handed and non-dominant-handed versions of signs between the HTT & DTT. This analysis made use of Excel spreadsheet software to generate a direct counting of elements in the transcripts.

E1) Identification of eye gaze behavior patterns which take place between the Hearing Interpreter and the Deaf Interpreter. This analysis made use of Excel spreadsheet software to generate a direct counting of elements in the frame-based transcripts.[19] Part of this analysis looked at the co-occurrence of various forms of eye gaze, including the occurrence of mutual eye gaze.

E2) Identification of non-manual signals, signing in reduced or restricted space, and any other elements where the HTT is not directly relayed as part of the DTT. This analysis made use of Excel spreadsheet software to generate a direct counting of elements in the transcripts.

[19] The "frame-based" transcript identified every element of the HTT and DTT on a frame-by-frame basis (totaling to over 18,000 complete data lines in the transcript) whereas the "onset-based" transcript identified only a single occurrence of each element of the HTT and DTT and identifying the frames related to their onset times.

CHAPTER 4 - RESEARCH RESULTS

Results of Lexical / Semantic Comparisons

Lexical / Semantic Comparisons

This level of analysis was conducted using two different but overlapping methods:

A1) Identify all of the key concept words in the source text and determine whether they appeared intact in the HTT and in the DTT.

A2) Identify all of the nouns in the source text and determine whether they appeared in the Hearing Target Text and in the Deaf Target Text.

The first of these methods was designed to provide a completely objective means of identifying elements from each text. Identification of nouns is fairly straight-forward. By focusing on only nouns, however, much of the propositional content of the message is ignored, which was the reason for a secondary, more subjective analysis. The process of interpreting provides significant variation in the number of ways that an interpreter can create their Target Text while remaining accurate and faithful to the original concepts and intentions of the source text. While this starting point has the benefit of being very objective – identifying nouns in the source language – it is problematic as a way of analyzing interpretation because the information may be relayed in target-language forms other than nouns.

The second method was designed to create a condensed version of the source text, similar to taking notes, but limited to the actual words produced in the source text without paraphrasing.

Both of these methods are less complete than a full propositional comparison between the texts. Mildred Larson (1984) explains propositional content and how it can be used to analyze translations. Larson identifies a number of components including THINGS, EVENTS, ATTRIBUTES, and RELATIONS[20]. While a propositional

[20] Larson (1984) identifies propositional labels in capital letters. An example (page 191) is "The destruction of the city was planned well." In this sentence Larson identifies two EVENTS: destruction and planned. Although syntactically the word *destruction* is a noun, propositionally Larson explains the sentence as follows: "(Someone) destroyed the city." and "(Someone) planned well."

analysis would be much more thorough, it is not entirely objective and would take significantly more time than the alternative methods already mentioned above.

Analysis A1 – Key Concepts

Analysis A1 makes use of "key concepts". While this is a much more subjective measure than a counting of nouns, it is more rooted in the reality of interpreting and notetaking. A key concept is a specific noun, action, or relationship which is essential in understanding the main points of a message. Obviously the distinction of a main point versus a minor point leaves room for debate.

A total of 157 key concept words were identified in the source text. 149 of these key concept words were also present in the Hearing Target Text (95 %). 148 of these key concept words were present in the Deaf Target Text (94%). A comparison of the Hearing Target Text (HTT) and the Deaf Target Text (DTT) indicated that of the 149 key concept words represented in the HTT all but one (a total of 148) were present in the DTT (99%)

"Key Concept" Analysis Comparison Categories	Key Concepts Represented	Total Number of Key Concepts	**Percentage (Accuracy)**
Hearing Interpreter vs source text (HTT vs ST)	149 Key Concepts (HTT)	157 Key Concepts (ST)	**94.9%**
Deaf Interpreter vs source text (DTT vs ST)	148 Key Concepts (DTT)	157 Key Concepts (ST)	**94.3%**
Deaf Interpreter vs Hearing Interpreter (DTT vs HTT)	148 Key Concepts (DTT)	149 Key Concepts (HTT)	**99.3%**

Figure 4.1 – Semantic Analysis Results: "Key Concepts"

Analysis A2 - Nouns

A total of 258 nouns were identified in the source text. 162 of these nouns were also present in the Hearing Target Text (62.8 %). 163 of these nouns were present in the Deaf Target Text (63.2%). *This means that the Deaf Interpreter correctly represented more of the nouns than were represented in the Hearing interpreter's target text.* While the hearing interpreter did not represent 96 of these nouns, the Deaf interpreter recovered three of these unrepresented nouns. Although it is not possible to identify with complete certainty how this is possible for each instant, some of the instances are due to the predictability of the text, the knowledge that the

interpreters have regarding each others' knowledge, and the syntactic need for nouns in the final syntax of the target text. Each of the three instances will be reviewed in the next section.

A comparison of the Hearing and Deaf Target Texts indicated that the Deaf interpreter only failed to represent two of the 162 nouns which were represented by the Hearing interpreter. This means that the Deaf interpreter's accuracy in representing the nouns generated by the Hearing interpreter was 160 out of 162 for an astounding accuracy of 98.8%. When accounting for the three additional nouns which were NOT represented by the Hearing interpreter, yet were still recovered and represented by the Deaf interpreter, then the accuracy level of the Deaf interpreters compared with the Hearing interpreter rises to 163 out of 162 represented items or 100.6%!

As mentioned earlier, the use of nouns in a source text may be a very objective means of assessment, but does not account for redundancies in a message, nor for the representation of generic nouns (in the source text) with alternative syntactic structures (in the target text) which do not generate nouns of comparable meaning. In other words, interpreting is not a word-for-word activity but rather a process of finding equivalent concepts and propositions between the source and target texts. The analysis of the use of nouns has some value and provides an objective starting point for relatively quick analysis; but analyzing nouns to determine the overall accuracy of an interpretation is not comprehensive enough to generate a valid assessment of the overall message equivalence in an interpretation.

Further investigation of the 96 nouns which were not represented by the Hearing interpreter reveal that 58 of them were verbatim repetitions of previously identified nouns and an additional 18 were generic nouns (such as "area" or "thing"). When these numbers are considered in the analysis of the Hearing interpreter's representation of nouns it brings the total number of non-redundant and non-generic nouns to 182 items in the source text. The Hearing interpreter's numbers then are 162 out of 182 (or 89.0 %). The Deaf interpreters numbers were actually greater: 163 out of 182 items (89.0%). When the Hearing and Deaf Target Texts are compared, the Deaf Target Text (DTT) had 163 nouns represented compared to the 162 of the Hearing Target Text (HTT) generating a score greater than 100%. It is worth noting, however, that only 160 of the 162/163 items overlap. Two of the Source Text nouns represented by the Hearing interpreter were not also represented

by the Deaf interpreter. This leaves three different nouns which were represented by the Deaf interpreter even though they were not represented by the Hearing interpreter.

"Noun" Analysis Comparison Categories	Non-Redundant & Non-Generic Nouns Represented	Total Number of Represented Nouns	**Percentage (Accuracy)**
Hearing Interpreter vs source text (HTT vs ST)	162 Nouns (HTT)	182 Nouns (ST)	**89.0%**
Deaf Interpreter vs source text (DTT vs ST)	163 Nouns (DTT)	182 Nouns (ST)	**89.6%**
Deaf Interpreter vs Hearing Interpreter (DTT vs HTT)	163 Nouns (DTT)	162 Nouns (HTT)	**100.6%**

Figure 4.2 – Lexical/Semantic Analysis Results: "Nouns"

How Was Missing Information Recovered by the Deaf Interpreter?

There are three specific incidences to investigate for recovery of information. The first occurs in the generation of the name of an organization. The source text contains the following phrase "AVLIC: the Association of Visual Language Interpreters of Canada". The Hearing interpreter begins this phrase but stops short of completing it: "AVLIC, ASSOCIATION #OF VISUAL LANGUAGE INTERPRET". This last sign is held while maintaining direct eye gaze and producing head nods as the Deaf interpreter regenerates this message and continues by completing the title of the organization with "#OF CANADA". The Hearing interpreter is perfectly aware that the Deaf interpreter knows the name of the organization and readily confirms the Deaf interpreter's logical assumption that the entire name was provided in the source text.

The remaining two incidences are both related to the use of repetition in the DTT; and both of these were generated through a process which Arlene Blumenthal Kelly (1995) has identified as "Sandwiching". Sandwiching occurs when fingerspelling is used adjacent to the production of an ASL sign for the same concept. Four possible configurations of Sandwiching are possible: 1) fingerspelling, generating a related ASL sign, then fingerspelling again; 2) signing, fingerspelling, and then repeating the sign; 3) fingerspelling then signing; and 4) signing then fingerspelling. Blumenthal-Kelly identifies the last two of these possibilities as "Half-Sandwiching".

In a listing of various languages used at AVLIC conferences, the source text states the following phrases: "…English, French, ASL, and LSQ, Quebec Sign Language. So all these languages are operating…" Technically, the spoken text has a kind of sandwiching with both the letters "LSQ" being spoken and subsequently defined as "Quebec Sign Language". The Hearing interpreter's text for these meanings maintains this half-sandwiching as follows: "#LSQ THAT QUEBEC SIGN LANGUAGE CL-FOUR; INTERPRET+" The Deaf interpreter's text contains significant redundancy as well as full sandwiching: "1ST-OF-FOUR ENGLISH, 2ND-OF-FOUR FRENCH, 3RD-OF-FOUR #ASL, 4TH-OF-FOUR #LSQ. THAT-ONE QUEBEC SIGN LANGUAGE, #LSQ; INTERPRET+". Propositionally, the Hearing interpreter's message and the Deaf interpreter's message are equivalent. Using the more strict noun-counting method, however, meant that while the Source Text repeats the noun "languages" in the phrase "…all these languages are operating…". The Hearing interpreter's text generates the handshape for the number FOUR on the non-dominant hand but does not actually reference it clearly with the dominant hand, thus the dominant hand was glossed as "CL-FOUR" and that particular production might best be categorized as an incomplete production. This means that the repeated concept of "languages" is not clearly generated in the Hearing interpreter's text. The sandwiching of "#LSQ" in the Deaf interpreter's text, however, provided a hyponym for "languages" and thus it was credited as a captured concept in the Deaf interpreter's transcript.

The remaining example of the Deaf interpreter capturing an element of the Source text which was not represented by the Hearing interpreter appears in a segment refering to money denominations. The key-concept analysis considers that in fact no key concepts were missed by either the Hearing or the Deaf interpreter in this segment, which is explored here to provide a greater understanding of a variety of issues related to this research. The Deaf interpreter was able to capture a redundant mentioning of the Source Text word "coin" through an equivalently redundant Target Text: fingerspelling (#COIN) and then creating a "half-sandwich" with an ASL classifier to represent the same concept (CL-COIN).

The source text states "… in my <u>opinion</u> our <u>money</u> is much more interesting than yours. We have lots of <u>fives</u> in circulation, they're blue. We have lots of <u>tens</u> in circulation, they're purple. We have lots of <u>twenties</u> in circulation and they're green. I look at your <u>money</u>… it's all green and I get confused. And I only get <u>ones</u>…

ones [redundant] and twenties… like where are the fives and tens and twos, you know? But our one and two denomination are actually in coin…and our one dollar coin has a picture of a loon on it and we call it.. we call it the loony!"[21] The seventeen underlined words in this sample are the targeted words of the noun-based analysis.

The equivalent portion of the Hearing interpreter's transcript is as follows: "1PP-PL-POSS MONEY CL-DOLLAR BEAUTIFUL THAN 2PP-PL-POSS BEAT-2PP PAUSE 5-DOLLAR BLUE+++ TEN DOLLAR PURPLE TWENTY DOLLAR CL-BILL GREEN AMERICA GREEN SAME-ALL-OVER HERE CL-look-at-hands 1PP THINK-MESSED-UP MIX-UP EXCHANGE LOOK-AT-OBJECT. BUT THAT FIVE-DOLLAR MINIMUM PAPER INDEX ONE-DOLLAR INDEX TWO-DOLLAR CL-COIN ONE-DOLLAR INDEX-HND PICTURE BIRD #LOON 1PP-PL CREATE NAME #LOONY" The twelve underlined words in the above sample are the signs which were considered lexical equivalents of the Source Text words in the noun-based analysis. The unmatched concepts in this lexical comparison are represented by the following five Source Text words: "opinion twenties tens denomination coin"

The equivalent portion of the Deaf interpreter's transcript is as follows: "2PP-PL-POSS MONEY CL-HOLD-FLAT-OBJECT MONEY BEAUTIFUL #US CL-FLAT-OBJECT INDEX-LEX FINE FIVE-DOLLAR(nd) BLUE, TEN-DOLLAR #WHAT, PURPLE, TWENTY GREEN. AMERICA GREEN++++ WHAT-HUH 1PP CL-MANIPULATE-FLAT-OBJECTS 1PP CONFUSE WHAT-HUH GREEN AMERICA INDEX. PAUSE. INDEX THAT FIVE-DOLLAR MINIMUM PAPER INDEX ONE-DOLLAR(nd) TWO-DOLLAR #COINS CL-COIN INDEX-LEX PICTURE(1hand) INDEX-LEX BIRD #LOONI KNOW #LOON INDEX-LEX 1PP-PL NAME INDEX-LEX NAME(1hand) #LOONY" The thirteen underlined words in the above sample are the signs which were considered lexical equivalents of the Source Text words in the noun-based analysis. The

[21] The statistics in this footnote are intended to provide some sense of the overall timing and speech rate for the Source text. This portion of the source text occurs between frame 14122 and 15164 in the SignStream data set. This comes to 1042 frames, meaning that it took 34.7 seconds to produce these 102 words. This includes all of the pauses between words and phrases (a total of 210 frames, or 7.0 seconds). The resulting difference is a total of 832 frames (27.7 seconds) for 102 words. This provides a speaking rate (in this sample) between 176 words per minute (including the pauses) to just under 221 words per minute (without the pauses). While the analysis of speaking rates is not the focus of this research, the author considers this speech rate to be typical of the majority of the Source Text in this research.

unmatched concepts in this lexical comparison are represented by the following four Source Text words: "opinion twenties tens denomination"

Results of Processing-Time Comparisons

This level of analysis was conducted based on the methods of the first level of analysis:

B1) Identify the time delay between the ST, the HTT, and the DTT by focusing on the time codes for the onset of the key concept words identified in analysis A1.

B2) Identify the time delay between the ST, the HTT, and the DTT by focusing on the time codes for the onset of the nouns identified in analysis A2.

The SignStream software provided a very precise measurement of the duration of every entry. This was achieved by identifying the onset and termination points for every entry based on the video frame of occurrence. These onset and termination points are fairly obvious in signed languages based on hand configuration and general locations of the hand(s) within each video frame. The hand configuration and location in each frame can be determined to be either relevant to the targeted sign or transitional. The first and last frames which were visually relevant to each sign were identified for every sign in both the HTT and the DTT. This allowed a very precise accounting of the time between the onset and conclusion of utterances.

A similar process was used for the spoken language portion of the videodata, although based on sound rather than image. The regular flow of speech provides less obvious transitions between words such that the frame of termination for one spoken word might also be the frame of onset for the next spoken word. Onset and termination for each word was determined by using the frames required to perceive the word correctly. This meant that generally the onset times in the Source Text were inclusive of the beginning of a word while the termination times might slightly cut off the complete pronunciation of that word. Therefore the onset times were determined as the consistently accurate point for comparison between the Source Text, the Hearing Target Text and the Deaf Target Text. Onset times of spoken utterances which were compared with the onset times of the HTT to determine the processing time for the HTT. Onset times of the HTT utterances were compared with the

onset times of the DTT to determine the processing time for the DTT. Finally, onset times of the source text and the DTT were compared to determine the overall processing time of the interpreting team.

Analysis B1 – Processing Time for Key Concepts

A total of 157 key concept words were identified in the source text. 149 key concept words were present in the Hearing Target Text (95 %); 148 key concept words in the Deaf Target Text (94%); 148 of the key concept words were represented in both texts (94%).

The time durations to generate the HTT and the DTT were analyzed in three comparisons (ST to HTT, HTT to DTT, and the overall time of ST to DTT). The average numbers indicate that the Hearing interpreter's Target Text is produced in just under five seconds. From this message, the Deaf interpreter's Target Text is completed with just over one additional second. This provides an overall average time of 6.2 seconds from the production of the Source Text to the production of the Deaf interpreter's Target Text. This means that about 80% of the processing time is generated by the Hearing interpreter while the Deaf interpreter accounts for an addition of only about 20% of the overall processing time. This is logical given that the Hearing interpreter is faced with the task of regenerating a message between two languages while the Deaf interpreter is faced with the task of improving a message within a single language. Within the data set there are instances where the Deaf interpreter predicted elements presented in the HTT, and where the Hearing interpreter predicted elements presented in the Source Text.

"Key Concept" Processing Time Comparison Categories	Average # of Frames	Average # of Seconds	Minimum # of Seconds	Maximum # of Seconds
From Source Text to Hearing Target Text (ST -> HTT)	148 Frames	4.94 Seconds	0.97 Seconds	12.60 Seconds
From Hearing Target Text to Deaf Target Text (ST -> HTT)	38 Frames	1.26 Seconds	-0.20 Seconds	7.30 Seconds
From Source Text to Deaf Target Text (ST -> DTT)	186 Frames	6.20 Seconds	2.10 Seconds	14.37 Seconds

Figure 4.3 –Results of Processing Time Comparisons: "Key Concepts"

Analysis B2 – Processing Time for Nouns

A total of 258 nouns were identified in the source text. 162 of these nouns were also present in the Hearing Target Text (62.8 %). 163 of these nouns were present in the Deaf Target Text (63.2%). The previous section explains how the accuracy ratings are actually higher than these numbers suggest, but that is not the focus of this portion of the analysis. A comparison of the Hearing and Deaf Target Texts indicated that 160 of the nouns were represented in both texts (98.8%)

The time durations to generate the HTT and the DTT were analyzed in three comparisons (ST to HTT, HTT to DTT, and the overall time of ST to DTT). The average numbers indicate that the Hearing interpreter's Target Text is produced in just under five seconds. From this message, the Deaf interpreter's Target Text is produced with just over one additional second. This provides an overall average time of 5.48 seconds from the production of the Source Text to the production of the Deaf interpreter's Target Text. This means that about 80% of the processing time is generated by the Hearing interpreter while the Deaf interpreter accounts for only about 20% of the overall processing time. This is logical given that the Hearing interpreter is faced with the task of moving a message between two languages while the Deaf interpreter is faced with the task of improving a message in a single language.

The initial statistics for minimum number of seconds and for maximum number of seconds both indicated some extreme numbers for the Deaf interpreter's Target Text. The minimum number showed an anticipation of 21.33 seconds while the maximum showed an extremely long delay of nearly 44.90 seconds. Both instances are related to two occurrences of the exact same concept, represented in the DTT as "#RID". In the DTT example of

21 seconds of anticipation, the Source Text word was also "RID" but the DTT had previously mentioned it when the source text referent was a pronoun[22]. Since the interpreting event took place at an RID conference, it was highly likely that the concept of RID might be directly referenced or pronominalized multiple times in the ST, the HTT, and/or the DTT. In the DTT example of extreme (44.90 seconds) delay, the ST word was "associations" which the HTT generated as separate hyponymic productions of "#AVLIC" and "#RID". In this instance the DTT used "TWO-OF-US" which specifically referred to two people, one from each association and thus was not counted as an equivalent of the ST word "associations". An extra instance of "#RID" occurred in the DTT much later.[23] Removing these two instances from consideration in the analysis of processing time generates the following numbers.

"Noun" Processing Time Comparison Categories	Average # of Frames	Average # of Seconds	Minimum # of Seconds	Maximum # of Seconds
From Source Text to Hearing Target Text (ST -> HTT)	148 Frames	4.94 Seconds	-4.63 Seconds	11.30 Seconds
From Hearing Target Text to Deaf Target Text (HTT -> DTT)	35 Frames	1.16 Seconds	-4.17 Seconds	5.70 Seconds
From Source Text to Deaf Target Text (ST -> DTT)	183 Frames	6.10 Seconds	-3.20 Seconds	12.57 Seconds

Figure 4.4 –Results of Processing Time Comparisons: "Nouns"

What should stand out in this table is the fact that both the Hearing interpreter's Target Text and the Deaf interpreter's Target Text were able to anticipate the Source Text message. Not only was the Deaf interpreter able to anticipate the HTT, but she was also able to anticipate the ST, before the HTT was generated. These anticipations were rare but they demonstrate a key component to interpreting - the ability to make predictions about the Source Text are an essential part of successful interpretations.

[22] The original Source Text referent was the phrase "our sister organization." which had been generated as a comparison of AVLIC and RID in the Deaf interpreter's Target Text. Thus the DTT instance of "#RID" was not tied to a noun in the ST and was free to be associated with the next instance in the ST, which occurred over 21 seconds later.

[23] In this delayed instant the DTT generated "#RID" as part of providing a specific subject where the ST sentence had used a pronoun. The ST example was "… yours are the really nice succinct pamphlet form of document…".

How Much Time is Required for Relayed Interpreting?

Between the two analyses (mapping of key concept and mapping of nouns) the following information was made clear. 1) The Hearing interpreter's work generally takes 80% of the team's combined processing time while the Deaf interpreter's work generally was completed with only an additional 20% of the processing time. 2) The average processing time is around six seconds with the Hearing interpreter using just under five of those seconds and the Deaf interpreter completing the interpretation with just over one second additional to that time. 3) Both the Hearing and the Deaf interpreter will make predictions about the message being interpreted. 4) The maximum time for processing through both team members never exceeded fifteen seconds and through the making of predictions it was able to anticipate the source text by more than three seconds.

Results of Processing – Syntactic, Morphological & Grammatical Comparisons

This level of analysis was conducted based on the transcripts of the Hearing Target Text and of the Deaf Target Text.

C1) Compare ten complete sample utterances (HTT, DTT) and identify how the DTT syntax is different from the HTT.

C2) Compare the content of each utterance (HTT, DTT) and identify instances where the DTT word choices and word orders are different from the HTT.

C3) Compare the content of each utterance (HTT, DTT) and identify relative frequencies of the use of specific morphological elements (the use of Classifiers, Fingerspelling, Indexing and Pronominalization) between the two interpretations.

C4) Compare of the use of grammatical non-manual signals (eyebrow and head postures) between the HTT and DTT.

Analysis C1 sampled ten utterances from the transcripts. The HTT and DTT each had 48 utterances. Sampling ten sentences from the entire database allowed for a reasonable presentation of the data without overwhelming the reader. The method of sampling began by identifying the utterances at 900 frames (30 seconds into the text) and at 1800 frame increments (60 seconds each) through the remainder of the text. The portions of the HTT and DTT which were compared were bounded by any two PAUSES, either in the HTT or the DTT. The resulting ten

utterances were then compared to determine syntactic similarities and differences between the HTT and the DTT.

Analysis C2 was somewhat similar to the analysis in A1 and A2 (all of which focus on lexical items), but used a very different approach. The C2 analysis looked only at the ASL signs (not English words or semantic concepts) and identified each instance of identical or non-identical sign choices between the HTT and the DTT.

Analysis C3 was based on counting instances directly from the transcript. All instances of fingerspelling are identified in the transcript with the use of the pound symbol (#). All instances of classifiers are identified in the transcript with the letters "cl-" followed by a description of the classifier's meaning. All instances of indexing were identified with the same gloss (INDEX). All instances of pronominalizations were identified as either first person or other person pronouns by use of the numbers one (1) or two (2).[24]

Analysis C4 was also based on counting the instances directly from the transcript. Each instance of eyebrow position and head posture was identified in the transcript. For each interpreter the eyebrows were clearly visible and it was possible to determine if they were positioned above or below their "normal" positions in any given frame. Once this difference was noted then the movement could be determined to be related to grammatical use.[25] The notation of head postures was parallel to the notation of eyebrows.

Anticipatory and Residual Holds

In the interaction between the two interpreters there was a repeating pattern of "bursts" of information where information from the Hearing interpreter would be produced in a cohesive unit or "chunk" followed by the Deaf

[24] For example, a first-person indicative pronoun was encoded as 1PP. An other-person possessive plural pronoun was encoded as 2PP-PL -POSS. ASL does not generate structurally different forms between second-person pronouns and third-person pronouns but rather distinguishes second-person references from third-person references by use of eye-gaze. Since second-person references and third-person references are produced identically they can be transcribed identically.

[25] Raised eyebrows fell into five categories (topicalizations, yes/no questions, rhetorical questions, conditionals, or "up" meaning that no grammatical relevance could be determined) while furrowed eyebrows fell into two categories (wh-questions or "frrw" meaning that no grammatical relevance could be determined). Only those instances with grammatical relevance would used for this analysis.

interpreter producing an equivalent "chunk" of information.[26] One phenomenon which co-occurred with this interaction between the two interpreters was the "holding" of handshapes related to either the first or last sign in a "chunk".

Residual Holds occurred when the handshape used in a sign lingered in signing space after the sign itself had been completed. Typically the Hearing interpreter would generate residual holds while watching the Deaf interpreter's work and likewise the Deaf interpreter would generate residual holds while watching the Hearing interpreter's work. Residual holds are different from PAUSEs. A PAUSE (bringing both hands out of signing space) signifies that no message is being generated in ASL. A residual hold indicates that a message is being generated, but is momentarily halted.

Anticipatory Holds were only produced by the Hearing interpreter. Typically the Hearing interpreter was preparing to generate the next part of the interpretation but was waiting for the Deaf interpreter to re-establish eye-contact with the Hearing interpreter. The use of eye gaze was completely integrated into the transition of Anticipatory Holds into signs. In other words, the Hearing interpreter never transitioned from an anticipatory hold into sign production until there was eye contact from the Deaf interpreter.

Analysis C1 – Comparisons of Syntax

The entire transcript (including the source text) is composed of 18,015 frames (just over ten minutes) of video data. Ten sample utterances were selected for presentation in this section as a way of providing examples of the similarities and differences of the HTT and DTT without overwhelming the reader by providing all 48 utterances of the HTT and DTT. The samples represent a total of close to two minutes of the overall data set: 3,723 frames (124.1 seconds) of the Source Text, 3,340 frames (111.3 seconds) of the Hearing Target Text, and 3,438 frames (114.6 seconds) of the Deaf Target Text.

[26] Generally these "chunks" of information would have an overlap such that the Deaf interpreter would begin producing a "chunk" of information before the Hearing interpreter was finished generating it. Likewise the Hearing interpreter would occasionally begin the next "chunk" before the Deaf interpreter was finished, but only upon receiving direct eye gaze from the Deaf interpreter.

Sampling was accomplished by identifying the Target Text Utterances being produced during the 900th frame (30 seconds) and then at nine additional points at increments of 1,800 frames (60 seconds) from that point forward. Target Text segments were limited to those elements which were bounded by any combination of two PAUSEs or one PAUSE plus a residual holds from either the HTT or the DTT. The relevant portions of the Source text were also identified. Scatter plots for each segment allow a comparison of time lines for the ST, HTT, and DTT, and visually reveal the significant gaps for each text where no linguistic activity occurred. The GLOSSes for these ten transcript samples are identified below[27], along with a brief analysis of how the Deaf Target Text differed from the Hearing Target Text.

Transcript Key:

ST = Source Text

HTT = Hearing Target Text

DTT = Deaf Target Text

= ASL signs which are based on ASL fingerspelling

hyphenation is used to indicate that the hyphenated words are representing a single ASL vocabulary item

1PP = First Person Pronoun

2PP = Other Person Pronoun

PL = Pluralized pronoun

POSS = Possessive pronoun

INDEX-l = manual reference to the left of the signer's midline

INDEX-r = manual reference to the right of the signer's midline

CL = use of ASL Classifier components which identify various qualities of objects and actions

+ = rapid repetition of a sign (each instance indicates a full repetition)

Items that are **in bold and underlined** were produced on the non-dominant hand.

[27] The transcript portions presented here only identify the lexical components and do not reveal grammatical or affective information. Names have been changed to protect personal privacy.

Frame numbers are identified as relevant to the entire data set and are not limited uniquely to the ST, HTT, or DTT. Time durations are identified in seconds. Each second of data is composed of thirty frames. Onset frames are the first frame in which a spoken or signed word is recognizably generated. End frames are the last frame of the final item's generation.

The scatter plots for each segment show the relative generations of each text (ST, HTT, DTT). The reader can see which texts were being simultaneously produced by placing a vertical line anywhere along the scatter plot. Solid lines indicate physical production of portions of the text across time (left to right). Blank spaces indicate pauses, anticipatory holds, and / or residual holds between portions of the text. The total duration of each segment is identified below each scatter plot.

Sample #1 – Texts Surrounding Frame 900 (30 seconds into the data set)

ST: AVLIC The Association of Visual Language Interpreters of Canada our international sister

Onset Frame #0594 *End Frame #0748* *Duration = 154 frames (5.1 seconds)*

HTT: #AVLIC ASSOCIATION #OF VISUAL LANGUAGE INTERPRET THAT 1PP-PL-POSS SISTER ORGANIZATION CONNECTED

Onset Frame #0734 *End Frame #1026* *Duration = 292 frames (9.7 seconds)*

DTT: #A #V #L #I #C INDEX ASSOCIATION #OF SEE PERCEIVE LANGUAGE INTERPRET #OF CANADA #AVLIC THAT 1PP-PL-POSS ORGANIZATION #RID SISTER INDEX-l INDEX-r #AVLIC THAT CONNECTED

Onset Frame #0778 *End Frame #1101* *Duration = 323 frames (10.8 seconds)*

NOTES: The DTT recasts the name of the organization as initials, sets it in signing space with the INDEX, changes the two-handed HTT sign VISUAL to two one-handed homonyms, completes the name of the organization (while the Hearing interpreter nods confirmation) and then restates the acronym. The concept of "1PP-PL-POSS ORGANIZATION" is expanded to specifically mean RID. Contrasting signing space is then more fully accessed by establishing RID in contrasting space to where AVLIC was established. Finally these two signing spaces are referenced in the last sign of this utterance, "CONNECTED"

Figure 4.5 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #1

Total Duration of Segment #1 *(from frame #0594 to # 1101)* 514 frames (17.1 seconds)

Processing Delay *(from the end of ST to the end of DTT)* 347 frames (11.6 seconds)

Sample #2 – Texts Surrounding Frame 2,700 (1 minute, 30 seconds into the data set)

ST: I've had the honor of working with Bob Doe wherever you are Bob over the last couple of years talking about different areas of possible cooperation or pursuits between the two associations

Onset Frame #2445 *End Frame #2787* *Duration = 342 frames (11.4 seconds)*

HTT: UP-TO-NOW SEVERAL YEAR WORK WITH #BOB #DOE #RID #AVLIC HOW ACTIVE TOGETHER CONNECTED HOW

Onset Frame #2633 *End Frame #2963* *Duration = 330 frames (11.0 seconds)*

DTT: UP-TO-NOW SEVERAL YEAR TWO-OF-US #BOBDOE 1PP WORK WITH WORK CONNECTED #AVLIC THAT CAN INDEX CONNECTED WORK WITH HOW

Onset Frame #2662 *End Frame #2971* *Duration = 309 frames (10.3 seconds)*

NOTES: The DTT restructures the sentences so that the subjects of the verb "WORK" are presented in subject position (prior to the verb) The remainder of the DTT adds the sign WITH (together) to provide further clarification of the concepts being expressed. The use of the Rhetorical Question in the HTT is preserved in the DTT.

Figure 4.6 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #2

Total Duration of Segment #2 *(from frame #2445 to # 2971)* 526 frames (17.5 seconds)

Processing Delay (from the end of ST to the end of DTT) 184 frames (6.1 seconds)

Sample #3 – Texts Surrounding Frame 4,500 (2 minutes, 30 seconds into the data set)

ST: I now present officially to RID our uh documents

Onset Frame #4201 End Frame #4335 Duration = 134 frames 4.5 seconds)

HTT: 1PP-POSS PAPER LIST WILL #OFFICIALLY CL-give-thick-object UNTO #RID

Onset Frame #4355 End Frame #4533 Duration = 178 frames (5.9 seconds)

DTT: 1PP-PL-POSS INDEX PAPER LIST WILL WHAT-HUH #OFFCLY WILL #RID 1PP PAPER CL-THICK 1PP CL-HAND-OVER

Onset Frame #4377 End Frame #4608 Duration = 231 frames (7.7 seconds)

NOTES: DTT indexes the topic of this utterance. The DTT makes greater use of spatial agreement by establishing the indirect object (#RID), identifying the object (1PP), then restating the direction object (PAPER) before generating a classifier predicate. The final element is repetition of the subject and a modified version of the previous predicate classifier, indicating the main point of the original utterance (transferring the documents).

Figure 4.7 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #3

Total Duration of Segment #3 *(from frame #4201 to # 4608)*	407 frames (13.6 seconds)
Processing Delay (from the end of ST to the end of DTT)	273 frames (9.1 seconds)

Sample #4 – Texts Surrounding Frame 6,300 (3 minutes, 30 seconds into the data set)

ST: Chris Doe from Toronto and our adopted Canuk uh Pat Roe in the middle there

Onset Frame #6124 *End Frame #6380* *Duration = 256 frames (8.5 seconds)*

HTT: 2ND-OF-TWO #CHRIS #DOE FROM TORONTO #PAT #ROE TRUE CANADA AGENT NOT BUT 1PP-PL ADOPT 2PP

Onset Frame #6171 *End Frame #6528* *Duration = 357 frames (11.9 seconds)*

DTT: 2ND-OF-TWO #CHRIS #DOE FROM(1hand) TORONTO #TORONTO INDEX #PAT #ROE INDEX NOT CANADA AGENT NOT #BUT INDEX 1PP ADOPT #ADOPT COME-ON

Onset Frame #6197 *End Frame #6590* *Duration = 393 frames (13.1 seconds)*

NOTES: DTT adds sandwiching by fingerspelling #TORONTO and #ADOPT. Indexing is added, which reveals the physical location of the people in the room. Negation (NOT) is repeated for emphasis. BUT is substituted with #BUT.

Figure 4.8 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #4

Total Duration of Segment #4 *(from frame #6124 to # 6590)* 466 frames (15.5 seconds)

Processing Delay (from the end of ST to the end of DTT) 210 frames (7.0 seconds)

Sample #5 – Texts Surrounding Frame 8,100 (4 minutes, 30 seconds into the data set)

ST: we have a written test of knowledge and we have a test of interpretation which is a performance portion and so I'd want to present our document but talk about our evaluation just in terms of information sharing

Onset Frame #7776 End Frame #8050 Duration = 274 frames 9.1 seconds)

HTT: PROF-FIELD-1 PROF-FIELD-2 WRITE TEST 2-PP-POSS KNOW++++++ 2ND-OF-TWO ACTION EXPRESS-SL INTERPRET PROF-FIELD-1 PROF-FIELD-2 THAT CL-HAND-OVER INDEX-PL FOR 2-PP-POSS INFORMATION+

Onset Frame #7877 End Frame #8243 Duration = 366 frames (12.2 seconds)

DTT: PROF-FIELD-1 PROF-FIELD-2 1ST-OF-ONE WRITTEN TEST WRITE CL-DOCUMENT UNDERSTAND KNOW+ 2PP-POSS 2ND-OF-TWO EXPRESS-SL INTERPRET #PERFORMANCE TWO-OF-TWO 1PP HAVE CL-HAND-OVER #RID CL-HAND-OVER **2PP-POSS** **KNOW** READ AHA **IDEA**

Onset Frame #7924 End Frame #8297 Duration = 373 frames (12.4 seconds)

NOTES: DTT clarifies the concept of "written test of knowledge" by using sign WRITTEN (indicating text on a page) and expanding "knowledge" to "UNDERSTAND KNOW+". The DTT emphasizes the fact that there are two portions of the written test with "1ST-OF-ONE", "2ND-OF-TWO" and "TWO-OF-TWO". Subject deletion in the HTT is represented with restatement of the subject (1PP) in the DTT. The concept of "information sharing" is more idiomatically restated in the DTT as "READ **KNOW** **IDEA** AHA".

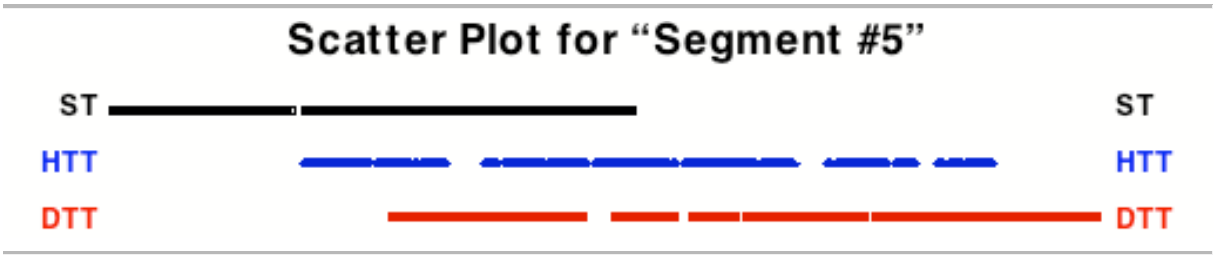

Figure 4.9 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #5

Total Duration of Segment #5 *(from frame #7776 to # 8297)* 521 frames (17.4 seconds)

Processing Delay (from the end of ST to the end of DTT) 247 frames (8.2 seconds)

Sample #6 – Texts Surrounding Frame 9,900 (5 minutes, 30 seconds into the data set)

ST: And just to give you a flavor of Canada tomorrow for your breakfast some maple syrup to go along with it

Onset Frame #9445 *End Frame #9617* *Duration = 172 frames (5.7 seconds)*

HTT: 2ND-OF-TWO #MAPLE SAUCE PSHAW TOMORROW MORNING SYRUP TASTE FEEL WANT GO-TO CANADA

Onset Frame #9614 *End Frame #9851* *Duration = 237 frames (7.9 seconds)*

DTT: 2ND-OF-TWO #MAPLESYRUP SAUCE TOMORROW MORNING #GO EAT CL-POUR-ALL-OVER TASTE DELICIOUS CANADA INDEX EXCITE #GO CAN

Onset Frame #9665 *End Frame #9925* *Duration = 260 frames (8.7 seconds)*

NOTES: DTT recovers concept of "breakfast" by expanding the HTT with "#GO EAT", clarifies the relationship to the syrup with "CL-POUR-ALL-OVER", and expands the concept of "TASTE" to being a positive potential motivation with "DELICIOUS". The DTT restructures "CANADA" so that it is established in space prior to the spatial reference of the verb "#GO". A final modal "CAN" is added for emphasis as a positive assertion.

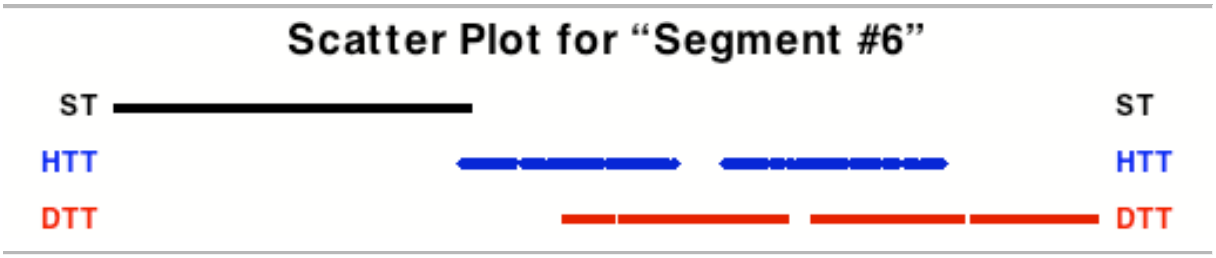

Figure 4.10 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #6

Total Duration of Segment #6 *(from frame #9445 to # 9925)* 480 frames (16.0 seconds)

Processing Delay (from the end of ST to the end of DTT) 308 frames (10.3 seconds)

Sample #7 – Texts Surrounding Frame 11,700 (6 minutes, 30 seconds into the data set)

ST: those people who don't have either ASL or LSQ are fascinated to see that kind of work in process

Onset Frame #11262 End Frame #11431 Duration = 169 frames (5.6 seconds)

HTT: THAT BROAD COME-HERE INDEX THERE-ABOUTS DONT-KNOW #ASL DONT-KNOW #LSQ WATCH FASCINATED

Onset Frame #11295 End Frame #11553 Duration = 258 frames (8.6 seconds)

DTT: COME-ON ANY COME-ON PEOPLE 2PP-PL DONT-KNOW #ASL DONT-KNOW **#LSQ** SPECTATE SPECTATE SPECTATE FASCINATED FASCINATED

Onset Frame #11372 End Frame #11638 Duration = 266 frames (8.9 seconds)

NOTES: The initial portion of the DTT ("COME-ON ANY COME-ON") is emphasizing previously stated concepts that the #AVLIC conferences are open to anyone with an interest. The DTT then makes use of non-dominant hand to show contrasting space for each language (#ASL and #LSQ). This contrasting space is then used to clarify that there are two different things for people to look at and be fascinated by.

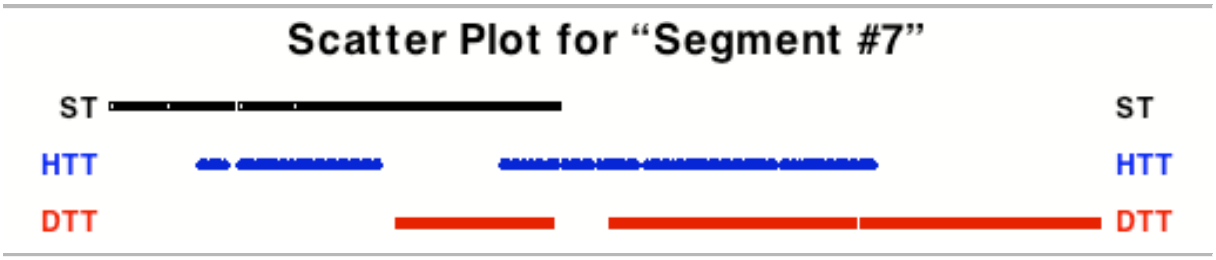

Figure 4.11 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #7

Total Duration of Segment #7 *(from frame #11262 to # 11638)*	376 frames (12.5 seconds)
Processing Delay (from the end of ST to the end of DTT)	207 frames (6.9 seconds)

Sample #8 – Texts Surrounding Frame 13,500 (7 minutes, 30 seconds into the data set)

ST: I want to say We would like to welcome you to Montreal and say bienvenue Now we know that many of you already know how to say bienvenue Not because you've had some French

Onset Frame #13103 *End Frame #13471* *Duration = 368 frames (12.3 seconds)*

HTT: 1PP-PL WANT INVITE 2PP-PL FRENCH WORD #BIENVENUE #E 2PP-PL KNOW THAT WORD FOR 2PP THINK CAN SPEECH-READ MM-NO FRENCH WORD #BIENVENUE #E #U CUT-OFF #E

Onset Frame #13281 *End Frame #13696* *Duration = 415 frames (13.8 seconds)*

DTT: 1PP WANT INVITE **THINK-SELF** **FRENCH** **WORD** WHAT-HUH #BIENVENUE 2PP-PL KNOW THAT-ONE WORD #BIENVENUE CAN(1hand) SPEECH-READ #BIENVENUE #BIENVENUE **SAY** KNOW #E DELETE INDEX

Onset Frame #13323 *End Frame #13735* *Duration = 412 frames (13.7 seconds)*

NOTES: The DTT substitution of "THINK-SELF" provides a more cultural/idiomatic sense of the open invitation. The remainder of the text requires knowledge that a well-known interpreter with RID has a last name of "Bienvenu". The HTT provides a cultural adjustment which transitions "how to say" to "CAN SPEECH-READ", which the DTT keeps, but then manages to re-include the notion of "SAY". The HTT sign "CUT-OFF" is substituted in the DTT with the homonym "DELETE".

Figure 4.12 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #8

Total Duration of Segment #8 *(from frame #13103 to # 13735)*	632 frames (21.1 seconds)
Processing Delay (from the end of ST to the end of DTT)	264 frames (8.8 seconds)

Sample #9 – Texts Surrounding Frame 15,300 (8 minutes, 30 seconds into the data set)

ST: But our one and two denomination are actually in coin and our one dollar coin has a picture of a loon on it and we call it we call it the loony So in terms of my last official duty here I need to donate a loony to the I don't know where the bucket is to the Florida goose

Onset Frame #14851 End Frame #15487 Duration = 636 frames (21.2 seconds)

HTT: BUT THAT FIVE-DOLLAR MINIMUM PAPER INDEX ONE-DOLLAR INDEX TWO-DOLLAR CL-COIN ONE-DOLLAR INDEX PICTURE BIRD #LOON 1PP-PL CREATE NAME #LOONY ONE #LOONY INDEX WILL CL-Container FOR #FLA

Onset Frame #14957 End Frame #15547 Duration = 590 frames (19.7 seconds)

DTT: INDEX THAT FIVE-DOLLAR MINIMUM PAPER **ONE-DOLLAR** INDEX TWO-DOLLAR #COINS **CL-COIN** CL-COIN **ONE-DOLLAR** **CL-COIN** INDEX PICTURE(1hand) INDEX BIRD #LOONI KNOW #LOON INDEX 1PP-PL NAME INDEX **CL-COIN** NAME(1hand) #LOONY #LOONIE INDEX ONE INDEX #LOONIE INDEX **CL-DROP-COIN** 1PP FOR WHAT-HUH(1hand) #FLA

Onset Frame #14992 End Frame #15575 Duration = 583 frames (19.4 seconds)

NOTES: The DTT makes significant use of contrasting signing space by using both dominant and non-dominant hands. Sandwiching (#COINS) provides emphasis. The DTT also adjusts the HTT presentation of #LOONY to #LOONIE. A statement in the HTT is recast as a rhetorical question in the DTT: "FOR WHAT-HUH(1hand) #FLA".

Figure 4.13 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #9

Total Duration of Segment #9 *(from frame #14851 to # 15575)* 724 frames (24.1 seconds)

Processing Delay (from the end of ST to the end of DTT) 88 frames (2.9 seconds)

Sample #10 – Texts Surrounding Frame 17,100 (9 minutes, 30 seconds into the data set)

ST: I do want to wish you luck with the remainder of your conference that we call conference convention

Onset Frame #16569 End Frame #16724 Duration = 155 frames (5.2 seconds)

HTT: FROM-NOW-FORWARD 2PP-POSS MEETING THUMB-UP WORD 1PP-PL NAME #CONFERENCE 2PP-PL NAME #CONVENTION NO-MATTER GOOD THUMB-UP

Onset Frame #16661 End Frame #16952 Duration = 291 frames (9.7 seconds)

DTT: FROM-NOW-FORWARD 2PP-POSS MEETING THUMB-UP GOOD #LUCK FROM-NOW-FORWARD 1PP-PL NAME #CONFERENCE 2PP-PL NAME #CONVENTION NO-MATTER GOOD #LUCK

Onset Frame #16700 End Frame #16984 Duration = 284 frames (9.5 seconds)

NOTES: "GOOD #LUCK FROM-NOW-FORWARD" is a more idiomatic restatement of the HTT. Remainder of utterance is identical, except final lexical item which repeats the substitution of the HTT's "THUMB-UP" with "#LUCK".

Overall the Deaf Interpreter made frequent use of restructuring (including the addition of indexing and/or positioning objects before verbs) when spatial agreement was relevant. Other common modifications included 1) sandwiching (fingerspelling adjacent to the production of the related sign), 2) the repetition/clarification of pronouns, 3) lexical substitution with homonyms, and 4) restatements using more idiomatic phrasing.

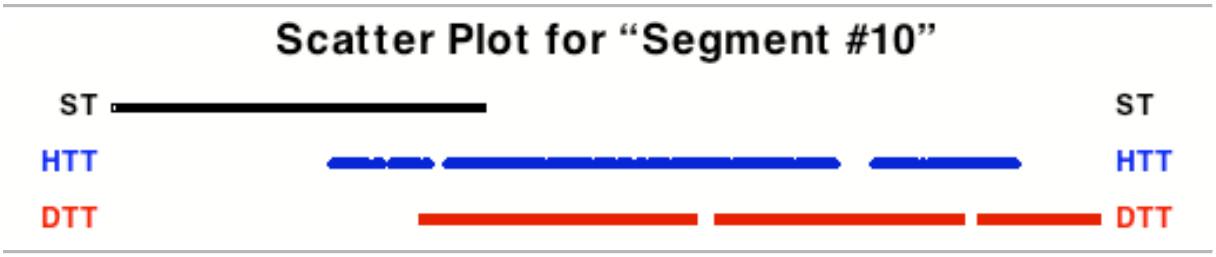

Figure 4.14 –Scatter Plot Comparing Occurrence of ST, HTT & DTT for Segment #10

Total Duration of Segment #10 *(from frame #16569 to # 16984)* 415 frames (13.8 seconds)

Processing Delay (from the end of ST to the end of DTT) 260 frames (8.7 seconds)

Analysis C2 – Comparisons of Word Use

The HTT transcript contains 740 entries for dominant hand productions and 112 entries for non-dominant hand productions. These productions include 105 residual holds, 20 anticipatory holds, 48 PAUSES, and 12 unspecific movements, or incomplete false starts of ASL signs, which were identified as "flutters". The remainder of these productions were identified as ASL lexical items and totaled 667 entries. The entire duration of the HTT was 16,709 frames (or 557 seconds). Of this data set the Hearing interpreter had his hands in active signing space for 13,122 frames (437.4 seconds) or 78.5% of the time. The remaining time (119.6 seconds or 21.5%) his hands were not in active signing space, either in a position transcribed as PAUSE[28] or manipulating notes or other objects. PAUSEs were used to identify the boundaries of segments in the transcript which were identified as "utterances". A single utterance consisted of all of the dominant and non-dominant productions between PAUSEs. The HTT consisted of 48 utterances. These utterances had a minimum of zero lexical items (this utterance consisted of a "flutter" between PAUSEs) and a maximum of 44 lexical items. The average was 12.9 lexical items per utterance.[29]

The DTT transcript contains 834 entries for dominant hand productions and 181 entries for non-dominant hand productions. These productions include 98 residual holds, zero anticipatory holds, 48 PAUSEs, 6 "flutters", and 42 manual posturings[30]. The remainder of these productions were identified as ASL lexical items and totaled 821 entries. The entire duration of the DTT was 16,725 frames (or 557.5 seconds). Of this data set the Deaf interpreter had her hands in active signing space for 13,704 frames (456.8 seconds) or 82% of the time. The remaining time (100.7 seconds or 18%) her hands were not in active signing space, generally in a position transcribed as PAUSE. PAUSEs were used to identify the boundaries of segments in the transcript which were identified as "utterances". The DTT consisted of 48 utterances. These utterances had a minimum of one lexical item ("THANKYOU") and a maximum of 73 lexical items. The average was 16.9 lexical items per utterance.[31]

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[28] PAUSE consists of both hands in contact with each other and resting on either the abdomen or lap of the interpreter.
[29] The average signing rate of the HTT utterances was 85 signs per minute.
[30] All instances of manual posturing were non-dominant hand productions. Such things as placing the hand behind the back or on the hip were counted as manual posturing.
[31] The average signing rate of the DTT utterances was 106.5 signs per minute.

Dominant Hand & Non-Dominant Hand Productions	HTT **Dom. Hand Productions**	HTT **Non Dom. Productions**	DTT **Dom. Hand Productions**	DTT **Non Dom. Productions**
Manual Posturing	0	0	0	42
Anticipatory Holds	19	1	0	0
Residual Holds	63	42	34	64
"flutters"	12	0	6	0
PAUSEs	48	*	48	*
Indexing (pointing)	18	43	43	7
Pronouns	49	0	84	3
Classifiers	18	5	24	12
Lexicalized Fingerspelling	80	0	116	0
ASL Lexemes	433	21	479	53
Total Productions	**740**	**112**	**834**	**181**

*A PAUSE requires contact between Dominant and Non-Dominant hands.
PAUSEs are only counted in the Dominant Hand Productions category.

Figure 4.15 –Dominant Hand and Non-Dominant Hand Productions

For comparison of the HTT and the DTT both transcripts were organized into 36 sections. The boundaries for these sections were every instant where BOTH the HTT concepts and the DTT concepts began and ended with PAUSEs.[32] Although many phrases were repeated verbatim from the HTT to the DTT, there were zero complete utterances repeated verbatim between the HTT and the DTT.

Comparison of the DTT's 821 lexical items against the 667 lexical items found in the HTT resulted in five categories which accounted for all of the DTT lexical items: 1) Identical sign productions between the HTT and the DTT, 2) Additional sign productions not present in the HTT utterance 3) Substitutions of sign productions which were present in the HTT utterance, 4) Repetitions of sign productions in the DTT which were not repeated in the HTT, and Self-Initiated sign productions which were not present in the HTT. The chart below identifies the number and percentage of each category.

[32] The plurality of the sections (17) were composed of one HTT utterance to one DTT utterance with an additional 9 sections composed of two HTT utterances to one DTT utterance in a single section. The remaining ten sections had a low of zero to one HTT/DTT ratio (the Deaf interpreter initiated her own feedback to the presenter passing her on the stage) and a high of three HTT utterances to one continuous DTT.

DTT Lexical Production Categories As Compared with the HTT	Deaf Interpreter **821 Productions**
Identical Reproductions	381 (46.4%)
Additions	249 (30.3%)
Substitutions	106 (12.9%)
Repetitions	76 (09.3%)
False Starts*	06 (00.7%)
Self Initiations	03 (00.4%)
Total ASL Productions	**821 (100%)**

*False Starts were complete productions of ASL signs which were later corrected in the message. An additional six incomplete ASL productions were identified as "flutters" and were not counted in the "Lexical Choice" analysis.

Figure 4.16 –Results of DTT Lexical Choice Analysis

In the category of "Additions" three sub-categories were found: a) Additions made for reasons of Grammatical Adjustment (which largely consisted of indices, pronouns, and words paired with rhetorical questioning structures), b) Additions made for bringing greater clarity or specificity to the message, which are noted as "expansions", and c) Other Additions which did not fit clearly in either of the other two categories (which included false starts and other anomalies). The chart below identifies the number and percentages associated with each sub-category of the DTT Additions.

DTT Addition Sub-Categories As Compared with the HTT	Deaf Interpreter **249 Additions**
Grammatical Adjustments	121 (48.6%)
Expansions	104 (42.8%)
Other Additions	24 (09.6%)
ASL Productions Subtotals	**249 (100%)**

Figure 4.17 –Results of DTT Additions Analysis

The relative brevity of the HTT appears to be due to a deliberate effort to represent the key concepts and supporting details as efficiently as possible. The DTT provides greater elaboration and clarification through repetitions, grammatical adjustments and expansions.

Analysis C3 – Comparisons of Specific Morphological Use

C3) Compare the content of each utterance (HTT, DTT) and identify relative frequencies of the use of specific morphological elements (use of Fingerspelling, Pronominalizations, Classifiers, and Indexing) between the two interpretations.

The DTT transcript indicates an overall greater use of ASL Fingerspelling, ASL Pronouns, and ASL Classifiers while the HTT indicates an overall greater use of indexing. Since the comparisons are between only one Hearing and one Deaf interpreter, these differences may be more indicative of stylistic differences rather than a significant processing difference between Hearing and Deaf interpreters. The instances and percentages are identified in Table 6.8, below.

ASL Productions Dominant & Non-Dominant Hands Hearing & Deaf Interpreters	Hearing Interpreter **852 Productions**	Deaf Interpreter **1,015 Productions**	**Subtotals 1867 Productions**
ASL Fingerspelling	80 (09.4%)	116 (11.4%)	**196 (10.5%)**
ASL Pronouns	49 (05.8%)	87 (08.6%)	**136 (07.3%)**
ASL Classifiers	23 (02.7%)	36 (03.5%)	**59 (03.2%)**
ASL Indexing (Deictics)	61 (07.2%)	50 (04.9%)	**111 (05.9%)**
ASL Productions Subtotals	**213 (25.0%)**	**289 (28.5%)**	**502 (26.9%)**

Figure 4.18 –Results of ASL Morphology Analysis

Analysis C4 – Comparisons of Use of Non-Manuals

C4) Compare the use of non-manual signals (eyebrow and head postures) between the HTT and DTT.

The HTT transcript contains 124 entries related to meaningful head posture and 100 entries related to grammatical eyebrow positions (including both grammatical[33] and non-grammatical instances). The DTT contains 119 entries related to meaningful head posture and 110 entries related to eyebrow positions. The distribution of instances between the Hearing and the Deaf interpreter indicate fairly comparable results with the following exceptions. 1) the Deaf interpreter used twice as many rhetorical constructions, 2) the Hearing

[33] The grammatical instances which were noted were for 1) topicalization, 2) yes/no questions, 3) rhetorical questions, 4) conditionals, and 5) wh-questions. The first four of these all require raised eyebrows in at least part of their production. The eye positions for wh-questions in ASL is generally a furrowing, or lowering, of the eyebrows.

interpreter generated a greater proportion of head nods (largely due to providing affirmative feedback to the Deaf interpreter), and 3) the Deaf interpreter used twice the proportion of head tilts to indicate conceptual contrasts[34]. Some of these differences may be due to the need to organize a larger signing space (the Deaf interpreter is standing on stage while the Hearing interpreter is seated in front of the stage) while other instances of head tilts may be due to stylistic differences.

Non-Manuals: Eyebrow Productions Hearing & Deaf Interpreters	Hearing Interpreter **100 Productions**	Deaf Interpreter **110 Productions**	**Subtotals 210 Productions**
Topicalizations	87 (87.0%)	91 (82.7%)	**178 (84.8%)**
Rhetorical Questions	05 (05.0%)	10 (09.1%)	**15 (07.1%)**
Yes/No Questions	04 (04.0%)	06 (5.5%)	**10 (04.8%)**
Conditionals	03 (03.0%)	03 (2.7%)	**06 (02.9%)**
Wh-Questions	01 (01.0%)	00 (0.0%)	**01 (00.5%)**
ASL Elements Subtotals	**100 (100%)**	**110 (100%)**	**210 (100%)**

Figure 4.19 –Results of Non-Manual Eyebrow Analysis: Occurrences

Non-Manuals: Duration of Eyebrow Productions	Hearing Interpreter **4863 Frames**	Deaf Interpreter **6277 Frames**
Topicalizations	3492 (71.8%)	3536 (56.3%)
Rhetorical Questions	234 (04.8%)	362 (05.8%)
Yes/No Questions	184 (03.8%)	335 (5.3%)
Conditionals	224 (04.6%)	122 (1.9%)
Other Raised	62 (01.3%)	616 (9.8%)
Wh-Questions	62 (01.3%)	00 (0.0%)
Other Furrowed	605 (12.4%)	1228 (19.6%)
Squinted	0 (0.0%)	78 (1.3%)
ASL Elements Subtotals	**4863 (100%)**	**6277 (100%)**

Figure 4.20 –Results of Non-Manual Eyebrow Analysis: Durations

The Head productions statistics indicate that the Hearing interpreter provided greater affirmations and negations than the Deaf interpreter while generating fewer head tilts for comparisons and contrasts than the Deaf interpreter. As with other parts of this study it must be emphasized that these differences may merely reflect stylistic differences between the two interpreters. The fact that there are differences at all between two

[34] Shifting head posture to the right or left of central head posture co-occurs with shifting to the left or right from central signing space. For this study it was much easier to identify the head posture changes than to solidly identify the more subtle shifts in signing space; however, the statistics for meaningful head tilts do indicate the proportion of use of space for providing comparisons and contrasts in the HTT and DTT..

interpreters working to generate a shared interpretation supports the notion that each interpreter generates their own original interpretations and there is not a single "right way" to provide an interpretation.

Non-Manuals: Head Productions Hearing & Deaf Interpreters	Hearing Interpreter **124 Productions**	Deaf Interpreter **119 Productions**	**Subtotals 243 Productions**
Head Nods (affirmations)	91 (73.4%)	71 (59.7%)	**162 (66.7%)**
Head Tilts (contrasts)	19 (15.3%)	39 (32.8%)	**58 (23.9%)**
Head Shakes (negations)	14 (11.3%)	9 (7.6%)	**23 (09.5%)**
ASL Elements Subtotals	**124 (100%)**	**119 (100%)**	**243 (100%)**

Figure 4.21 –Results of Non-Manual Head Posture Analysis: Occurrences

Non-Manuals: Duration of Head Productions	Hearing Interpreter **2,788 Frames out of 16,709 total HTT Frames**	Deaf Interpreter **5,171 Frames out of 16,725 total DTT Frames**
Head Nods (affirmations)	1520 (09.1%)	1290 (07.7%)
Head Tilts (contrasts)	960 (05.8%)	3684 (22.0 %)
Head Shakes (negations)	308 (01.8%)	197 (01.2%)
Neutral (no Head Productions)	13,921 (83.3%)	11,921 (69.1%)
Head Posture Subtotals	**2788 (16.7%)**	**5171 (30.9%)**

Figure 4.22 –Results of Non-Manual Head Posture Analysis: Durations

Discourse & Stylistic Differences Between HTT and DTT

D) Compare the use of one-handed or two-handed versions of signs between the HTT & DTT.

Two Different Audiences – Two Different Performances

Between the two performances the Deaf interpreter does more of many things – more signs are produced on the dominant hand, more signs are produced on the non-dominant hand. Overall the processing of the Deaf interpreter is accomplished with only an addition of 20% percent to the combined processing time. While there are clear differences in the performances of each interpreter, it is not fair to compare the performances to each other because each performance is designed for a different audience and deliberately performed in different ways. The Hearing interpreter is seated (less mobile), is dimly lit, has a direct view of the Source Text presenters, and has an audience of one – the Deaf interpreter. The Deaf interpreter is standing on stage (more mobile), is brightly lit, has only an indirect view of the Source Text presenters, and has an audience of hundreds of people, both Deaf and hearing. One of the most important differences is the first one mentioned: being seated

versus standing. These differences do not affect linguistic elements as much as they affect paralinguistic elements of a signed message: the ability to provide contrast, emphasis, formality, informality, and other dramatic qualities to a message are largely affected by this difference.

It is logical for the Hearing interpreter to be seated for small and nearby target text audiences, and in situations where it would be distracting to be more obviously visible to unintended-audience members. This difference in overall posture and in the target audience means that this performance should not be judged to be the same as what the Hearing interpreter would have done had he been standing on the stage addressing the general audience. The point here is to be cautious in noting the differences between the interpreters as part of the overall process of *relayed* interpretation. In other words, the data and results of this study do not provide a comparison of a Hearing interpreter's solo performance with a Deaf interpreter's performance as part of a relay team.

Analysis D – Comparisons of Hand Dominance

The HTT transcript contains 852 entries for both lexical and non-lexical items. Dominant hand productions totaled 740 entries (87%) while 112 entries (13%) were non-dominant hand productions. Of these 112 entries, only 21 (18.8%) were standard ASL signs. The DTT transcript contains 1,015 entries for both lexical and non-lexical items. Dominant hand productions totaled 834 entries for (82%) dominant hand productions while 181 entries (18%) were non-dominant hand productions. Of these 181 entries, 53 (29.3%) were standard ASL signs. All of the non-dominant hand productions from both the HTT and the DTT fell into seven categories: 1) lexical items, 2) classifiers 3) pronouns 4) indices[35], 5) anticipatory holds, 6) residual holds, and 7) manual posturing.[36] The following chart identifies the subtotals in each category.

[35] Indexing, or pointing, is structurally identical to some ASL pronouns but grammatically the function is different. Pronouns appear where nouns would otherwise appear, as subjects or objects of verbs, for example. Indexing in this study was identified as any other use of pointing and has been shown to function as a determiner (Zimmer & Patschke,1990; Bahan et. al., 1995).

[36] Manual Postures were only presented by the Deaf interpreter, who was standing throughout the interpretation. Posture poses included any repositioning of the non-dominant hand which was not directly meaningful in ASL. These include placing the non-dominant hand behind the back, on the hip, or on the elbow. These postures can have the stylistic effect of creating a sense of formality or informality. Other non-manual posture changes included the shifting of weight between legs and the use of small steps to one side or another of stage space.

Non-Dominant Hand Productions Hearing & Deaf Interpreters	Hearing Interpreter **112 Productions**	Deaf Interpreter **181 Productions**	**Subtotals 293 Productions**
Standard ASL Lexical Items	21 (18.8%)	53 (29.3%)	**74 (25.3%)**
ASL Classifiers	05 (04.5%)	12 (06.6%)	**17 (05.8%)**
ASL Pronouns	00 (00.0%)	03 (01.7%)	**03 (01.0%)**
ASL Indexing (Deictics)	43 (38.4%)	07 (03.9%)	**50 (17.1%)**
ASL Elements Subtotals	**69 (61.6%)**	**75 (41.4%)**	**144** (49.1%)
Anticipatory Holds	01 (00.9%)	00 (00.0%)	**01 (00.3%)**
Residual Holds	42 **(37.5%)**	64 (35.4%)	**106 (36.2%)**
Manual Posturing	00 (00.0%)	42 (23.2%)	**42 (14.3%)**
Non-ASL Subtotals	**43 (38.4%)**	**106 (58.6%)**	**149** (50.9%)

Figure 4.23 –Results of Non-Dominant Hand Analysis

The results of comparing dominant-hand and non-dominant-hand productions indicate that non-dominant productions made by the Hearing interpreter were mostly indexing and residual holds. Because the Hearing interpreter is seated, there were no productions of posture poses. The Deaf interpreter produced mostly residual holds and posture poses. The Deaf interpreter generated one tenth the percentage of non-dominant indexing (3.9%) as the Hearing interpreter did (39%). The percentage of non-dominant lexical productions by the Deaf interpreter (29%) was nearly double that of the Hearing interpreter (16%).

While these differences are very real and distinct, they are very likely only stylistic differences between the interpreters. This study focuses on only one Hearing and one Deaf interpreter, therefore it cannot provide an overall explanation of general differences between all Hearing and all Deaf interpreters profession-wide.

Private Communication Between the Hearing and Deaf Interpreters

E1) Identify patterns of eye gaze behaviors which take place between the Hearing Interpreter and the Deaf Interpreter.

E2) Identify non-manual signals, signing in reduced or restricted space, and any other elements where the HTT is not directly relayed as part of the DTT.

Identification of Eye Gaze Patterns

The HTT and DTT data set consists of 17,788 frames, or nearly 593 seconds.[37] The notation of eye gaze was one of the more straight-forward, though time-consuming, elements of data entry. The interpreters remained in fairly static locations and their eyes were clearly visible throughout the data set. Each frame of the data set was analyzed to determine the target of eye gaze for each interpreter.[38] The Hearing interpreter shifted eye gaze between four entities: 1) the Deaf Interpreter, 2) his own lexical signing space[39], 3) the Source Text speaker, or 4) various notes which were on his lap or the floor throughout the data set. The Deaf interpreter shifted eye gaze between five entities: 1) the Hearing Interpreter, 2) audience members, 3) her own lexical signing space, 4) the Source Text speaker, or 5) "other" space.[40]

Analysis E1 – Analysis of Eye Gaze

The analysis of eye gaze patterns indicates that for both interpreters they spent more than half of the time looking at the other interpreter. Specifically the Hearing interpreter looked at the Deaf interpreter for nearly 54% of the time. The Deaf interpreter looked at the Hearing interpreter for nearly 51% of the time. Between the two interpreters either the Hearing, the Deaf, or both interpreters were engaged in "interpreter" eye gaze for 80.5% of the time. Their eye gaze was mutual for only 24% of the time and this portion provides the majority of the communication between the two interpreters.

The Hearing interpreter would consistently hold signs in signing space (either with anticipatory or residual holds) until the Deaf interpreter returned eye gaze to the Hearing interpreter. In return, the Deaf interpreter maintained eye gaze until the message from the Hearing interpreter was either completed or nearly complete.

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[37] At 30 frames in each second this comes to just under ten minutes of interpreting.
[38] The complete total is actually more than 35,576 entries. The video data for the Hearing interpreter begins 148 frames before the Deaf interpreter and the Deaf interpreter has an additional 227 data frames beyond the Hearing interpreter's work on the targeted segment.
[39] Eye gaze to lexical signing space occurs when the eyes look either at the hands while they are signing or to a point in the signing space which is somehow relevant to the signing space (usually space which previously had signs in it).
[40] The "other" entity was actually the source text speaker who had just concluded her message and was exiting the stage right next to where the Deaf interpreter was located. This segment of eye-gaze was noted as "other" because the Hearing interpreter was looking to the stage and the new Source Text presenter – a different location (therefore the eye gaze was not toward a mutual Source Text presenter).

When the Hearing interpreter was actively signing his eye gaze would generally drift from the Deaf interpreter to lexical signing space and return before concluding that segment.

When the Deaf interpreter was determining the meaning of the HTT message she maintained eye gaze, usually while shadowing/mirroring the signs of the Hearing interpreter. Once the point was understood, she would break eye gaze and sometimes would restate the point while gazing at either her own lexical space or at the audience.

Eye gaze toward the Source Text presenter was generally limited to moments of silence, either pauses in the Source Text or transitions between the two Source Text presenters. Generally the Hearing interpreter was the first to look toward the Source Text presenter and the Deaf interpreter would then shift eye gaze to the presenter.

The chart below identifies the total number of frames that each interpreter's eye gaze was directed toward any of five categories: 1) the other interpreter, 2) the audience, 3) lexical signing space, 4) the source speaker, and 5) any other space not previously listed. The hearing interpreter never looked at the audience (who were seated behind the interpreter) but the Deaf interpreter looked to the audience for 28.4 percent of the time. The eye gaze of each interpreter was directed toward the other interpreter for the majority of the time. The chart cross-references the eye gaze pattern of the Deaf interpreter and each category with the hearing interpreter and each category.

Eye Gaze Patterns Hearing & Deaf Interpreters 17,788 Frames (592.9 seconds)	Hearing Interpreter Eye Gaze To Deaf Interpreter	Hearing Interpreter Eye Gaze To Lexical Space	Hearing Interpreter Eye Gaze To Source Speaker	Hearing Interpreter Eye Gaze To Notes on Lap	**Deaf Interpreter Subtotals**
Deaf Interpreter Eye Gaze directed toward Hearing Interpreter	4,301 frames 24.2%	4,312 frames 24.2%	921 frames 5.2%	44 frames 0.2%	**9,578** frames **53.8%**
Deaf Interpreter Eye Gaze directed toward Audience	3,361 frames 18.9%	789 frames 4.4%	836 frames 4.7%	65 frames 0.4%	**5,051** frames **28.4%**
Deaf Interpreter Eye Gaze directed toward Lexical Space	1,065 frames 6.0%	606 frames 3.4%	178 frames 1.0%	19 frames 0.1%	**1,868** frames **10.5%**
Deaf Interpreter Eye Gaze directed toward Source Speaker	302 frames 1.7%	11 frames 0.1%	730 frames 4.1%	221 frames 1.2%	**1,264** frames **7.1%**
Deaf Interpreter Eye Gaze directed toward Other	15 frames 0.1%	0 frames 0.0%	12 frames 0.1%	0 frames 0.0%	**27** frames **2.0%**
Hearing Interpreter Subtotals	**9,044** frames **50.8%**	**5,718** frames **32.1%**	**2,677** frames **15.0%**	**349** frames **2.0%**	**17,788** frames **100.0%**

Figure 4.24 –Results of Eye Gaze Frame Analysis

Analysis E2 – Analysis of Other Means of Communication

Feedback between the interpreters during the interpreting process consisted primarily of head nods. Once the Deaf interpreter understood the point of an interpreted segment she generated a single head nod before shifting eye gaze from the Hearing interpreter. The Hearing interpreter would occasionally generate between one and three head nods during the Deaf interpreter's message. These head nods indicated that the Deaf interpreter's message was accurate and/or particularly well done.

Only once during the entire segment did direct sign communication transpire (discreetly) between the interpreters - at the conclusion of the data set (during a transition of speakers). Reciprocal eye gaze (Hearing looking at Deaf while Deaf looks at Hearing) was the key component of initiating this communication, along with a forward lean from the Hearing interpreter while signing in lower-than-normal signing space: "HEY-wave, THUMB-UP?" The Deaf interpreter's response was also produced in lower-than-normal signing space: "F-OKAY".

CHAPTER 5 – DISCUSSION OF RESULTS

Summary of the Research Questions and Methods

The use of relayed interpreting for conference presentations and business meetings has been in practice since at least the early 1990s. Conference proceedings are generally monologic which allows the use of relayed interpreting to be unidirectional: 1) the Source presenter generates the Source Text (ST), 2) the Hearing interpreter creates an equivalent Target Text (HTT) in American Sign Language 3) the Deaf interpreter then creates a new target text (DTT), also in ASL, 4) the Target audience members each create their own understanding of the meanings of the message, based on the Deaf Target Text . Both of the interpreted portions of this form of relayed interpreting occur simultaneously with the on-going source text. To this date there has been no published research of relayed interpreting which compares the work of the Hearing interpreter, the Deaf interpreter, and the Source presentation.

Research Questions

The overriding goal of the research is to lay a solid base for future research. Ten minutes of data was intensively explored in order to address five research questions:

Question #1 – What is the amount of accuracy between the Source presenter, the Hearing interpreter and the Deaf interpreter?

Question #2 – What is the amount of processing time required between the Source presenter, the Hearing interpreter and the Deaf interpreter?

Question #3 – What are the structural differences between the Hearing interpreter's Target Text (HTT) and the Deaf interpreter's Target Text (DTT)?

Question #4 – What kinds of stylistic differences appear between the Hearing interpreter and the Deaf interpreter?

Question #5 – How is private, interactive communication between the Hearing Interpreter and the Deaf Interpreter accomplished?

Research Methods

From a set of recordings of seven interpreters providing relayed interpreting at a National Convention of the Registry of Interpreters for the Deaf, one team of two interpreters (one Hearing, one Deaf) were selected for intensive study. The team interpreted a ten-minute introduction and announcement plenary session. Video recordings were made, one of each interpreter. Video recordings were digitally edited and synchronized to allow both interpreters to appear in a split screen arrangement. The data set was then transcribed using SignStream software which allowed a frame-by-frame identification of fourteen variables including the Source text words, Audience reactions, ASL vocabulary generated for the dominant and non-dominant hands for both interpreters, head postures, eye gaze, eye brow postures and additional notes for each interpreter. A total of 18,015 frames were transcribed for each of the fourteen variables. Analysis was accomplished using Hypercard and Microsoft Excel software.

Summary of the Research Results

This research provides only a first look at the process of relayed interpreting. Only one team of interpreters was investigated and only the first ten minutes of their work was explored. It is the intention of the author that this research serve as a starting point for further investigation. There are many questions that the present study does not address, even if the practices of relayed interpretation have not changed in the time between the data collection and publication of these results. How do other teams of interpreters perform relayed interpreting? Why do Deaf consumers of this service indicate a preference for relayed interpreting? How is relayed interpreting different for consumers who have limited ASL skills as opposed to consumers who are fluent in ASL? These are some of the questions that the next generation of researchers may choose to explore as they continue to learn more about the interpreting process.

Message Accuracy

Jacobs (1977) estimated that only 80% of a message survived the interpreting process. The first area of investigation in the present study was the representation of key concepts and of nouns between the Source Text, (ST), Hearing Target Text (HTT) and the Deaf Target Text (DTT). Results revealed that the HTT generated between 89% and 95% accuracy in the interpretation from English to ASL. Furthermore the DTT maintained

this level of accuracy or slightly improved upon it. It is possible to use more detailed, but less objective, ways of determining message accuracy, such as using propositional analysis. This study made use of more objective measurements – the use of nouns and of key concept words – to establish a baseline measurement of accuracy. Message accuracy is only a minor portion of this research and the results indicated acceptable levels of accuracy given previous research and estimates.

Processing Time

The second area of exploration was the timing required to generate the key concept words and the nouns of the Source Text, (ST), in the Hearing Target Text (HTT) and the Deaf Target Text (DTT). Paneth (1957) observed interpreters generating concepts between two and four seconds after their appearance in the source text. Oléron & Nanpon (1965) indicated an "ear-voice span" of between two and ten seconds. Cokely (1986) determined an optimum processing time of between four and six seconds.

Results of the present study indicated that the HTT required an average of just under 5 seconds of processing time to be generated. This is centered within Cokely's (1986) suggested optimum processing time. The DTT required, on average, less than 1.5 additional seconds, meaning that the entire process from Source Text to Deaf Target Text could be accomplished, on average, in less than 6.5 seconds, well within the processing times observed by Oléron & Nanpon (1965) for standard simultaneous interpreting. These results indicate that the time required to generate relayed interpreting takes only slightly longer than non-relayed interpreting and still falls within the same time ranges as expected for non-relayed interpreting.

Variation in the processing time is to be expected, but the longest instance of processing time was less than 15 seconds from the ST to the DTT[41]. More interesting is the fact that information was predicted, or anticipated, by both the Hearing and the Deaf interpreters such that some elements of the ST were predicted by several

[41] The noun-based analysis generated the maximum time span between ST nouns and DTT nouns: 14.37 seconds.

seconds[42]. In other words, not only was the Hearing interpreter able to anticipate some elements of the ST but the Deaf interpreter was also able to anticipate some elements of both the ST and the HTT. Chernov (1979) identified the ability to make predictions about the Source Text as an essential component of successful interpretation. The ability of the Deaf interpreter to anticipate the presenter of the Source Text is part of the evidence that the Deaf interpreter is processing the information as an interpreter and not merely mechanically reproducing the HTT.

The most interesting aspect of the processing was the tendency for the interpreters to work somewhat consecutively. As the Source Text moved into new topics, the Hearing interpreter generally began with fixed eye gaze toward the source text presenter while hands were held together in what was transcribed as "PAUSE". As eye gaze moved to the Deaf interpreter and hands were raised, the Deaf interpreter focused eye gaze on the Hearing interpreter. At least several signs would be generated by the Hearing interpreter before the Deaf interpreter moved from PAUSE and began signing, while still maintaining eye contact with the Hearing interpreter. Within a few more sign productions the Deaf interpreter would generate a head nod and shift eye gaze toward the audience. Sometimes the first portion of the DTT would rephrase the HTT, at other times the DTT began by shadowing the HTT. The DTT changed, however, when the Deaf interpreter appeared to have sufficient understanding of the message, produced the head nod and established eye contact with the audience. At this point the DTT would generally begin to make use of greater signing space, even to the point of the Def interpreter moving slightly from side to side within the stage space. Even though eye contact between the interpreters was broken at this point, the Hearing interpreter continued and completed the thought being expressed. The Deaf interpreter would make occasional eye contact with the Hearing interpreter through these potions of the process. Upon completion of a portion of the message the Hearing interpreter either returned hands to PAUSE (indicating the full completion of the message segment) or held the hands in either an anticipatory or residual hold (indicating a more phrasal or conceptual boundary). When the Deaf interpreter had come to either a full or partial completion of the message segment then the Deaf interpreter generated either a

[42] The key-concept analysis generated the minimum time span between ST key concepts and DTT key concepts: negative 3.2 seconds, meaning that the concept was actually represented in the DTT 3.2 seconds before the ST generated the same concept.

PAUSE or a residual hold, and the process repeated. The end result was that the two members of the relayed interpreting team generated their target texts in a largely (though not purely) consecutive manner.

Differences in Grammar and Style

The DTT was not an identical regeneration of the HTT. In fact, less than half of the lexical choices were identical between the HTT and the DTT. The DTT included substitutions of homonyms, repetitions which were not present in the HTT, and additions for either grammatical or idiomatic reasons. The morphological complexity of the HTT was not very different from the DTT, however the DTT did provide more grammatical and conceptual clarifications as compared to the HTT. All of these differences provide further evidence that the DTT is not merely a shadow the HTT, but rather the Deaf interpreter is actively engaged in generating an original target text which maintains the accuracy of the HTT. The Deaf interpreter is an active participant in the overall interpreting process of both team members.

Stylistic differences between the two interpreters include the Hearing interpreter making greater use of indexing, topicalizations, and conditionals while the Deaf interpreter made greater use of lexicalized fingerspelling, classifiers, pronouns, rhetoricals and yes/no questions. These differences may be stylistic differences rather than general differences between Deaf and Hearing interpreters. The Deaf interpreter also made a greater use of the overall signing space, using the non-dominant hand for many ASL lexical items. This difference may be related to the greater ability to access distinct signing space because the Deaf interpreter was standing, unrestricted by any podium or furniture on stage while the Hearing interpreter was seated and therefore less mobile.

Private Communication Between the Team Members

There is a need for the team members to communicate with each other in order to work effectively as a team, and yet overt linguistic communication could easily be misunderstood as being part of the interpretation. Eye gaze and head nods served as the primary communication mechanisms between the Deaf and Hearing team members.

Each interpreter directed their eye gaze to the other interpreter for just over fifty percent of the overall data set[43]. Their eye gaze was mutual for just less than twenty-five percent of the overall data set.

The Hearing interpreter generated multiple instances of repeated head nods while observing the Deaf interpreter. This feedback generally occurred during the Hearing interpreter's PAUSEs, residual holds, or anticipatory holds. This means that the feedback was given consecutively with the generation of various segments of the HTT. At no time did the Hearing interpreter generate this form of feedback while still generating any portion of the HTT. A different pattern was evident from the Deaf interpreter who frequently began each portion of the DTT with a head nod, indicating comprehension of the HTT and readiness to begin generating the next segment of the DTT.

Any private message between the interpreters using signs during the interpreting would confuse the target audience and be misunderstood as part of the source presenter's message. The Deaf interpreter could misunderstand such communication from the Hearing interpreter as source text to be interpreted. Consumers of the DTT might misunderstand a message from the Deaf interpreter as being part of the final target text. Only one time, during an obvious shift between speakers, did the Hearing interpreter initiate linguistic communication with the Deaf interpreter. This communication was marked by the Hearing interpreter leaning forward and signing in lower-than-normal space. The Deaf interpreter responded, also using lower-than-normal space. Both interpreters maintained mutual eye gaze during this exchange[44].

Proposed Models of Relayed Interpreting

The process of interpreting gains complexity when two interpreters work together to bring a source message into a single target message. One of the key motivations for choosing to perform relayed interpreting is to provide matched sets of sociolinguistic frames: The Hearing Interpreter and the Hearing Source Consumer both share significant portions of their sociolinguistic frames. Likewise the Deaf Interpreter and the Deaf Target Consumer will share significant portions of their sociolinguistic frames. Since the sociolinguistic frames are a key filter in

[43] The Hearing interpreter's eye gaze was directed toward the Deaf interpreter across 50.8 percent of the data set. The Deaf interpreter's eye gaze was directed toward the Hearing interpreter across 53.8 percent of the data set.
[44] The exchange itself was very brief and consisted of the Hearing interpreter asking "HEY-wave, THUMB-UP, #OK?" and the Deaf interpreter responding "F-OKAY".

how a person understands the communication surrounding them, matching these frames between interpreters and consumers should provide significant benefit.

Relayed Interpreting in Conference Settings

Relayed interpreters primarily function in teams of two at conference settings. The basic concepts of the model can be rearranged to represent the skills, needs, and abilities of various communication situations. The relayed interpreting analyzed in the present study was a form of interpreting between one Hearing interpreter and one Deaf interpreter for a general audience in a conference setting. The model below represents a simultaneous relayed interpretation, with consecutive processing, of monologic discourse[45].

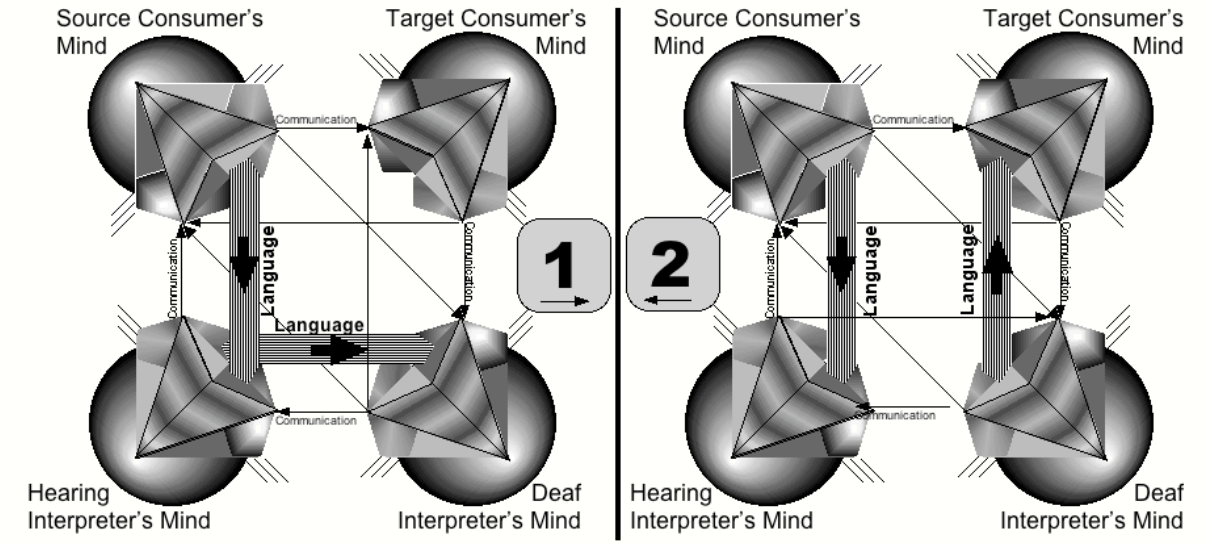

Figure 5.1 – Simultaneous Relayed Interpreting with Consecutive Processing of Monologic Discourse

This model represents a minimum of four participants, but can be expanded to acknowledge multiple consumers and even multiple interpreters. Each participant's mind has varying background knowledge, language, and culture. Each mind will impose these differences upon the expression and/or perception of communication in the process. The source consumer will generate a certain amount of extra-linguistic communication, such as facial

[45] This model and the next two models, built of similar components, are explained with much greater detail in Appendix G. The reader is strongly encouraged to read Appendix E and Appendix F prior to exploring Appendix G because all of this supplemental material provides an overview of the essential components of the model which will not be explained in detail here.

expressions, body postures, and non-linguistic gesturing all of which is accessible to the Deaf target consumers and to the Hearing interpreter. The Deaf interpreter has reduced access to this extra-linguistic communication because of the need to monitor the Hearing interpreter's target message.

The Hearing interpreter perceives both the linguistic and extra-linguistic communication of the source consumer, comes to a unique understanding of the meaning[46] of the source consumer's messages and then generates the Hearing Target Text (HTT). The Deaf interpreter perceives the HTT, the extra-linguistic communication of the source consumer and of the Hearing interpreter, and comes to a unique understanding of the message, then generates the Deaf Target Text (DTT). The Deaf target consumers then are able to perceive the DTT, the extra-linguistic communication of the source consumer and of the Deaf interpreter (but NOT of the Hearing interpreter) and generate their own unique understandings of the message.

Notice that the lines of communication remain intact between all of the participants except for two: the Hearing Interpreter and the Target Consumer. The break in this link of communication is deliberate because the alternative would be distraction and excessive noise. The arrangement depicted in Figure 5.1 specifically depends upon different channels of language operating simultaneously. The source presenter in the arrangement depicted above is using spoken language to generate the source message, which the Hearing Interpreter regenerates using a signed language. The channels of spoken and signed languages do not cause significant mutual noise.[47] The Deaf Interpreter maintains the channel of signed language. If the target consumer were able to view both the Hearing Interpreter's message and the Deaf Interpreter's message then the result would be competing visual messages in the same channel: signed language. In order to eliminate this form of visual noise, the Hearing Interpreter should be located out of the perceptual range of the target consumer.

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[46] Each person's mind – having unique background experiences and unique exposure to varieties of language and cultural practices – will by definition have a unique understanding of any given message.

[47] This is not to say that consumers will not be distracted by visual elements of a spoken message or auditory elements of a signed message. The point is that there is no inherent conflict between one person's physical production of a spoken message and another person's physical production of a signed message occurring simultaneously.

The model presented above in figure 5.1 also indicates a fully consecutive approach to the processing of the message between the Hearing and Deaf interpreters. In other words, while the source message is produced without interruption, a portion of the HTT is generated and concluded before the corresponding portion of the DTT is generated and concluded. In reality these boundaries between the HTT and DTT are very rarely so distinct. The model is designed to reveal the potential component of consecutive processing.

Relayed Interpreting with DeafBlind Consumers

Relayed interpreters do not only function in teams of two or at conference settings. The basic concepts of the model can be rearranged to represent the skills, needs, and abilities of various communication situations. Another form of relayed interpreting takes place when working with DeafBlind consumers. If there are several DeafBlind consumers who require tactile interpretation then several interpreters will be required. As soon as there is more than one consumer of the HTT, the process will be different because the Hearing interpreter will no longer be able to completely monitor the comprehension, feedback, and / or target text production of multiple final Target Texts. This modification places a Hearing interpreter as the lead member of several different teams, all working simultaneously. The result will have less consecutive processing and the work of the Hearing interpreter may look much more like standard, non-relayed simultaneous interpreting. The model presented in figure 5.2, below, represents this arrangement, but with a single DeafBlind consumer.

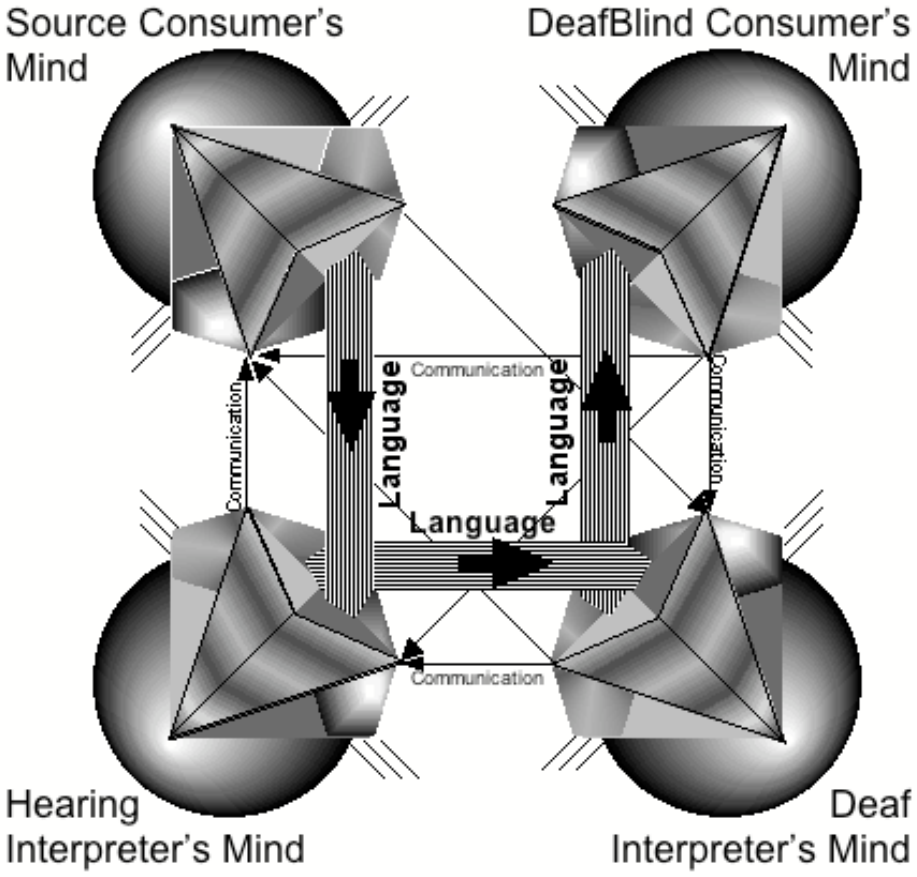

Figure 5.2 – Simultaneous Relayed Interpreting with Simultaneous Processing of Monologic Discourse with a DeafBlind Consumer

Notice that the lines of communication between all of the participants are only intact for the expressed communication of the DeafBlind consumer, but that the DeafBlind consumer relies entirely on the Deaf Interpreter for perception of all paralinguistic communication from both the Source presenter and the Hearing interpreter. Some DeafBlind consumers do have some ability to see (ranging from the contrasts of shadow and light to clear, but peripherally restricted, vision. Also most DeafBlind consumers would also be able to access tactile sensations and the sense of smell to receive some amount of communication from other people. The point of the model, however, is to indicate that the Deaf Interpreter provides the primary mechanism for all forms of paralinguistic communication such as head nods, facial expressions, and gestures.

Another difference between this arrangement and the relayed interpreting investigated in this study is that the Hearing interpreter may be able to directly monitor the target consumer's comprehension and feedback. This link of communication was deliberately removed (by keeping the Hearing interpreter out of the Target audience' sight lines) in the model of conference-based relayed interpreting (figure 5.1) to reduce distraction and excessive visual noise. The arrangement depicted in Figure 5.3 does not present this problem because the target consumer cannot perceive the Hearing interpreter directly. The Hearing interpreter can directly perceive both the DTT and the DeafBlind consumer's reactions. The Source presenter can also directly perceive both interpreters and the DeafBlind consumer. The DeafBlind consumer, however, is the only communication participant who cannot perceive either the Source presenter or the Hearing interpreter.

Relayed Interpreting for Language-Challenged Consumers

A third use of relayed interpreting takes place with Deaf consumers who do not share a common signed language with the community around them. This can be because the person is an immigrant who knows another signed language, or because the person in fact does not have significant fluency in any language. One typical situation where relayed interpreting is established for such a consumer is where legal proceedings are taking place, especially when the language-challenged consumer is either a witness, plaintiff, or defendant. Court records are generally kept in monolingual, written form through transcription. This means that whatever the interpreter says is entered into the court record and there is usually no direct record of the source message. Accuracy and cohesion of the message is required in this process, but also timeliness. Relayed interpreting in such settings may be presented in a fashion similar to that represented in figure 5.1. If greater accuracy is required, however, then the work of interpreters needs to move toward fully consecutive interpreting (Russell, 2002). The model below identifies the separate components of a consecutive relayed interpretation which includes consecutive processing of the message between the two interpreters.

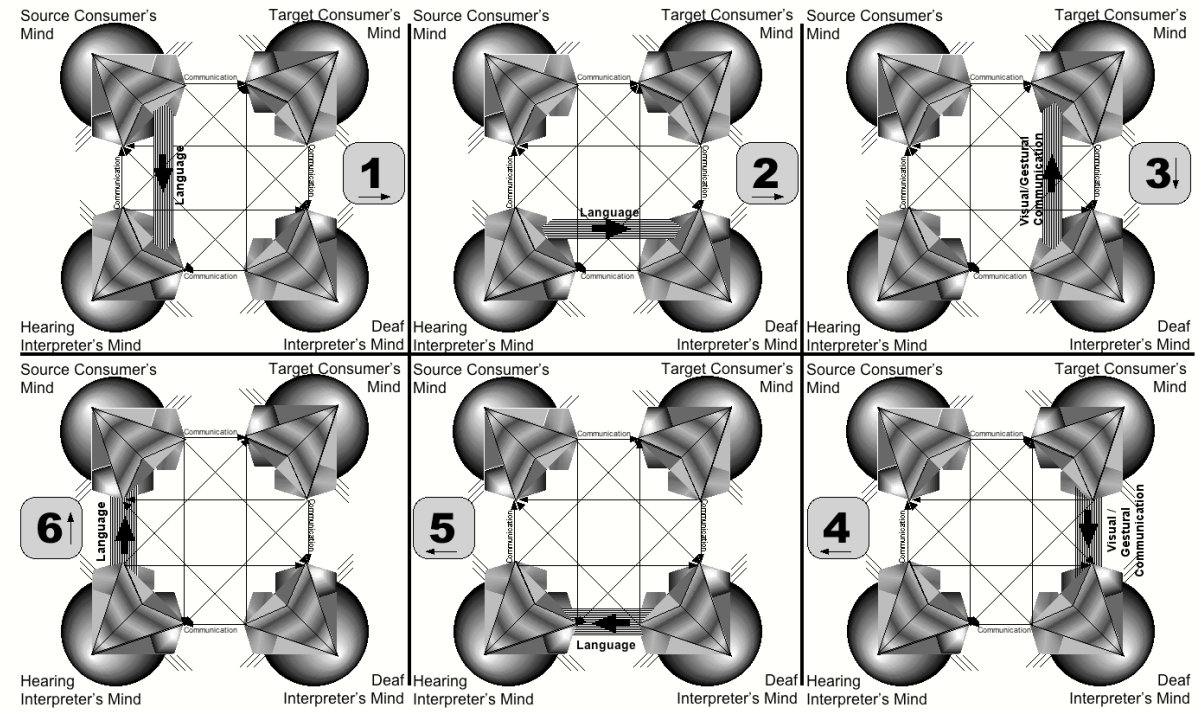

Figure 5.3 – Consecutive Relayed Interpreting with Consecutive Processing of Dialogic Discourse with a Language-Challenged Consumer

Suggested Areas for Future Research

Relayed interpretation remains an under-explored process which can provide a wealth of insight to understanding the interpreting process in general. Future research could explore the opinions and preferences of the consumers of the service and also the Deaf and Hearing interpreters who provide the service. Successful team interaction must have certain prerequisites in skills and successful philosophies to how the team members approach the task of relayed interpreting. Determining these skills and characteristics should help professionals improve their performances. The present study investigated conference-based use of relayed interpreting which leaves several other varieties of relayed interpreting untouched. Many of these other uses of relayed interpreting are described in Appendix G.

Legal settings have made use of relayed interpreting, particularly for Deaf consumers who do not have significant ASL fluency. Events with DeafBlind consumers have also frequently made use of relayed interpreting on a much more widespread basis where a single HTT may be the source for dozes of different

DTTs. This difference would significantly impact the ability for multiple Deaf interpreters to have the kinds of team-based communication that were found in this study. Comparisons between teams and the impact that different team members can have (such has having different Hearing interpreters providing HTTs for the same Deaf interpreter) could shed further insight into the impact that stylistics differences between interpreters have on the overall process and resulting target texts.

Conclusions

This study began as an exploration of a form of interpreting which has seen a growth in its use, yet has had very little research supporting its use and effectiveness. Although the findings presented here are limited by the fact that only a single team of relay interpreters was explored, the results indicate that relayed interpreting is both effective and efficient. The accuracy rates for the interpreting team were actually enhanced by the overall process, meaning that the DTT demonstrated slightly better accuracy than the HTT alone. Instead of doubling the time required, the processing time was only expanded by twenty percent between the Hearing interpreter and the Deaf interpreter.

The evidence in this study indicates that relayed interpreting has beneficial qualities to the overall accuracy of messages and provides a greater opportunity to generate more culturally appropriate and idiomatic target texts than non-relayed interpreting. Russell (2002) demonstrated that consecutive interpreting provides greater accuracy than simultaneous interpreting. The use of two interpreters as a relay team, working together to generate a single target text, imposed a more consecutive approach to the interpreting task which was generated simultaneously with the production of the source text. Thus relayed interpreting allows the benefits of consecutive interpreting to take place while allowing the Source presenter to continue without interruption.

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APPENDIX A – PARTICIPATION IN RESEARCH

Dear Interpreter,

I am directing a research project that involves interpreters at the 1997 RID National Convention in Long Beach, CA. The goal of this research is to investigate relay interpreting and explain how and why it works. To perform this research it is necessary to make video recordings of two instances of relay interpreting: the keynote address and one of the business sessions.

All of the information that we collect will remain completely confidential. No data collected in this study will ever be broadcast or published without your specific consent. In order to understand the background of each person in this study, I will be asking you to complete a brief demographic questionnaire.

If you have any questions or concerns about this project or the questionnaire you can contact me at xxx or by phone: xxx (v) or xxx (t).

Please sign the enclosed permission form. Thank you for helping us to improve our understanding of relay interpreting!

Sincerely,

Brian E. Cerney, M.A.

APPENDIX B - PERMISSION FORM

To: Brian E. Cerney

FROM: _____

DATE: _____/_____/_____

RE: Participation in Research

I am willing to participate in your project to produce a model of interpretation. I understand what is required of me and that my cooperation is strictly voluntary. If I have any questions about the project I can contact you at xxx (v) or xxx (t).

As my part in this project I agree to complete the demographic questionnaire and to allow my interpreting work to be videotaped for research purposes only. I understand that my responses and performances will be kept strictly confidential and that they will not appear in any public form without my express written consent.

_____
(printed name)

_____
(signature)

APPENDIX C - CONFIDENTIALITY FORM

TO: Brian E. Cerney

FROM: Members of Doctoral Committee

RE: Maintaining Confidentiality of Subjects

We, the undersigned members of Brian Cerney's doctoral committee, agree to maintain the confidentiality of the subjects in his research on Relayed Interpreting.

Brian Cerney, Chair	____/____/2004 Date	_____ Signature
Dr. Cherie Lohr, Ph.D.	____/____/2004 Date	_____ Signature
Dr. Judy Shepard-Kegl, Ph.D.	____/____/2004 Date	_____ Signature
Dr. Phyllis Wilcox, Ph.D.	____/____/2004 Date	_____ Signature
Dr. Rusty Morris, Ph.D.	____/____/2004 Date	_____ Signature
Dr. Steven D. Collins, Ph.D.	____/____/2004 Date	_____ Signature

APPENDIX D – RID CERTIFICATION INFORMATION (REGISTRY OF INTERPRETERS FOR THE DEAF)

Tips From The Raters

Many candidates have expressed concerns regarding what it is, exactly, that the certification raters are looking for. Quite simply the raters are looking at everything the candidate does to ensure that each candidate has the minimum skills necessary to professionally interpret. These minimal skill levels were determined by the members who attended the St. Paul national RID convention in 1987. Here are some suggestions from the Raters of both the CI and CT tests.

What is "Transliteration" As Required For Performance Testing?

Critical areas:

Message - make sure that your interpretations do not add information, delete information, or alter the essential meaning of the original message. Be confident in your work. Do not produce messages with uncertainty or doubt unless the original message was produced in this way.

Production - speak or sign clearly in grammatically correct constructions for the task you are performing. Do not produce distracting information (e.g. "um, er, you know" or back and forth weaving while signing).

Task - know which test you are taking. Do not perform "transliteration" when the test is for interpreting. Do not perform interpreting when the test is for "transliteration." The transliteration task for the test is not one of manual English coding. It is conceptually correct signing with English words mouthed on the lips.

Less critical areas:

You will be simulating platform interpreting. Make sure you are dressed appropriately for the task. Do not be noisy in your signing style. Be sure to speak with enough volume to be clearly recorded. In short, behave as you normally would for a real interpreting performance.

What Is "Transliteration" As Required For Performance Testing?

Many candidates for the Transliteration Performance Examination have requested guidance for understanding what the goal of the English-to-sign portion of the test is. The raters have reviewed the minimum standard and the performances of passing and failing candidates and have agreed upon the following definition of "Transliteration." Three categories of variables have been defined: Grammar and Vocabulary, Processing, and Mouth Movement Patterns.

Grammar and Vocabulary

Use of space for role taking (characterization)

Use of space for subject-object agreement and verb inflections

Conceptually correct sign choices (based on meaning rather than form)

Some amount of "initialization" but only to the extent that initialization is used by deaf adults (not to the extent of Manual English Codes).

Processing

Lexical to phrasal levels of processing, e.g. word meaning for word meaning with some restructuring or paraphrasing for clearer conveyance of meaning.

Some additions of ASL signs which enhance the clarity of the visual message (Modals such as CAN, classifier constructions, indexing, and listing structures)

Detailed English morphology (e.g. manual English coding of "ing," "ed," and the copula) is conveyed on the mouth but not with manual signs.

Mouth Movement Patterns
Cohesive English sentences are visibly presented on the lips, either as exact words from the original text or as English paraphrasing of the original text.
Overriding all of these details is the requirement that the target message resulting from the transliteration process remains true and accurate with regard to the source text. There should be no substitutions (missing a concept from the original and replacing it with a different concept) and no significant omissions (all of the main points and nearly all of the supporting details of the source text should be reflected in the target text).

Working into Spoken English
For the Transliteration Performance Exams, candidates should create a grammatically correct and coherent English text which remains true and accurate with regard to the source text. There should be no substitutions and very few (if any) omissions.

What is "Interpretation" As Required For Performance Testing?
Many candidates for the Interpretation Performance Examination have requested guidance for understanding what the target production of the English-to-sign portion of the test should look like. The raters have reviewed the minimum standard and the performances of passing and failing candidates and have agreed upon the following definition of "Interpretation" as applied to the RID Performance Examinations. Three categories of variables have been defined: ASL Grammar and Vocabulary, Processing, and Mouth Movement Patterns.

ASL Grammar and Vocabulary (English to ASL Interpreting)
Use of appropriate ASL grammar (use of space for characterization, subject-object agreement and verb inflections; facial grammatical forms for questions, topics, commands, etc.)
Semantically correct sign choices used appropriately for ASL syntax.
Limited amounts of "initialization" are acceptable.

Processing
The minimum acceptable level of processing is at the phrasal to sentential levels. Word for word processing will not pass the certification examination.
Some syntactic influences of the original text may appear in the interpretation, but only so long as the interpretation remains clear and makes "visual sense."

Mouth Movement Patterns
Mouth patterns should reflect appropriate adult ASL usage.
Mouth movements which only represent exact English word order will not pass the test.
Overriding all of these details is the requirement that the target message resulting from the interpretation process remains true and accurate with regard to the source text. There should be no substitutions (missing a concept from the original and replacing it with a different concept) and no significant omissions (all of the main points and nearly all of the supporting details of the source text should be reflected in the target text).

Working into Spoken English
For the Interpretation Performance Exams, candidates should create a grammatically correct and coherent English text which remains true and accurate with regard to the source text. There should be no substitutions. Extended periods of silence (processing time) are acceptable so long as there are no significant omissions.

Description of the RID CI and CT Rating Scales
RID's rating system for the Certificates of Interpretation and Transliteration is based on a set of 13 items, which we refer to as behaviorally anchored scales. These items represent key behaviors an interpreter must demonstrate in order to be awarded certification. The 13 behaviors are scored on a 1-5 Likert-type scale, with one being low and five being high. They are weighted according to criticality and importance to the task in order to correspond to the St. Paul standard voted on by the certified membership in 1987. There are seven scales/behaviors for the Voice-to-Sign (V-S) section, and six for the Sign-to-Voice (S-V) section. These 13 scales (items) are duplicated for the One-to-One section of the test as the candidate does both V-S and S-V. therefore a candidate for certification is rated on 26 scales. There are three categories of raters: Deaf consumers, hearing consumers, and certified interpreters. A candidate's tape of their performance is sent to a rater in each of the three categories.

This information co-exists with the raters description of "What is Interpretation?" and "What is Transliteration?" Although all RID tests continue to be non-diagnostic in nature, these documents will prove beneficial for those preparing for the performance exams.

A general description of the seven scales for the Voice-to-Sign segment are:
1) Sign Parameters - correct and consistent production of sign parameters (handshape, palm orientation, location and movement).
2) Flow - comfort level of sign flow; Example - smooth, comfortable for viewing, not choppy with few false starts and unnecessary pauses, not over smooth without appropriate pauses
3) Message Equivalence - message completion with regard to factual information, register and cultural/linguistic adjustments with few minor miscues (omissions/substitutions, additions, and intrusions)
4) Target Language - uses appropriate target language (e.g. signed English for the transliteration test and ASL for the interpretation test)
5) Affect - consistency of facial grammar and affect to source language
6) Vocabulary Choice - conceptually correct sign choices based on meaning rather than form
7) Sentence Boundaries - clear and consistent identification of sentence types and topic boundaries which match source language

A general description of the six scales for the Sign-to-Voice segment are:
8) Enunciation - clarity and consistency throughout task
9) Flow - comfort level for listening; example: few false starts, pauses, and non-linguistic behaviors (distracting mannerisms - uh, um, etc.), not over smooth without appropriate pauses
10) Message Equivalence - message completion with regard to factual information, register and cultural/linguistic adjustments with few minor miscues (omissions/substitutions, additions, and intrusions)
11) Inflection - consistency of inflection to source language
12) Vocabulary Choice - conceptually correct sign choices based on meaning rather than form
13) Sentence Boundaries - clear and consistent identification of sentence types and topic boundaries which match source language

Scales 1-13 are repeated for the One-to-One section of the exam.

APPENDIX E – ETHICAL GUIDELINES FOR INTERPRETERS AND TRANSLITERATORS

RID (Registry of Interpreters for the Deaf) Code of Ethics (until 2003)

1) Interpreter/Transliterator shall keep all assignment-related information strictly confidential.
2) Interpreter/Transliterator shall render the message faithfully, always conveying the content and spirit of the speaker, using language most readily understood by the person(s) whom they serve.
3) Interpreter/Transliterator shall not counsel, advise, or interject personal opinions.
4) Interpreter/Transliterator shall accept assignments using discretion with regard to skill, setting, and the consumers involved.
5) Interpreter/Transliterator shall request compensation for services in a professional and judicious manner.
6) Interpreter/Transliterator shall function in a manner appropriate to the situation.
7) Interpreter/Transliterator shall strive to further knowledge and skills through participation in workshops, professional meetings, interaction with professional colleagues and reading of current literature in the field.
8) Interpreter/Transliterator, by virtue of membership in or certification by the R.I.D., inc. shall strive to maintain high professional standards in compliance with the code of ethics.

AVLIC (Association of Visual Language Interpreters of Canada) Code of Ethics

1) The visual language interpreter will keep all assignment-related information strictly confidential.
2) The visual language interpreter will render the message by faithfully conveying its intent and spirit.
3) The visual language interpreter will not counsel, advise, or interject personal opinions related to the interpreted assignment.
4) The visual language interpreter will use the preferred language of the person(s) for whom she/he is interpreting.
5) The visual language interpreter will accept assignments using discretion with regard to the interpreting skills required, the setting, and the person(s) involved.
6) The visual language interpreter will approach the matter of compensation in a fair and equitable manner.
7) The visual language interpreter will conduct herself/himself in all phases of the interpreting situation in a manner befitting the profession.
8) The visual language interpreter will strive to further individual knowledge and skill in order to maintain high professional standards.

AIIC Code of Professional Conduct (Association Internationale Des Interpretes de Conférence / International Association of Conference Interpreters)

I. Purpose and Scope

Article 1

a) This code of Professional Conduct and Practice (hereinafter called "the Code") lays down the conditions governing the practice of the profession by members of the Association.
b) Members are bound by the provisions of the Code. The Council, with the assistance of the Association's members, shall ensure compliance with the provisions of the Code.
c) Candidates for admission shall undertake to adhere strictly to the provisions of the Code and all other AIIC rules.
d) Penalties, as provided in the Statutes, may be imposed on any member who infringes the rules of the profession as laid down in the Code.

II. Code of Ethics

Article 2

a) Members of the Association shall be bound by the strictest secrecy, which must be observed towards all persons with regard to information gathered in the course of professional practice at non-public meetings.
b) Members shall not derive any personal gain from confidential information acquired y them in the exercise of their duties as interpreters.

Article 3

Members of the Association shall not accept engagements for which they are not qualified. Their acceptance shall imply a moral undertaking on their part that they will perform their services in a professional manner.*

Article 4

a) Members of the Association shall not accept any employment or situation which might detract from the dignity of the profession or jeopardize the observation of secrecy.

b) They shall refrain from any conduct which might bring the profession into disrepute, and particularly from any form of personal publicity. They may, however, for professional reasons advertise the fact they they are conference interpreters and members of the association.

Article 5

a) It shall be the duty of members of the Association to afford their colleagues moral assistance and solidarity.

b) Members shall refrain from statements or actions prejudicial to the interests of the Association or its members. any disagreement with the decisions of the Association or any complaint about the conduct of another member shall be raised and settled within the Association itself.

c) Any professional problem which arises between two or more members of the Association may be referred to the Council for arbitration.

d) As regards candidates, however, infringements of the code or other rules of the Association shall be adjudicated by the Admissions and Language Classification Committee.

Article 6

Members of the Association shall not accept, and still less offer, conditions of work which do not meet the standards laid down in the Code, either for themselves or for interpreters engaged through them.

* The moral undertaking given by AIIC members under article 3 of the Code of Professional Conduct shall apply equally to the performance of services by interpreters who are not members of AIIC but are engaged through a member.

The Cued Speech Transliterator Code of Conduct ©1989 Fleetwood, Metzger

A Cued Speech Transliterator shall:

1) *Facilitate communication for hearing-impaired/deaf consumers of cued speech (clients)*
Cued speech transliterators serve to remove expressive and receptive communication difficulties/ambiguities between hearing-impaired/deaf clients and hearing consumers. Facilitation of communication (spoken), however, should not exclude concurrent consideration for and conveyance of auditory environmental stimuli.

2) *Provide sound-based environmental information to hearing-impaired/deaf consumers of cued speech (clients)*
Cued speech transliterators should include appropriate representation of auditory environmental stimuli as it occurs, without the influence of personal judgement as to its value to the hearing-impaired/deaf client. This conveyance of auditory environmental stimuli should serve to facilitate a common mainstream experience. Inclusion of auditory Environmental Stimuli, however, should not exclude concurrent consideration for and facilitation of communication (spoken).

3) *Provide appropriate client training to allow for proper transliterator utilization*
Cued speech transliterators serve in an ongoing training capacity with regard to client-transliterator utilization. The development of transliterator usage skills should always be facilitated with tact, reasonable judgement, and prudent regard for the rights of the hearing-impaired/deaf client.

4) *Provide hearing consumers with appropriate demonstration/explanation of the transliterator role*
It is reasonable to assume that hearing consumers are unfamiliar with or do not understand the aspects of a transliterating situation which are intended to preserve the equal access rights of the hearing-impaired/deaf client. Consequently, Cued Speech transliterators must secure the confidence and support of said consumers through role demonstration and/or explanation in order to appropriately implement methods used to preserve these equal access rights.

5) *Demonstrate and implement ongoing reverence for the preservation and promotion of complete and equal access for the hearing-impaired/deaf client*
Cued speech transliterators should always maintain the skills and conduct necessary to preserve the equal access rights of the hearing-impaired/deaf client. This includes appropriate remediation of the lack of logistical and/or ethical considerations on the part of others. Equal access rights include unconventional as well as conventional factors available to the mainstream population.

6) *Promote the progression of events as if circumstances do not necessitate transliterator presence*
Cued speech transliterators strive to maintain an atmosphere, environment, and consequent experience unaffected, even incidentally, by their necessary presence and function. Most individuals rarely come in contact with a working transliterator in a mainstream situation. consequently, the common mainstream experience is not influenced by the presence of a transliterator. Therefore to allow the hearing-impaired/ deaf client equal access to this common experience, transliterators must avoid influencing the atmosphere, environment, and resulting experience of the mainstream.

7) *Adhere to the ethical standards of transliterating for hearing-impaired/deaf clients*
Clients must have reason to trust that through Cued Speech transliterator utilization they are afforded the same conventional and unconventional rights, privileges, and opportunities as individuals who need not utilize such services. Ethical standards* have been adopted and must be practiced by transliterators to secure the trust of clients and offer them fair and equal access. (* the Code of Ethics of the Registry of Interpreters for the Deaf; ©1989 RID, Inc.)

8) *Support the profession of cued speech transliteration by striving to improve related skills and knowledge and the application thereof*
The hearing-impaired/deaf client is entitled to receive the most effective service available in the field of cued speech transliteration. Therefore, it is the professional responsibility and ethical obligation of cued speech transliterators to adhere to and implement the currently acceptable philosophies and techniques in the field.

APPENDIX F0 - Metachapter

Meta-Dialogue

Phaedrus and Timoth entered the grand hallway. Phaedrus gazed at Timoth with admiration. "Well, Timoth, you have graduated from our training and now through Zeno's generosity you will enjoy quite a productive residency through the guidance of Rasmus."

Timoth smiled as they approached the doorway, "I hope I live up to everyone's expectations."

Inside, Rasmus and Zeno were looking toward the doorway. Zeno smiled as Timoth and Phaedrus entered the room. "Good afternoon Phaedrus. Good afternoon Timoth. It's good to see the two of you again." Zeno gestured for Timoth and Rasmus to step toward each other, "Rasmus, this is your new Apprentice, Timoth. Timoth, your assigned Mentor, Rasmus."

Timoth and Rasmus shook hands and exchanged greetings.

Rasmus placed a hand on Timoth's shoulder, "You will do well. Just trust yourself and always seek to learn a new thing each day. You have already taught yourself well through Phaedrus' training, now you will continue to teach yourself through your own experiences."

Timoth's eyebrows furrowed, "What do you mean that I taught myself well through Phaedrus' training?"

Phadreus stepped forward, "Rasmus refers to the eternal truth of education: No mind can force another to learn... true learning can only come from within the mind that learns. We present the information, the challenges, the guidance; but you, Timoth, you and your classmates are the ones who must choose to learn from these things."

Zeno addressed Timoth directly, "And here we recognize that a transitional time is needed to bring the graduate into full capability as a Server. We look forward to your time with us, Timoth. When you have completed your time here as an Apprentice, we will review your progress and personal goals. Many of our Apprentices continue on with us as Independent Servers and become Mentors themselves."

Timoth glanced down, "Well, it's going to be a long time before that ever happens to me."

Rasmus laughed while reaching toward a nearby table and picked up the book lying there. "Timoth, here is your handbook. I think you will find it very helpful as you spend time with us here."

Timoth glanced at the cover, "The Interpreting Handbook," then opened it, flipped through several pages, returned to the table of contents and then flipped through more pages. "Hmm... I see the author uses dialogues at the beginning of each chapter. Why is that?"

Rasmus nodded, "It is based on the ancient principles of Socrates and Plato, which have been implemented by numerous authors since that time. The author uses dialogues to introduce concepts to the reader in a more casual way before exploring them in depth during the rest of each chapter."

Timoth pointed a finger at a page in the book, "But this one character seems always to be asking questions. Doesn't that character know anything?"

"Of course, but the inquisitive character needs some guidance to understand that the answers to the questions are already in the character's mind."

"Well, that makes sense. Of course! A person has to have some knowledge of the topic to ask the question in the first place. That sort of pins down which pieces are understood and which need more thought... hmm!"

Rasmus smiled. "And so I see we have already established a good beginning. I will see you tomorrow morning in my office."

Timoth and Rasmus shook hands. Rasmus departed as Phaedrus and Timoth exited Zeno's office. Timoth smiled while looking at Phaedrus "Thanks for getting me here. I'll do my best."

"Doing your best is what got you here in the first place."

Chapter 0
The Metachapter

"The Key to Education is to Trick People into Teaching Themselves." - 1998 BC

0.0 Overview

OK, so you've never heard of a "Chapter 0" before and you've never seen anything called a "metachapter" either. But if you know enough about language and how English words combine to create new meaning, you can predict that this chapter is a chapter about chapters. Indeed, it is exactly that. Most books call it a preface, but as a linguist, I know about languages, and I can use pieces of words to make new words with the hope that they stimulate a little interest in the reader. If you are a working interpreter then you too are a linguist. You might not feel comfortable with that label yet, but I hope that once you have read through this book, done the suggested activities at the end of each chapter, and used the ideas here to improve your own interpreting then you will feel perfectly comfortable calling yourself a linguist.

The key to self improvement is having self motivation. This means that you should have a sense of what you need to learn and some ideas about how you will learn it. You are always the one guiding your own education. Even if this book is required reading for a course you are taking, you still determine how much of it you are exposed to. If you aren't interested in reading any more about how the book is organized, then you can go ahead and skip to chapter one... it's OK, you don't even need my permission. You are the reader, therefore you can read the book any way you want to. Read the summaries first, or read the book randomly, just open to a page and start reading anywhere; you're in charge! Of course, you might have a quiz or exam on specific parts of the book, so following your teacher's syllabus might be to your advantage too.

So this metachapter is where I get to tell you what I was thinking when I wrote this book. Many times I have been reading a book or article and wondered to myself "What on Earth was this guy thinking?!!", so here is my explanation of my vision for this book. It begins with who I am and how I got here. Interpreting is that way too. Success as an interpreter very much depends on WHO you are and WHAT life experiences lead you to becoming an interpreter.

0.1 The Author

My name is Brian Cerney. I came to the profession of interpreting through the side door. What I mean by that is that I wasn't exactly born into the Deaf community (my entire family is hearing). Most deaf people I know were not born into the Deaf community either. But I am not deaf... well, not completely. I sometimes refer to myself as Left-Deaf. In audiological terms I am monaurally deaf, which (for me) means I am deaf in my left ear: 100%. No one could really measure it for sure because when the audiologists cranked up the volume (on the left side of the headset) toward 100 dB, my whole head would carry the sound to my right ear and I could "hear".

In societal terms being left-deaf means people never even suspect this audiological fact about me unless they are within three feet of my left ear and attempt to converse with me through spoken language. If you have a sharp eye for details, you'll notice that the right side of my mouth (the side closest to my "good" ear) is a little more flexible than the left side of my mouth. Growing up left-deaf gave me a permanent curiosity about the Deaf community. I had deaf classmates in high school and in college, but I never learned sign language (my high school classmate was oral) until my sophomore year at the University of Rochester. Of course, Rochester, NY has a very active Deaf community, and I happened to be in a pretty good place to begin exploring my "left" side.

I understood before I began learning ASL that I was not culturally Deaf. I had seen the stage play "Children of a Lesser God" twice before I began my excursion into ASL and the Deaf community. At each performance I was in the balcony and below me was a sea of moving hands. I knew I would some day get involved with this community, but I also knew that I needed to be invited in, I didn't have a full birth-right to it.

I have met many other monaurally deaf people, some left-deaf, some right-deaf. Most of them don't care to talk about their "condition." Perhaps they see themselves as impaired in some way. I always drew strength from the fact that I was different from nearly everyone else. Before my family knew that my deafness was centered in the

cochlea of my inner ear, they expected that I would have middle-ear surgery to correct my condition. At the Center of Science and Industry (COSI) in Columbus, Ohio, there was a permanent exhibit on the ear. Part of this exhibit showed a videotape of middle-ear bone-replacement surgery. Every time we would get to that floor of the museum and see that exhibit, my mother would remind me that I would be having that surgery when I got older. I am sure many other kids might have been thrilled at the prospect of fixing a problem... but I just saw the surgery as a way to change who I was... I did not look forward to having it.

Finally the time came to see if I was a candidate for the surgery. My examination results indicated that surgery would not correct my condition – I was relieved and pleased with these results. I didn't feel any need for correction, and finally I knew I would be allowed to stay the same person I had always known myself to be. When I later learned that most members of the Deaf community don't want to have surgery to change themselves, I understood completely. The change isn't really for your benefit, its for the benefit of other people who get frustrated with your "differentness."

After graduating high school I left Ohio and its two dozen colleges and headed out of state to Rochester, New York to study Chemical Engineering. My dad was a physician and my sister and two brothers had all gone to college with the intention of entering the field of medicine professionally. My sister is the one who got closest to it: she's a mental health therapist. My oldest brother pursued Chemistry as his pre-med focus. He's now an investment analyst. My other brother pursued Biology. He's now a song writer in Nashville. So I pursued Chemical Engineering because I figured I could always focus on engineering, chemistry, or go on to med school. The one big problem with that grand scheme was that I really didn't like chemistry and beyond that, I really had no particular interest in any kind of engineering.

What I actually did enjoy was taking English courses. Shakespeare, Chaucer, and a few other writers. I also enjoyed Psychology, Computer Science, Education, and related explorations into the human experience (or simulations of the human experience through artificial intelligence – computers). I was all set to pursue a degree in Cognitive Science when I discovered American Sign Language. At first I had merely learned some vocabulary in a YMCA non-credit course taught by some NTID interpreters: no course syllabus, just a group of students who asked the interpreters how to sign English words. When we were done, we all thought we knew how to sign; but I hadn't even talked with a Deaf person yet!

One of my fraternity brothers, majoring in Electrical Engineering, was taking "Sign Communication I" as an elective which was "totally unrelated to Electrical Engineering" and asked if I wanted to come along. He was one of a handful of people who was aware that I was left-deaf (not a fact that I advertised very much at the time) and for over a decade he was the only person I knew on this planet who would move to position himself so as to be on my right side before I could begin to make those maneuvers myself. I went to the sign class with him, found that a Deaf person was teaching the class, and that auditing the class would not be permitted. I was interested in learning more and so I dropped a film class in order to make room for "Sign Communication I." Dorothy Wilkins ended up teaching all three of my sign courses at the University of Rochester. They were offered through the Medical Center and had originally been intended for hospital staff to improve their communication skills. When I took the courses, they had been "discovered" by the River Campus students and I never had a hospital employee as a classmate after "Sign Communication I" was finished. It was during "Sign Communication II" that I began to learn about ASL structure. Finally in "American Sign Language I" we explored grammatical structures in ASL, having already achieved pretty good fluency in making signs.

Somewhere during these courses I learned about Gallaudet College and decided to attend the linguistics program there after I graduated from the University of Rochester. I also applied for the Basic Interpreter Training Program (BITP) at the National Technical Institute for the Deaf and was admitted into one of the last classes of that intensive summer training program. By today's standards it seems bizarre (and perhaps in reality it truly was bizarre) but thirty people came into that program in June of 1985 and only eight weeks later, thirty people had graduated with certificates in Interpreting. By September of 1985 I had moved my worldly possessions to Washington, DC and was beginning my graduate studies in Linguistics, living with Deaf people as roommates and hall mates, learning to live without a phone, and learning more about the Deaf community than any course or library of videos and books can ever reveal.

While I was at Gallaudet I attempted to find work as an interpreter. After all, I had just graduated from the BITP and even though my instructors had told me (as they had told all of my classmates) that we needed to gradually improve our skills, I believed that I knew better. I marched right over to Gallaudet Interpreting Services and requested an interview for employment. William Isham was kind enough to allow the interview to take place. It began with a demonstration of my skills: interpret two out of the three deaf people on the video tape from ASL to English. I looked at the first segment for a few moments and then, without having even attempted to interpret any of it, I asked to see the next segment. After a few moments I realized I would not be working for GIS any time soon, but I asked if I could see the third segment, just out of curiosity. Like the previous two segments, I had not the slightest idea what the Deaf people were saying, therefore I couldn't even begin the process of interpreting. Bill gave me a copy of one of his articles and some encouraging words on how to develop my skills and I left the GIS offices determined to keep working so that some day I could come back, try again, and succeed.

I find it interesting in retrospect that while I kept telling myself over and over that I did not intend to become a professional interpreter, things kept happening which pushed me in that direction. I had applied to the BITP only because I had completed all of the University of Rochester's available credited courses in sign language and knew that I needed to get better before I went to Gallaudet. I applied to GIS because I needed money while I was at school. I applied to the Dorm Communication Center for the same reasons. At the DCC we took messages for students (phone service was very restricted in those days, only a few ground-floor students had their own phones), lent TTYs to students who didn't have their own, and interpreted phone calls (local or long distance) because the concept of telephone relay services was not yet widespread or well funded. At the DCC I was finally earning money, at least in part, as an interpreter.

In many ways, telephone interpreting is an ideal way for a developing interpreter to enter the profession. Consecutive by nature, telephone interpreting allows clarification of each source text before presenting the target text. It allows for significant preconferencing prior to placing the call (an essential element for successful pizza orders) and it reveals the different levels of patience and cooperation between people who know the deaf person (such as friends and family members) and people who don't (such as taxi dispatchers and auto mechanics). It was through a coworker, after we had both graduated, that I actually entered the world of simultaneous interpreting in 1987. Rhonda Jacobs asked me to help interpret a rather fast-paced graduate-level course and I agreed to help out as best as I could.

In those days, team interpreting meant "you read your book while I interpret, then I'll read mine while you interpret." I got a surprising amount of reading done while being paid to interpret. As I worked with many different interpreters at the University of Maryland I saw that we all understood the same principles: work in half hour shifts, don't pay too much attention to the working interpreter during your "break" and don't talk about the work too much when you're done.

A few years later, Richelle Hammett, the new coordinator of interpreting at the University of Maryland, was scheduled as my interpreting team member. I expected that she would probably review and assess my skills. On the first night of our work together I volunteered to interpret the first "shift" and she had her notepad out and wrote throughout that first half hour. Each time she put the pen to paper I wondered what I had just done wrong. I really tried to do my best, my most complete and accurate, interpreting. She just kept writing. Then after the first thirty minutes were done we switched, but she had left her notepad sitting on the desk. I tried not to look at it and then I noticed that at the top it said "Hi Brian!" I kept reading and the first page or so was just a nice note to me about how she was glad to be working with me and "isn't this an interesting class?" and so on. The rest of her notes were more of a loose outline of the topics discussed, occasionally with questions about the meaning of a technical term, but with very little feedback about how to improve my interpreting and no indication that I had done anything wrong. When I was done reading, I realized that I needed to keep up the same kind of notetaking; I wasn't going to be reading the book that I had brought with me.

Soon after this introduction to true team interpreting I had a different assignment with another "enlightened" interpreter. Eric Deemer helped me understand some of the finer points of team interpreting. I came to understand that perhaps instead of working for strict time periods, we should instead work until we needed to switch. This meant that we had to pay attention to each other's work, we had to monitor whether the

interpretation was accurate and whether the message was still being produced with clarity. We might go forty minutes each at the beginning of a three-hour class and be switching at fifteen minute increments near the end. We would sit and discuss the process when we were done... sometimes for forty-five minutes or more. These were revolutionary ideas to me at the time; and they also represented my first steps into true professionalism. Around this time I took and passed the RID certification exams for interpreting (CI) and "transliteration" (CT). I continued to work as I had for several years at Gallaudet, teaching English and doing research with the Gallaudet Research Institute. I eventually stopped the teaching part during the last year of the GRI research project. Then the research project ended and I was among eight research associates looking for new research projects. I didn't find one; and so in October of 1990, after all of those years of trying not to be a professional interpreter, I had actually come to the point in my life that that's exactly what I had become because all my other labels of professional status (teacher, researcher) had disappeared.

From 1990 until 1994 my primary profession was interpreting. I continued my studies and completed a variety of coursework at the University of Maryland, Georgetown University, and more courses at Gallaudet. I taught remedial English to international students at the Northern Virginia Community College. In 1993 I completed my second masters degree (from the University of Maryland) and started looking for other opportunities to serve the interpreting profession. By August of 1994 I had moved my family to Pittsburgh, PA to begin coordinating and teaching at the Interpreter Training Program at the Community College of Allegheny County (CCAC).

0.2 The Book

The notion for this book began about the time I began teaching interpreting at CCAC. I found I had to develop a significant amount of my own material for my students because there were no existing books which accurately described linguistic principles in an appropriate way for undergraduate students studying interpreting. After many years of working on committees with RID, I had come to understand many of the principles of RID's national certification exams and worked toward clear descriptions of the process. The definitions of interpreting versus "transliteration" in particular required intensive comparisons of the expectations for each exam. Prior to 1995, RID certification candidates for the CT exam were told to refer to Frishberg's Interpreting: An Introduction for a definition of the process of "transliteration." Frishberg's definitions included the use of Manual English Codes, signed English, and English-like signing:

> "Sign language interpreters have used the term 'transliteration' to refer to the process of changing an English text into Manually Coded English (or vice versa). An interpreter who transliterates, also called a 'transliterator,' gives the viewer English in a visually accessible form." (Frishberg, 1990:19).
>
> "Certificate of Transliteration (CT): ability to transliterate between signed English and spoken English in both sign-to-voice and voice-to-sign." (Frishberg, 1990:96).
>
> "Transliteration Certificate (TC): ability to transliterate between English and an English-like signing." (Frishberg, 1990:97).

In 1995 a pool of RID performance examination raters were asked to generate a definition of interpreting and "transliteration" based on the performances of passing and failing candidates for both performance exams. The results of their work was finalized in December of 1995 and published in the February, 1996 RID Views:

> *What is "Transliteration"?*
> Many candidates for the RID Certificate of Transliteration (CT) examination have requested guidance in an effort to understand the goal of the English-to-sign portion of the exam. Raters have reviewed the minimum standard in addition to various performances of passing and failing candidates, and have agreed upon the following description of rating criteria for the current performance evaluation for the Certificate of Transliteration.
>
> The three broad categories of variables that Raters evaluate for the English-to-sign portion have been described: Grammar and Vocabulary, Processing, and Mouth Movement Patterns.
>
> *Grammar and Vocabulary*

• Use of space for role taking (characterization)
• Use of space for subject-object agreement and verb inflections
• Conceptually correct sign choices (based on meaning rather than form)
• Some amount of "initialization" but only to the extent that initialization is used by deaf adults (not to the extent of Manual English Codes).

Processing
• Lexical to Phrasal level[s] of processing, e.g. ranges from "word meaning for word meaning" to "more than words, less than sentences"
• Some restructuring or paraphrasing for clearer conveyance of meaning
• Some additions of ASL signs which enhance the clarity of the visual message (modals, such as CAN[, WILL, and MUST placed at the end of sentences], classifier constructions, indexing, and listing structures)
• Detailed English morphology (e.g. manual English coding of "ing," "ed," and the copula) which is conveyed on the mouth but not with manual signs.

Mouth Movement Patterns
• Cohesive English sentences are visibly presented on the lips, either as exact words from the original text or as English paraphrasing of the original text.

Finally, overriding all of these details is the requirement that the target message resulting from the transliteration process remains true and accurate with regard to the source text. There should be no substitutions (missing a concept from the original and replacing it with a different concept) and no significant omissions (all of the main points and nearly all of the supporting details of the source text should be reflected in the target text).
In order to gain further guidance, the RID Raters recommend that candidates for testing read Elizabeth Winston's article, "Transliteration: What's the Message?" [Winston, E. 1989. In The Sociolinguistics of the Deaf Community, Ceil Lucas, Ed. San Diego, CA: Academic Press] The description of transliteration in this article is determined to be an accurate description of the performance of a successful candidate for the Certificate of Transliteration performance examination. (RID Views, February, 1996:24)

It takes a long time to write a book. I've revisited every chapter many times. Every Unit in the book has expanded and shrunk multiple times as I juggled ideas within and between chapters, sometimes pulling information out into two chapters, then reconsidering and putting the two pieces back into one. In the end I decided that Four Units, each with Five Chapters would provide some sort of balance which would allow a fairly comprehensive overview of the profession of interpreting while allowing teachers the flexibility to figure out which parts of the book would usefully apply to their courses. I hope it presents an organized and uncomplicated explanation of interpreting and related kinds of work. If you don't think it does, please let me know... I consider this work as perpetually "in progress."

0.3 The Summary

This text was made possible by encouragement from the RID home office, particularly Clay Nettles, Deb Stebbins, and Stuart S. Nealy. Thanks go also to my parents, Charles and Phyllis Cerney, for their support in so many ways; and to my wife, Janet Cerney, and our children, Tasha, Anna, and Alosha, who allowed me the time to do revisions at home and at work. I also appreciate the comments of my students, the first guinea pigs of this effort, who helped me to clarify and improve the text as I handed out chapters to them one by one and then handed out quizzes which tested them on each chapter as part of their course grade (please accept my apologies).
To you, the reader: no book can ever completely encompass any topic... please take advantage of the suggested activities at the end of each chapter and check out the readings in the bibliography to more fully explore the topics raised within these pages.

APPENDIX F1 – Communication

Communication

Rasmus took a step back from the art work hanging on the wall. "What does this say to you?"

Timoth glanced up from the theory book. "What does what say to me?"

"This print by M.C. Escher. I just bought it at the store. I love the way Escher draws us into his world. See how the globe reflects the hand that is holding it? But we also see the image of the person attached to the hand as he looks at the globe and we also see the room he's in: the object, the person, and the physical surroundings. And here we are observing all of it, understanding it on our own terms, within our own physical surroundings. In fact, the print itself is part of our physical surroundings now."

"What are you talking about? Its just a piece of art work. Sure, its interesting, but it doesn't 'say' anything to me."

"Ah, Timoth. You see the world but you do not understand it. Here is an opportunity to reflect on your chosen field of work as an interpreter; but you refuse to learn from it. You see the object and yet you ignore it. How will you make your own progress if you do not incorporate the progress made by others before you?"

Timoth placed a marker in the theory book and closed it. "Now wait a minute. I thought we were talking about your new piece of art work. How does a piece of art help me to become a better interpreter? Are you trying to tell me that Escher was an interpreter?"

"In a sense, yes. He understood the world around him and documented his perspectives in his art with the understanding that others would then interact with his work."

"Interact? Its just a print: it's ink and paper. How can I interact with a document?"

"What's that thing in your hands right there?"

"This? This is my book, 'The Interpreting Handbook'. What does this have to do with art?"

"Does the book speak to you in any way? Does it communicate anything to you?"

"Well, it's not exactly an audio book, if that's what you mean. But it's giving me information about the profession of interpreting... so, yes, I guess it communicates useful information."

"So a book can communicate to you. But who is doing the communication?"

"Who is doing the communication? Um.... well, I'm the one reading it."

"Yes, and I hope you keep on reading; but still, communication requires two. Who is communicating with you?"

"You mean the author?"

"Sure... the author. But the author is not in this room, is he?"

"Well, no, of course not. But his work – this book – is in the room."

"And that work 'speaks' to you in some way?"

"Sometimes it does... sometimes I'm not quite sure what he's getting at. What are you getting at?"

"My point is that we communicate in different ways. What we do, how we do it, how we arrange our physical settings, the books we read, the art we look at, the things we create. Everything about us communicates something to everyone we encounter. Even if they encounter the things we have created years later, we continue to communicate even to people we will never meet."

"So, in other words, everything communicates something to us, even if we don't know the creator?"

"Well put. Now, keep on reading."

Chapter 1
Communication

"Make Sure You Know The Rules Before You Play Someone's Game." - 1997 BC

1.0 Overview

This section provides basic definitions for communication and language. The value of defining these terms is to understand the essential components of the work of interpreters, translators and transliterators. The technical term for using language to talk about language is *Metalinguistics*. The words "noun", "verb" and "adjective" are excellent examples of metalinguistics because they are only useful as descriptors of language use. The whole explanation of the linguistic pyramid in the next section can be considered one huge metalinguistic task. The value of being able to use language to talk about language is that it allows us to discuss the rules of correct language usage. One of the advantages of metalinguistic ability is that it helps children (and adults) to learn second languages (O'Malley & Chamot, 1990). Another advantage is it allows us to analyze interpretations.

Many people who perform interpreting work have never explored linguistics, and may even feel overwhelmed by the idea of having to learn about linguistics. This section is designed to be a friendly tour of how languages work. Once interpreters understand the main ideas, they can further explore those elements which interest them the most on their own. We will begin by defining the difference between communication and language. We will then identify three distinct forms of language. Next we will explore seven interactive levels of language. We will conclude with some explanations about language variation and the ability to use language to describe language.

1.1 Communication and Language

Before we can begin talking about working between two languages we must investigate the definition of communication, the definition of language, and the difference between communication and language. Most (if not all) animals have the ability to communicate and some forms of communication are more complex than others. Communication systems are the use of symbols to convey information between members of a community. The symbols may be sounds, grunts, spoken words, or bird songs. The symbols may be posturing, such as placing hands on hips, spoken or signed words, or the dance of honey bees.

What does it mean to communicate? Communication is one mind's perception of a message which another mind has expressed. It can be immediate such as seeing someone smile or saying hello. It can be delayed such as seeing an arrow painted on a tree or an old sign which describes an historical landmark. Communication takes place between living things, but it is not limited to humans. Most (if not all) animals have the ability to communicate. Animals can indicate that they are angry or injured. They can stake out territory, seek and find mates, issue warnings, and indicate submission. Some forms of communication are more complex than others: Many mammals are able to growl and bare their teeth to communicate a threat or warning to a potential foe. Bees can indicate sources of pollen through complex dances. Whales are said to produce a new complex song every year which is shared throughout their species. Humans who share no common language can bargain and negotiate trades with each other. Communication simply requires at least two minds and the means of expressing and perceiving information.

Communication is a broad category which includes all possibilities of language; but communication includes much, much more than only language. Animals have the ability to communicate at least within their species and generally between species. Humans, being a specific kind of animal, share some of these communication abilities; but humans are able to move beyond mere communication when they use language. Figure F1.1 below shows the relationships between animal communication, human communication, and language.

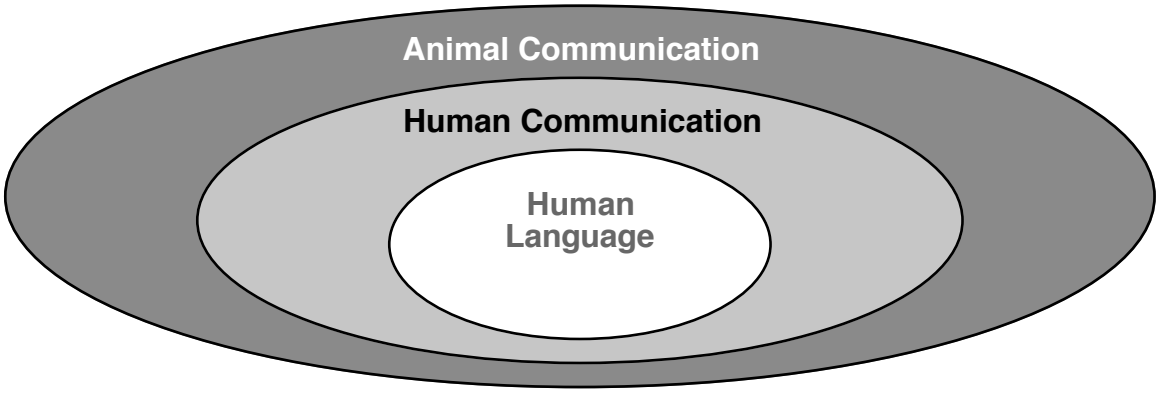

Figure F1.1 – Animal & Human Communication and Language

We will further explore the differences between communication and language in Chapter Two. For now, however, we will continue to explore the more general category of communication: one mind's perception of a message which another mind has expressed.

Communication begins with the intentions to communicate. This requires intelligence and therefore a brain, or mind, capable of thought and knowledge. The mind's intention, or meaning, may be either Conscious or Unconscious. Conscious intentions, where the mind is aware of its own intentions to communicate, are the most easily recognized. Requesting assistance, issuing a warning, or expressing affection are all possible conscious intentions for communication, especially when words are used such as "give me a hand, please", "back off!", or "you're so sweet!"

Unconscious intentions, where the mind is not directly aware of its own intentions to communicate, are less obvious. A request for assistance may be expressed as simply as a glance toward a nearby person. A warning can consist of a fierce stare. An expression of affection may be communicated by the dilation of pupils (of the eyes) when a certain person comes into view. Unconscious intentions may also be expressed in the vocal inflections or facial expressions which accompany a message composed of words. People who are lying often find it difficult to make direct eye contact with the people they are lying to. A liar is usually not aware of the fact that his body is warning us not to believe what he is saying. In many cultures a nodding head is an indicator of truthfulness. Shaking one's head side to side while strongly affirming a statement (such as is commonly seen in advertising, eg "I use it every day!") may be a result of the person's subconscious directing part of the expression of communication. Their words say "I use this product every day" but their body language says "I am not telling you the truth." A child may state that she is "not scared" but her vocal inflection and facial expression reveal that she is actually quite frightened. Our unconscious mind is almost always expressing our emotional state. Our conscious mind provides the ability to communicate things beyond emotion.

Four components are always present in any act of communication: 1) Background Knowledge of Participants, 2) Expressive Modalities of Communication, 3) Perceptive Modalities of Communication, and 4) Physical Context.. An understanding of each of these variables will make us more aware of the communication which can co-occur with language and help us understand the truthfulness or emotion surrounding a message. Background Knowledge can help us to understand the topic of discussion, to make predictions about how it might be organized, and to know when communication is inappropriate for the situation at hand. A deeper understanding of Expressive Modalities of Communication may help us determine the goals of the communication. A person may gesture to indicate that an unseen person is able to overhear the communication in a room (such as one's boss) while the conversation is conducted with the intention that the unseen person will "overhear" it. A person's facial expression and body posture may indicate extreme anger while their words are produced with amazing calm. Knowing about perceptive modalities helps us to analyze physical settings and eliminate potential sources of noise or disruption to the communication. It also helps us to understand potential mis-perceptions of information. Physical Contexts shape all of our communication not only because of potential

noise, but because certain settings are restricted to certain kinds of communication such as sermons in a church or cheers at a basketball court. The next segments of this chapter further explore these four primary components of communication.

1.2 Background Knowledge

Success in communicating the mind's intention will depend on the person's Background Knowledge which includes the following four kinds of knowledge:
1) knowledge of how to communicate,
2) knowledge of what can be communicated,
3) knowledge of others who are able to understand the communication, and
4) knowledge of how the physical environment will impact the communication.

Figure F1.2 below provides our initial graphic representation of the mind and lists the variables influencing communication, which are all contained within the mind: its two levels of self-awareness (conscious and unconscious), and the four kinds of knowledge which influence communication. An interpreter keenly aware of these factors will be equipped to perform the best possible interpretation for the topic, setting, and participants.

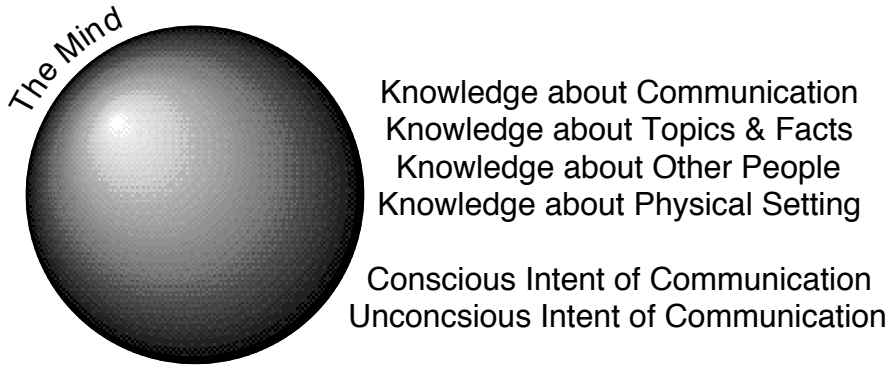

Figure F1.2 – The Mind

A mind which does not yet know these things can still communicate; but communication is more successful if a mind is aware of all four kinds of knowledge. A newborn child instinctively cries when hungry or uncomfortable. The child has no significant knowledge in any of these four areas and yet succeeds in communicating general distress. It is important to note, however, that the caretaker must be able to perceive the newborn's cries and also must have enough knowledge about communication to recognize the child's cries as meaningful: it is still up to the caretaker to understand the communication correctly. Within a month the child will have much more knowledge about communication and can express much more specific requests (still without words) which a caretaker can more efficiently understand. Every communication experience in life builds on our knowledge of how we can communicate.

Background knowledge may be shared. If two participants in communication share significant background knowledge, then they will require less new information in order to effectively communicate. This is best exemplified by "in-jokes" and situations where one "just had to be there to understand." If I mention that an actor's words told me one thing in a commercial but her body movement told me another, then I expect that you will understand what I mean if you already read section 1.1; and that if you didn't read that section, you might be very confused.

Background Knowledge and Culture overlap significantly. The culturally appropriate behaviors known to a community of people are a part of their Background Knowledge; but Background Knowledge extends beyond Culture. Culture is the set of shared knowledge and values within a community, but Background Knowledge is the set of knowledge and experience that any individual has. Background knowledge includes all the knowledge of one's culture; but it also includes information known about other cultures, and indeed every piece of information, both substantial and trivial, known to each communication participant. Not all of that information

is equally active all of the time. We make assumptions about what a message likely means based on recent topics of communication, past experiences with the person generating the message, our estimate of the other person's background knowledge, and, of course, the physical context.

Without the common background knowledge of what a phone flasher is, we might not even see any relationship between a flashing light and the actions of a deaf person who suddenly stops all other activity and begins typing on a TTY. Likewise, the use of the word TTY in the previous sentence also assumes a shared background knowledge between the reader and the author. People of distant cultures may have little overlap in their background knowledge. Some people living in equatorial climates may have no understanding of the concept of snow. Many people living in particularly oppressive non-democratic countries may have no understanding of the concept of "rights".

1.3 Semiotics - The Nuts and Bolts of Communication

Before we can begin to communicate we must have a means of doing it. Semiotics is the study of all possible communication systems. Semiotics includes the study of language, but also includes so much more. Gesture, body posture, proximity, odor, taste, and sound may all communicate things not only among humans but animals as well. Any possible means of communication – a raised eyebrow, a handshake, the clearing of one's throat – can be analyzed and understood; but each may take on distinct appropriate uses. One culture may use an upward palm gesture to call another person closer, while other cultures may do nearly the same gesture for the same reason, except that they produce the gesture with the palm facing down. Producing the same gesture but with only the index finger moving may be appropriate to call children closer, but an adult may understand the same gesture as an insult.

1.3.1 Expressive Modalities of Communication

We use the term "modality" to refer to any medium of communication. There are five basic expressive modalities of communication: image, odor, sound, taste, and texture. All avenues of expressing communication require muscle movement and typically include things such as lungs, vocal chords, facial muscles, and limbs. The cries of newborns are expressed through movement of the diaphragm, which moves air out of the lungs, through vibrating vocal chords and through an open mouth. In addition, crying newborns are likely to have contorted facial expressions and are also likely to wildly flail their arms and legs. In this way crying newborns are multimedia presentations, simultaneously expressing communication in numerous ways.

Muscle movement requires nerve connections to the brain. Various diseases and medical conditions can disrupt the nerve connections (such as Cerebral Palsy or Parkinson's Disease) or deteriorate the muscle's ability to move effectively (such as Muscular Dystrophy). Such conditions, therefore, can disrupt not only people's ability to move comfortably but also their ability to express communication. These kinds of medical conditions which impede communication ability are often misperceived as a mental deficiency. This perception means that many people will not have enough patience to allow the time for effective communication. If you find yourself interpreting in a situation where a consumer has physical difficulties expressing communication it will serve you well to inform the other consumers that it will take time for you to do your work effectively and accurately.

1.3.2 Perceptive Modalities of Communication

As you might suspect, there is a one-to-one correspondence of expressive modalities to perceptive modalities. All are related to the five senses: hearing, sight, smell, taste, and touch. All senses require nerve connections to the brain. Sight also requires muscular control (not only to direct the eyes to the source of communication, but also to bring it into focus). The multimedia presentation of the crying newborn will likely be perceived first by hearing, then by sight (and perhaps smell!), and finally by touch. The newborn may perceive that you are providing food by using all five senses: seeing a bottle, smelling and tasting the formula, feeling the texture of the nipple, and hearing the sounds made as liquid is drawn into the mouth.

Various diseases and medical conditions (such as rubella or a sustained high fever) can disrupt the nerve connections of sensation or deteriorate the organ's ability to activate the nerves effectively: Retinitis Pigmentosa or Macular Degeneration damages the eye; ossified bones in the middle ear, a damaged cochlea or the absence of fluid within the inner ear will disrupt hearing. Such conditions, therefore, can disrupt a person's ability to perceive communication. A blind person would perceive the newborn's cry through the sense of hearing, a deaf

person would perceive it through sight, and a deafblind person would perceive it through touch if they were in contact with any object vibrating as a result of the child's cry or movement. As long as one of the newborn's senses remained undamaged it would likely still understand when it was being fed.
Disruptions to a person's perceptive abilities, like disruptions to expressive abilities, are often misperceived as a mental deficiency. Many people will try to help a person who is disabled, but the person should always be consulted as to whether they wish to have any help at all. No matter how many perceptive modalities are disrupted, the mind perceiving the communication must still be respected.

There are additional challenges for interpreters working with consumers who cannot perceive all of the modalities in which communication is expressed. Not only does the interpreter have to work on communicating the linguistic information, but also the non-linguistic, semiotic elements of the physical setting. Deaf consumers need to be informed of auditory environmental stimulus. Blind consumers need to be informed of visual environmental stimulus. Deafblind consumers need to be informed of both kinds of information.

1.3.3 Expression and Perception of Non-linguistic Communication

Images and Sight allow for visual communication. Non-linguistic visual communication includes eye contact, facial expressions, body postures, gestures, pictures or drawings, and written or printed symbols. The physical environment is largely perceived through sight as well. Communication about the physical environment to another person can be accomplished as simply as making eye contact with a person and looking at an immediate danger to that person (such as an oncoming car).

Visual information should be conveyed to blind people as part of interpretations. The body posture and facial expression of people can provide significant input to understanding a message. When English words such as "this" and "that" are used, they are often accompanied by gestures which identify the referent of each word. These referents will need to be fully identified for the blind consumer to understand the message correctly. Knowing that a person has just raised her hand will help explain why a lecture comes to a sudden halt and the teacher says "Do you have a question?"

Odors and Smell allow for olfactory communication. Olfactory communication is generally non-linguistic and includes perfumes and colognes, body odors, and aromas from cooking or offering food. All physical environments will have some odor (or perhaps a lack of odor) associated with them. Our attention to the odor may be minimal. Odor is more likely to play a role in communication through perfumes and food aromas. The smell of a fresh apple pie may be perceived as an invitation to enter the kitchen.

Sound and Hearing allow for auditory communication. Non-linguistic auditory communication includes grunts, squeals, sighs, hiccups, humming, music, footsteps, rustling paper, banging doors, and kicking furniture. Sounds permeate almost every physical environment. Even very quiet rooms often have some hum or hiss such as from electrical lights or wind. A sigh may be an indication of frustration. Footsteps may indicate that someone is about to knock at the door. Rustling papers may indicate nervousness. Banging doors and kicking furniture may indicate anger. If an interpreter working with a deaf consumer does not provide access to these sounds, then the consumer is not receiving the same communication as hearing people who are in the room. These auditory environmental stimuli may seem trivial, but I have seen many instances where a door being slammed shut was the impetus for an angry lecture about a person's attitude.

Think about the auditory information that is taken for granted. If someone knocks at a door, it is perfectly logical for someone inside the room to approach the door, ask who is there, and perhaps open the door. If you didn't hear the knock, it would seem bizarre that someone in the room arbitrarily decided to walk to the door, talk to it, and suddenly cause a person to appear at the moment that the door was opened. Knowing that there is a knock at the door clearly helps explain why a person is standing there when another person decides to open it. Similarly, a person who is continuously coughing in the back of the room communicates several things with every cough: 1) the person is not feeling completely healthy, 2) the person may be ill, 3) the person is still in the room and has not yet left. If the person decides to leave, you would understand that they may wish to get a drink of water and that they are not being deliberately rude. If at some point you are expected to meet and shake hands with each person in the room you may understand why the person does not shake hands with you (or you may understand that you might wish to wash your hands if the person does shake hands with you). If at some point

another person asks the cougher to leave the room and get a drink of water, you will understand such a request to be fairly normal.

Taste allows for gustatory communication. Gustatory communication is limited to tasting or consuming foods, beverages, and non-food items. Tasting spoiled food may communicate that one's host has either been careless or perhaps even rude.

Touch and Texture allow for tactile communication. Non-linguistic tactile communication includes holding hands, giving a hug, pats on the back, slaps on the buttocks, tickling, massaging, punching, and scratching. Certain aspects of physical environments are perceived tactually including the temperature of the room. A warm room in the winter may indicate that one's host is concerned for her guests and wishes to ensure they are comfortable.

Image, Sound, and Texture are the three most easily manipulated modalities for expressing communication. Figure F1.3 below overlays the abilities to express and perceive communication with the mind.

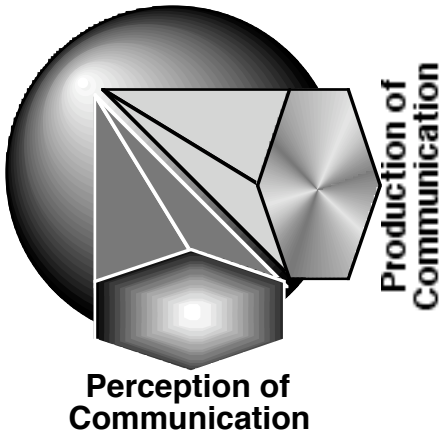

Figure F1.3 – The Communicating Mind

Sending and receiving communicate requires a means of doing it. *Semiotics* is the study of all possible communication systems. Semiotics includes the study of language, but also includes so much more. Gesture, body posture, proximity, odor, taste, and sound may all communicate things not only among humans but animals as well. Any possible means of communication – a raised eyebrow, a handshake, the clearing of one's throat – can be analyzed and understood; but each may take on distinct appropriate uses. One culture may use an upward palm gesture to call another person closer, while other cultures may do nearly the same gesture for the same reason, except that they produce the gesture with the palm facing down. Producing the same gesture but with only the index finger moving may be appropriate to call children closer, but an adult may understand the same gesture as an insult. Finally, there must be another mind to perceive the communication productions and perhaps produce a communication response.

1.4 Physical Context

The Physical Context is the setting for the communication and surrounds the expression and perception of communication. Physical Context will always affect the clarity of the communication and also influences how each mind understands the communication. The Physical Context absorbs and reflects the communication. Sound waves will echo in large empty spaces or be obscured by the whirring of a film projector or an electric fan. Light waves remain bright in empty lightly colored rooms. Low light makes visual perception of an image difficult but bright, glaring light can be equally disruptive. Backlighting provides such a contrast of high and low light that people can get headaches from the strain of eye muscles.

All communication expressed by one person becomes part of the Physical Context. Each communicator must be able to perceive some form of the Physical Context along with the communication expressed by another person.

In addition to perceiving the physical context and the communication expressed by another person, both communicators are generally able to perceive (monitor) their own expression of communication. In other words, hearing people using speech to communicate, will perceive their own speech at the same time that they produce it. It is actually through this self monitoring that infants modify their own speech production when babbling. It is in part due to this lack of self-monitoring that deaf children generally have difficulty matching their speech patterns to the hearing people around them.

The perception of the communication may use different senses, especially between deaf and hearing people: Deaf people communicating through speech sounds will perceive their own expression of communication primarily through the sense of touch (feeling the vibrations of their own throat and head as they make spoken sounds) while the hearing people will not likely feel the resulting sound so much as hear it. The hearing people will most readily hear their own communication if they also speak (they might also notice the vibrations in their own bodies but are likely to ignore this information) while the deaf people will mostly depend on vision to understand the physical movements of the face which produced the sound, rather than upon the sounds themselves. This mismatch of expression and perception of communication leads to significant difficulties and frustration. Communication will be most natural and successful if both the sender and receiver perceive all of their communication through the same senses. Figure F1.4 below shows the communication links between two minds within a Physical Context.

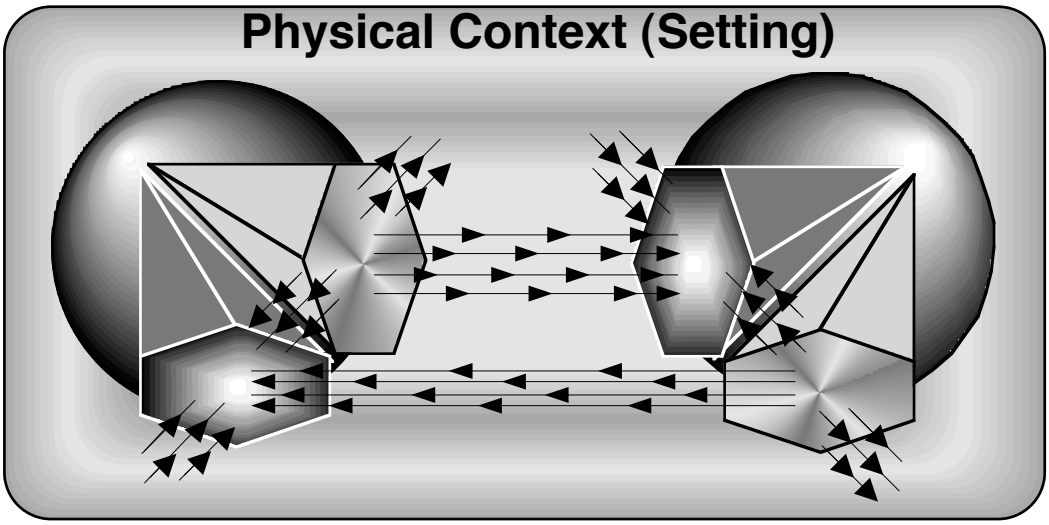

Figure F1.4 –Communicating Minds Within a Shared Physical Setting

Physical Context, or the setting for the communication, is the first most important variable to understand for any issue of communication. Every act of communication occurs within a physical setting. Generally, both participants of the communication will share the same setting, but through such modern advances as satellite communications, telephones, and books it is now possible for two participants to communicate in distinct physical settings. Communication through recorded media (such as writing, and more recently through audio, video, and data recordings) allows each perceiver of the communication to be in a distinct setting; and also allows the communication to reach across great expanses of time. Even so, each participant will be at least aware of her own physical environment and may also be aware of each other participant's environment as well. For the remaining, more mundane situations of normal, everyday communication the physical context may carry great significance as part of the overall communication. The fact that humans put a great amount of effort into creating distinct physical environments certainly contributes to the impact these environments have upon communication. We build offices, homes, cars, public buses, religious centers, hospitals, funeral homes, warehouses, retail centers, bedrooms, and bathrooms. We generally acknowledge that certain kinds of communication are more or less appropriate for each of these settings.

Beyond just the structure of the physical surroundings is the activity which is taking place within the setting. Religious centers are generally associated with ceremonies but may also house social gatherings and bingo games. Lecture halls may host prestigious international guests, weekly chemistry lessons, or weekend film screenings.

Within the Physical Context of a lecture being presented in a lecture hall, or of a ceremony being performed within a chapel, we would generally expect that side conversations should be whispered. We would also expect that there might be questions from the audience at the end of the lecture but that there should be no questions from the audience during a religious ceremony. These expected behaviors overlap with the first primary factor of communication: Background Knowledge.

So each of the primary factors (Background Knowledge, Expressive Modalities, Perceptive Modalities, and Physical Context) combine and overlap with each other to make up communication. But what of the intentions behind the expression of communication and the meanings derived upon perceiving communication? These elements fall in the realm of Pragmatics.

1.5 Pragmatics - Doing Things Through Communication

Not all communication seems to serve a purpose, but in general terms, communication accomplishes goals. The goal may be as simple as having another mind pay attention to your own (such as a cat repeatedly brushing up against your leg and purring until you pick up the cat). The goal of the cat is to be picked up. The semiotics of the cat's communication include brushing up against your leg and purring. One possible result of this communication is that you pick up the cat.

The goal may be as significant as a declaration of war. The goal of the members of a governing body would be to initiate a process to approve the funding and implementation of war. The semiotics would include the writing of a document directly declaring war upon another government or group. The result would be that a state of war would have been initiated. While Semiotics is the study of all possible communication systems, Pragmatics is the study of the goals and results of communication. The goals are basically the action desired by the mind expressing communication. The results are the resulting action of the mind(s) perceiving the communication. The desired action can also be understood as meaning.

1.5.1 Meaning Versus Communication

Meaning is independent of communication. This may seem an odd statement, but it is not necessarily obvious. A gust of cold wind may mean that a cold front is on its way; but the gust of wind could only be considered communication if your religion or philosophy provides for the mind of a Higher Power to have been the one using the wind to communicate to you. The mind may find many meaningful aspects of the physical context, but only those manipulated by another mind can be considered as communication. Likewise, many efforts at communication may exist within a physical context (such as a signpost obscured by overgrown weeds) which will still fail to communicate if another mind fails to perceive it. Even when perceived, an attempt at communication may not be understood fully if the perceiver does not know who the expressor is (such as carved initials on a tree trunk) or if the perceiver does not know the intention of the communication (such as a child's picture on a refrigerator). The perceiver's mind will use the physical context and background knowledge to determine the meaning of the attempt at communication.

Communication is the understanding (by one mind) of a message which another mind has expressed; but what one mind intends need not coincide with the other mind's understanding. A gesture pointing toward a hornet nest may be intended as a warning. One perceiver may understand it as a warning, while another perceiver may understand it as a request to move toward the nest. Each perceiver has perceived the message; but each has determined its meaning differently. The two minds have both communicated with the initiator's mind, but each mind has understood a different meaning.

Communication merely provides a link between minds; meanings exist separately within each mind. The meaning of the initiator's mind might have no similarities at all to the meaning understood by the perceiver's mind; and therefore, meaning is independent of communication. This suggests that an interpreter is responsible

only for their own understanding of the message. It is impossible to fully know what another person understands through communication. If you are asked whether a consumer understands another consumer 's meaning, the only honest response is to verify your own understanding of the meaning and describe your attempt to express that meaning to the other consumer.

1.5.2 Expression and Perception Versus Meaning

Expression and perception of communication are likewise distinct from meaning. One person may say "It's hot in here" and wish the other to do something about it (such as turn on a fan or open a window or turn off the heat, etc.) Another person in the room may perceive the communication and yet not understand the first person's intention. This other person may merely agree with the first person but take no action. Communication has taken place, clearly influenced by a shared physical context, but the intention (or meaning) of the communication was still not understood in the same way by everyone there. This demonstrates that the words which are used in communication don't actually contain any meaning at all: it is the perceiver's mind which determines a meaning. Meaning is in the mind and communication reaches between minds; but each mind is always free to determine its own meaning or even if there is any meaning at all. Two people can look at the same line of clouds in the sky and one may understand that it means a cold front is coming while the other merely sees clouds. Both minds have perceived the clouds, but only one has attached any meaning to their perception.

1.6 Variation in Communication

We have already identified communication as one mind's perception of a message which another mind has expressed, but there are many ways that such communication can take place. Most often we intend to communicate with a specific person or a specific group of people; but it is often the case that other people are also able to perceive our expression of communication. In restaurants it is common to overhear the conversation at the next table. Professional spies (and amateurs too) intentionally eavesdrop or spy upon the communication of others. Communication between people may be intentional or unintentional.

Both the means of expressing and perceiving communication can function simultaneously in face-to-face communication; but other forms of communication (exchanged letters or E-Mail, telephone calls via TTY or relay operators) may limit the ability to simultaneously express and perceive communication. These forms of communication become consecutive: one party must complete a portion of communication before the other party can reciprocate. Communication may be immediate or delayed.

Some forms of communication are only one-way, such as most television broadcasts, street signs, billboards, and the writings from deceased authors. One-way communication, like consecutive communication, also prohibits the simultaneous expression and perception of communication between two minds. In fact, it restricts one mind to only perceiving the communication of another mind. In this way, it is possible for communication to be interactive or only one-way. We will now further investigate these three variables: Intention, Immediacy, and Interactivity. Each of these three variables has three general levels which we can categorize as being positive [+], negative [-], or mixed [+/-].

1.6.1 Intention Versus Incidence

Intention is the expression of communication toward specific perceivers. Was the communication intended to be sent to all the people who received it? A private conversation would be intentional [+ Intention] between two people engaged in it, but might be incidentally overheard [- Intention] by a third party. This happens often in restaurants where people sitting back to back in a series of booths may be able to overhear the conversation going on just behind them. The people expressing their communication intend it for each other, but not for the person in the next booth. Some communication fits somewhere between being intentional and incidental: A public performance of a play or lecture may not be intended for any one specific audience member, yet it is intended to communicate with an audience [+/- Intention].

Interpreters face this variable every time they interpret. On one hand, they are incidental over-hearers of the message because the communication is intended for the interpreter's consumers, but not for the interpreter. But of course, the interpreter is physically present, cannot be ignored and plays a very active role in the room. When the communication shifts to be intentional to the interpreter and only incidental to the consumers, this creates a serious disruption. Interpreter's are often asked personal questions or for advice by either consumer, often in the

midst of interpreting. Ignoring intentional communication creates the impression of rudeness and may foment an uncooperative attitude among the consumers. Participating in a lengthy exchange with a single consumer will alienate the other consumer and provide an adversarial atmosphere. The interpreter's challenge is to acknowledge the intentional communication and return the communication to an exchange between the consumers as soon as possible.

1.6.2 Immediate Versus Delayed Access

Immediacy is the perception of communication at the time it is expressed. Is the communication received at the same time it is created, or is there a delay? Face-to-face interaction is the most immediate form of communication [+ Immediacy]. Written communication can be significantly delayed, especially if you are reading a book written hundreds of years ago [- Immediacy]. Likewise, audio and video recordings provide a delay between the creation of the communication and its comprehension. Attending an interpreted lecture may be both immediate and delayed: the events of the lecture (presenter's body posture, use of visual aids, etc.) can be seen immediately while the information may be delayed by several seconds for simultaneous interpreting and even longer for consecutive interpreting [+/- Immediacy].

Interpreters who have immediate access to both sets of consumers may have the option to ask for clarification, but immediate communication also creates an expectation that the interpreter will not further delay the communication process. Interpreted communication will always be delayed, at least in comparison to non-interpreted communication. A short delay in access may be relatively unimportant for lectures but can become extremely detrimental for a brainstorming session or for counting votes in a business meeting. The level of need for immediacy may influence the approaches taken in providing the interpretation: either to attempt to shorten the processing time of the interpreting or to lengthen the processing time of the consumers' communication. Processing time of the interpretation may be shortened so that the resulting interpretation is less grammatical, yet understandable. Processing time of the consumers' communication may be lengthened by requesting participants take turns (eg. raising hands to be recognized before speaking) or requesting that a consecutive interpreting process be used rather than attempting simultaneous interpreting.

1.6.3 Amount of Interactivity

Interactivity is the ability of the perceiver to reply to the initiator. Is the communication one-way, mostly one-way, or two-way? Most conversations will be two-way, especially if questions are being asked and answered [+ Interactivity]. Watching information on television is generally a one-way (to the viewer) communication event [- Interactivity]. A lecture may be mostly one-way, but how the audience reacts to a joke (or fails to react to it) can make a significant impact on how the presenter proceeds [+/- Interactivity]. Other terminology which has been used to describe this difference in communication is Monologue (monologic discourse) versus Dialogue (dialogic discourse).

The concept of dialogue [+ Interactivity] can include more than two people; but the amount of interactivity may be different for multiple receivers of the same communication. A restaurant conversation will be interactive [+ Interactivity] for the people at one booth, but be mostly non-interactive [+/- Interactivity] for the person seated at the next booth (who could turn around and say something). The same conversation would be non-interactive [- Interactivity] to anyone listening to a recording of it.

The level of interactivity of the communication clearly has an impact upon the work of interpreting. Interpreters working in highly interactive settings may find it hard to provide access to overlapping communication. Non-interactive communication prevents the possibility of interrupting the communication for clarification.

1.6.4 Simultaneous Occurrence of Variables in Communication

Each of the three communication variables (Intention, Immediacy, and Interactivity) play a role in every communication situation. Interactive communication tends to co-occur with immediate communication, (such as in a face-to-face conversation); but it is still possible to have interactive communication which is not immediate (such as the exchange of letters between two friends). It is also possible to have immediate communication which is not interactive (such as watching a live satellite broadcast on television). Figure F1.5 below provides some examples of the application of these variables.

Intentional	Immediate	Interactive	Examples
+	+	+	Talking with someone, face-to-face or by phone
+	+	+ / –	Attending a lecture; Watching a play or other performance
+	+	–	Hearing your name over an airport's Public Address system; Seeing / hearing someone say hello to you on a live broadcast
+	–	+	Exchanging E-Mail with a friend; writing letters back and forth
+	–	–	Seeing / hearing someone say hello to you on a recorded broadcast; Reading of a Last Will and Testament
+ / –	+	–	Watching a live satellite-broadcast lecture or television show
+ / –	–	–	Hearing / watching a recorded lecture or performance; Reading a book; Watching a recorded television broadcast
–	+	+ / –	Hearing / watching others converse face-to-face or by phone
–	+	–	Hearing another person's name over an airport's P.A. system; Seeing someone say hello to someone else on a live broadcast
–	–	–	Reading two other people's E-mail or letters to each other

Figure F1.5 - Intentional, Immediate, and Interactive Aspects of Communication

An understanding of these three communication variables will help to identify different applications of transcommunication in a later section. The next section will further define language. The rest of this section reviews what we have learned so far.

1.7 Summary of Communication

This section has defined Communication as one mind's perception of a message which another mind has expressed. We identified language as a subset of human communication, which itself is a subset of animal communication. All communication requires at least two minds, each of which will have certain Background Knowledge. Background Knowledge consists of four things: 1) knowledge of how to communicate, 2) knowledge of what can be communicated, 3) knowledge of others who might be able to understand the communication, and 4) knowledge of how the physical environment will permit the communication to take place. Culture (the set of shared knowledge and values within a community) is part of Background Knowledge. The intent of communication additionally may be either conscious or unconscious.

All communication takes place within a Physical Context, which can directly influence both the Expression and Perception of communication. Communication is expressed and perceived through matched sets of expressive modalities (which require muscle movement controlled by nerves) and sensory perception (which generally require only nerve connections). The five sets are Image-Vision, Sound-Hearing, Texture-Touch, Odor-Smell, and Taste-Taste. These matched sets of expression and perception are a significant part of Semiotics, which is the study of all possible communication systems.

While semiotics provides the means of communication, Pragmatics is the study of the goals and results of communication. Each mind is free to determine its own meaning and therefore meaning is independent of communication. Therefore, meaning is independent of the expression and perception of communication. Three additional variables significantly influence how communication takes place: 1) Intention – the expression of communication toward specific perceivers, 2) Immediacy – the perception of communication at the time it is expressed, and 3) Interactivity – ability of the perceiver to reply to the initiator.

1.7.1 Review Questions

1. What is the definition of communication?
2. What is the definition of Semiotics?
3. What is the definition of Pragmatics?
4. What is the difference between conscious and unconscious intention?
5. List several examples of unconscious intention in communication.
6. What are the four components present in any form of communication?
7. What four factors combine as Background Knowledge?
8. How are Culture and Background Knowledge related?
9. What five variables constitute Expressive Modalities of Communication?
10. What five variables constitute Perceptive Modalities of Communication?
11. Which three matched sets of Expressive and Perceptive Modalities are the most easily manipulated for communication?
12. In what ways can the Physical Context impact upon communication?
13. What is meant by the following phrase: "Meaning is independent of communication"?
14. Which three factors provide for variation in communication.

1.7.2 Suggested Activities

1. List five different facial expressions that can be meaningful in your native culture and identify the possible meanings for each. Are there any circumstances where the same facial expression may have a different meaning?:
2. List ten different gestures or body postures that can be meaningful in your native culture and identify the possible meanings for each. Are there any situations where these gestures or postures may have a different meaning?
3. List ten different meaningful sounds in your native culture which are not actually words and identify the correct use of each (ex. "Shhh" is a common sound made to indicate that people should be quiet).
4. Observe the natural body postures of people talking to each other. What kinds of posture differences can you find? What might these postures indicate about the communication taking place?
5. Identify twenty different things that are in your current physical context. Out of the things you have identified, how many are the result of another mind's expression? How many of those items do you perceive as meaningful?

APPENDIX F2 – LANGUAGE

Language

Timoth entered the room and blurted out "Isn't it just a matter of formality?"

Rasmus looked up from the dictionary on the reading stand. "Isn't *what* just a matter of formality?"

"This 'register' business everyone gets so worked up about. Wouldn't it be easier to just say whether something was formal or informal?"

"Of course it would be easier; but it would also be terribly inaccurate." Rasmus reached for a book on the top shelf. "Here, see this book? It lists hundreds of professional fields and identifies the requirements of each." Rasmus placed the book on the desk. opened it, and continued, "Here near the beginning is 'Architecture', near the middle is 'Medicine', and at the end is 'Zoology'."

Timoth sat down at the desk across from Rasmus. "I'll bet there's a point to all of this somewhere... I can just feel it."

"Yes, there is. Think of your average informal conversation on the street. Now, how would people in the fields I just mentioned communicate differently with their fellow peers on the job?"

"Well, they would likely use some specific vocabulary like 'I-beam,' or 'scalpel', or 'invertebrate'... stuff like that."

"Yes, they are all likely to have different special vocabularies, although the medicine folks are likely to overlap a bit with the zoology folks. But suppose a group of zoologists went out for lunch at a restaurant. Would they talk to each other in the same way as they did at work?"

Timoth gazed out the window, hoping to see if any zoologists were outside. "I don't know."

"Well, you were the one who brought up the 'formal' versus 'informal' dichotomy. Wouldn't you consider the work place more formal and the restaurant less formal?"

"I suppose it depends on which restaurant they go to," said Timoth, with a laugh.

"Aha! So the physical environment might actually make a difference in how they communicate? Suppose two zoologists are talking at work and their supervisor comes in. Would their manner of communication change at all?"

Timoth desperately wanted a zoologist or two to slip into the room at this moment. "Well, I suppose it might depend on what they were talking about before the supervisor came in and whether the supervisor was going to join that conversation or tell them to get back to their zoology." Timoth decided a smile might be better than a laugh this time.

"Well, done!" said Rasmus. "You've backed into the third variable: Topic. What the conversation is about might influence how it is discussed."

"Third variable? What were the other two?"

Rasmus held out three fingers and pointed to each in turn: "First you have the physical setting, second you have the participants themselves along with their relative status, and third you have the topic of their discussion."

Timoth extended the same three fingers and pointed silently to each. "So just three variables? Is it really that easy?"

Rasmus smiled. "I'm glad you are starting to consider these things easy. Yes, three primary variables; but also how the communication took place: writing, signing, speaking, shouting, etc. That's the fourth and final variable to what we call 'Register'."

"So formality can't exist without all four of these factors. Formality is only the tip of the iceberg. It's not that register is a matter of formality, but that formality is a matter of register!"

"By George, I think you've got it!"

2.0 Overview

This chapter investigates language and its place as a subdivision of human communication. The technical term for using language to talk about language is Metalinguistics. The words "noun", "verb" and "adjective" are excellent examples of metalinguistics because they are words (pieces of language) which describe pieces of language. Any book on interpreting or translation is a metalinguistic work. You have a metalinguistic discussion any time you talk with peers or consumers about language. One of the advantages of metalinguistic ability is that it helps children (and adults) to learn second languages (O'Malley & Chamot, 1990). Another advantage is it allows us to analyze interpretations and the process of interpreting.

This chapter will provide a systematic explanation of language structure which will help organize our understanding of what language is and how it relates to interpreting and transliteration. We will review different ways of expressing and perceiving language and will then explore what I call "The Linguistic Pyramid" which organizes seven interactive levels of language. We will conclude with some explanations about language variation and the ability to use language to describe language.

2.1 What is Language?

Any animal may use symbols (such as sounds or body movements) to convey information between members of a community, but the word language can only describe certain types of communication systems. The previous section defined communication as follows: one mind's perception of a message which another mind has expressed. Language is a specific kind of communication which meets all four of the following requirements: 1) The communication must be systematic: it must have rules which apply to the production and organization of the symbols (ie. grammatical rules). 2) The communication system must allow for an infinite number of ways to encode any given message. 3) The communication system must pass between at least two generations of active users. 4) The communication system must be flexible enough to accept change over time and between users. In sum, language is the systematic use of symbols to express and perceive information between members of a community in which the system is rule-governed, has infinite production possibilities, is intergenerational, and changes over time. Humans are the only species on Earth which have the ability to communicate via language.

Prior to 1960, the definition of language specifically excluded gestural communication systems because another part of the definition of language was that it be spoken. In 1960, William Stokoe became the first person to systematically study a signed language. He began by exploring the first part of the definition: Stokoe analyzed the rules for the formation and organization of the symbols. In the landmark work he published that year, Sign Language Structure, he identified three basic parts which come together to form signs: handshape, location, and movement. In 1970, Robbin Battision identified a fourth characteristic: palm orientation. The importance of facial movements and body posture was eventually noted by a variety of other researchers.

Stokoe later expressed all of these various aspects of signed languages as an even simpler notion of two things: actor and action. In other words, something acts (a hand at the side of the head, the muscles in the cheek to one side of the nose) and an action takes place (the tip of the hand taps the side of the forehead, the cheek muscle contracts and "wrinkles" one side of the nose). Other researchers identified the rules for ordering the signs (grammar), the ability to follow the rules while encoding the same message in an infinite number of ways (productivity), the fact that the language has been handed down through multiple generations of users (intergenerational transmission), and the ability for the language to adapt and change over time (chronological change).

With all of these requirements met, the old requirement that language must also be spoken has since been eliminated. Linguists around the world now acknowledge rule-governed signed communication systems as languages. William Stokoe was the person who gave the name "American Sign Language" to the signed language of the United States of America and most of Canada. Other signed languages have different symbols, different rules than ASL. They generally reflect the names of the countries or provinces in which the language is used such as British Sign Language, Australian Sign Language, French Sign Language, Italian Sign Language, Quebec Sign Language, etc. So far there have been no signed languages which have been shown to follow exactly the same rules for any spoken language. In other words, French Sign Language (LSF) is not based upon spoken French and Italian Sign Language (LSI) is not based upon spoken Italian. These titles simply indicate

that the people who use LSF generally reside in France and the people who use LSI generally reside in Italy. Likewise the title ASL identifies that the users of the language generally reside in North America.

2.2 Channels and Modes

Now that we understand language as a subset of communication, we can further explore a few more ideas about language. To begin, let's consider the three possible language channels. *Language Channels* are the three basic ways of expressing language: signed, spoken, and written. English can be expressed in two channels (written English and spoken English) while American Sign Language is most commonly expressed in one channel (signed ASL) but may also be expressed in one of several writing systems proposed for ASL (although none are widely used at this time). *Channels* are distinct from *Modes*.

In the previous section we explored the five primary modes of expressing communication: image, odor, sound, taste, and texture. Only three expressive modalities are used to express language: image, sound, and texture. These three expressive modalities again match to our senses to detect the elements of language. Languages are generally understood through the senses of sight, hearing, or touch. While it is clearly possible to communicate through food or perfume, we will exclude the senses of taste and smell from our discussion of modalities related to language.

Channels and *Modes* are related, but not as a one-to-one match. Generally, a spoken language is encoded through sound; written and signed languages are encoded through images. But spoken languages can be written in phonetic alphabets or encoded visually with manual cues. Written symbols can be spelled out or transferred into Morse code tones. Texture is a common language-encoding mechanism for blind and deafblind people and can likewise encode signed, spoken, or written languages.

Expressive Modalities are not limited to language use. We saw in the previous section that they are available for all forms of communication: music uses sound, paintings use images, and some paintings of Elvis use texture. It is quite possible, even common, to use an encoding modality without using language. For example, an infant's random gestures, babbling, and occasional contact with a caregiver would be examples of using all three encoding modalities (images, sounds, and textures) but expressing no language at all through any of them. The child may certainly communicate, but the requirements which define language (such as being rule-governed and shared by a community) have not been met – at least, not yet.

In order to communicate, however, we must "express and perceive information between members of a community." This means that whatever has been expressed must be perceived for the communication to take place. Perceptive Modalities are the means by which a message is perceived such as hearing, seeing or touching. Specifically we will identify these as visual perception (seeing images), auditory perception (hearing sounds), and tactile perception (feeling textures).

The three channels of written language, signed language, and spoken language can be expressed through image, sound, or texture. Within the channel of writing we might first think of printing versus cursive writing. It is also possible to express written languages through dots and dashes for Morse Code (or raised dots on a flat surface for Braille). Morse Code and Braille are not languages – they are Language Encoding Systems. *Language Encoding Systems* are finite and closed sets of symbols which express the basic structural components of a language. If those symbols (letters of the alphabet, dots and dashes) are embossed so that they can be detected by touch alone, they still encode a written channel but the expressive modality is texture and the perceptive modality is tactile. Figure F2.1, below, categorizes the most common Language Encoding Systems by Language Channel, and by Expressive / Perceptive Modality.

	Expressive / Perceptive Modalities		
Language Channels	***Image / Visual***	***Sound / Auditory***	***Texture / Tactile***
Written Languages	• Written Symbols • Typed Symbols • Fingerspelling • Morse Code Symbols • Semaphore	• Morse Code Tones • Spelling Aloud	• Brailled Symbols • Raised Letters • Palm Printing • Tactile Fingerspelling
Signed Languages	• Signed Symbols		• Tactile Signing
Spoken Languages	• Phonetic Alphabets • Manual Cues • Mouth Movements	• Spoken Symbols	• Tadoma • Tactile Manual Cues

Figure F2.1 – Language Encoding Systems

You may have noticed that one space in the middle of the grid has no examples. Signed languages are not expressed through sound nor are they perceived through auditory perception. While it is possible to make sounds while producing a signed language, these sounds do not effectively represent the basic structural components of signed languages. It is possible to use a spoken language to describe how to produce elements of a signed language. It is even possible to rearrange the order of words in a spoken language to match the word order of a signed language. Neither of these examples can be considered an encoding system for signed languages.

2.3 The Linguistic Pyramid

Now that we have a working definition of what language is we can explore the elements at work within language. One part of the definition for language is that the system is rule-governed. We will use an organizing strategy which I call the Linguistic Pyramid to identify the larger parts of the system of language. I use the idea of a pyramid because it reveals very plainly that the bottom-most layers support the weight of the layers above and so on. I find this a useful way to think of language because even the most complex of language use still requires the most basic elements to be produced. Let's have a look before defining each part of the Linguistic Pyramid.

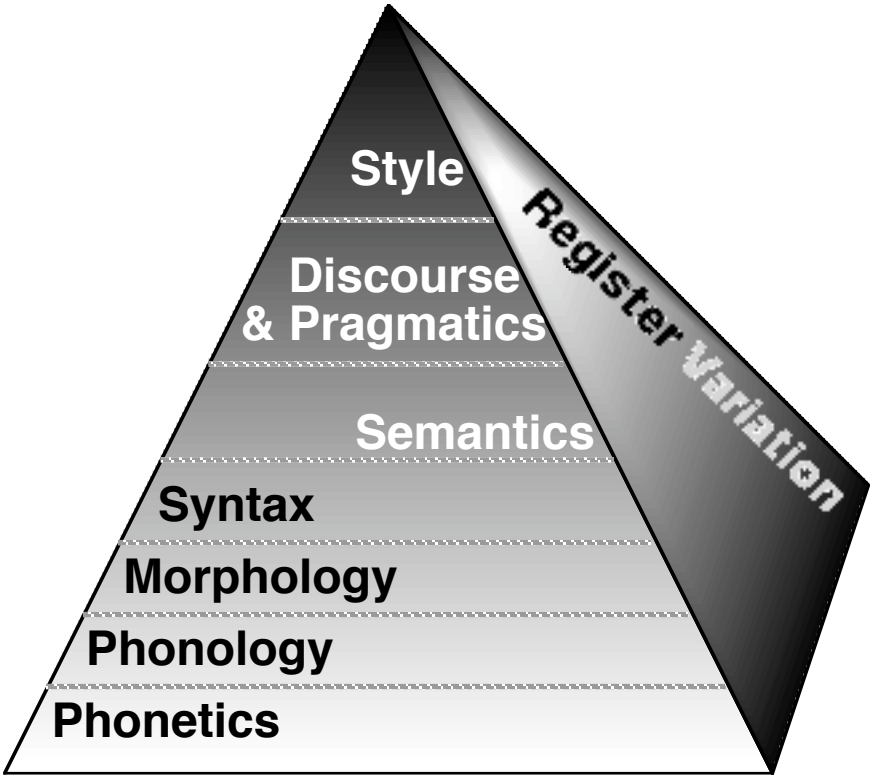

Figure F2.2 - The Linguistic Pyramid

2.3.1 Phonetics

Language can be thought of as a series of different skills and rules which overlap and build one upon another. At the bottom, most basic level we have phonetics, which consists of the foundational support of language. In spoken languages we have airflow, points of articulation within the mouth, vocal chord vibrations, and other changes in the mouth, pharynx and larynx. When all of these pieces are put together we can produce consonants and vowels and suddenly we're making the sounds of spoken languages. In signed languages we have finger, thumb and limb extensions, rotations, and contractions which allow us to establish handshapes, orientations, and movements between locations. Without the foundation, we can't get very far linguistically.

Phonetics is the study of how elements of language are physically produced. This means that muscles have to move and body parts contact each other (or nearly contact each other). Phonetics focuses on the physical elements of producing language which. These physical elements are the result of muscle movement and are the most observable elements of language production (although many some researchers of spoken language have made use of X-ray technology). Phonetics attempts to explain the behavior which produces the building blocks of language.

In the previous section we investigated the expression of communication as semiotics. Phonetics, being the use of muscles to express language, is a subset of semiotics. It is still possible to express communication beyond language and some of this is called paralinguistics. *Paralinguistics*, a separate subset of semiotics, includes non-linguistic vocal inflection (such as changes in pitch and volume) or facial expression (such as mouth and eyebrow movements) for affect and emphasis. It is important to note that vocal inflection and facial expression also have linguistic uses, specifically as a part of grammar (vocal inflections and facial expressions may be the only indicator that a sentence is a question versus a statement). Beyond Paralinguistics is the remainder of semiotics which includes vocal signals, eye gaze, visual gestures, and body postures. Figure F.3, below, shows the relationships of Paralinguistics and Phonetics as separate subsets of Semiotics:

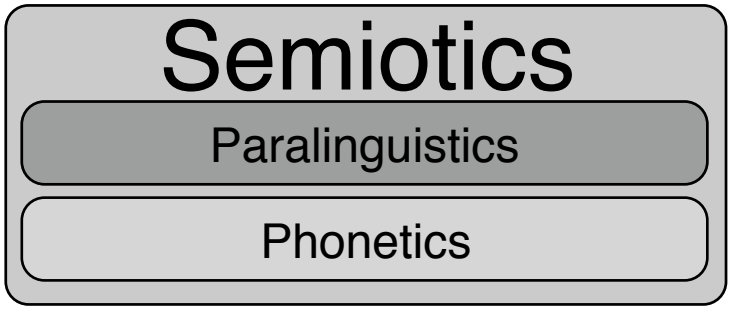

Figure F2.3 - Semiotics, Paralinguistics & Phonetics

2.3.2 Phonology

It isn't good enough just to have building blocks. We need some rules to guide how the building blocks are assembled and this is the realm of phonology. Some languages let you put groups of consonants together at the beginnings or ends of words. In English we have problems pronouncing things like "tlzis" or "gbrang" because we don't like these particular consonant clusters at the beginnings of our words. American Sign Language doesn't like having too many two-handed signs where each hand has a different hand shape. Those two-handed signs in which the hands do not use the same handshapes are generally limited: the non-dominant hand can only use a few specific handshapes (Battison, 1978).

We use slash marks (//) to indicate sounds rather than letters. What you are reading is composed of letters (the written channel). If you read aloud, you produce sounds (the spoken channel). Often a letter is not pronounced they way it is spelled. Some simple examples include the letters "gh" in the word "enough", where the last sound is pronounced /f/; and the letter "c" may be pronounced as /s/ as in the word "pencil" (/pensil/) or as a /k/ as in the word "cap" (/kap/). More subtle examples include the words "caps" and "cabs" where the letter "s" sounds like /s/ in the word "caps" (/kaps/) but sounds like /z/ in the word "cabs" (/kabz/).

Phonology is the study of how language elements are combined. One way to do this is to inventory the words used in a language and find patterns. One pattern in English is that we can place up to three consonants in a row at the beginning of our words; but to do so, the first of these must be the sound /s/, the second sound must either be /k/, /p/ or /t/ and the third sound must be /l/ or /r/. These combinations can be found in words like "sclerosis", "scream", "split", "spray", and "street".

Phonological analysis will make use of the level below it: phonetics. Each group of sounds (in the above examples) shares certain phonetic principles. The first of these sounds, /s/, is a sibilant. Sibilants are produced by restricting the flow of air such that a hissing sound is generated. As it happens, /s/ is a voiceless sibilant, meaning that the vocals chords are not vibrating when the sound is produced. The second group of sounds, /k/, /p/ or /t/, are all stops. Stops are produced when the airflow is interrupted by a closure of the mouth. The sound /k/ closes the middle of the tongue against the roof of the mouth, the sound /p/ closes the lips together while the sound /t/ places the tip of the tongue against the base of the upper teeth. All three of these sounds are voiceless consonants.

The third group of sounds /l/ or /r/ are both liquids. Liquids restrict the airflow through a partial closing of the mouth. The sound /l/ is produced almost that same way that /t/ is produced, except that the tongue is not widened to close the airflow of the mouth, therefore air travels around the sides of the tongue. The sound /r/ is often produced, in American English at least, by a rounding of the lips. Both /l/ and /r/ are voiced, meaning that the vocal chords are moving when these sounds are produced.

Knowing how each sound is produced (phonetics) can lead to an explanation of which sounds are allowed to combine and which are not (phonology). The fact that the first two of these sounds are voiceless helps us understand a point of similarity between them. Knowing this similarity helps us predict that mixing of voiced with voiceless consonants (such as /zk/, /zt/, /zp/, /sg/, /sb/, or /sd/) are unlikely combinations at the beginnings

of English words. The fact that both the /t/ and /l/ sounds are made with nearly identical tongue placement also helps us predict that the sequence /stl/ is not included in the possible combinations of three consonants at the beginning of English words.

All of this is indeed very technical, but my point is to demonstrate not only that there are rules at work here, but that there is already an overlap of levels between the linguistic pyramid: the rules governing combinations of speech sounds in English (phonology) are related to how those speech sounds are produced (phonetics). In other words, we can't do too much work on the second level of the pyramid without building upward from the first level of the pyramid. Each step upward depends on the ones beneath.

Signed languages also have phonetics and phonology. Prior to 1960, the definition of language specifically excluded gestural communication systems because another part of the definition of language was that it be spoken. In 1960, William Stokoe became the first person to begin exploring the part of the definition which requires rules for the formation and organization of the symbols. In the landmark work he published that year, *Sign Language Structure,* he identified three basic parts which come together to form signs: handshape, location, and movement. In 1970, Robin Battision was one of several researchers who identified palm orientation as a fourth characteristic. The importance of facial movements was eventually recognized (for example, Liddell, 1977). Stokoe (2002) later proposed that all languages (spoken and signed) can be considered to be constructed in a single framework: Something acts (muscles move) and something is acted upon (vocal chords, limbs, tongue, fingers, etc). In other words, something acts (a hand at the side of the head, the muscles in the cheek to one side of the nose) and an action takes place (the tip of the hand taps the side of the forehead, the cheek muscle contracts and "wrinkles" one side of the nose). Other researchers identified the rules for ordering the signs, the ability to follow the rules while encoding the same message in an infinite number of ways, the fact that the language has been handed down through multiple generations of users, and the ability for the language to adapt and change.

With all of the other requirements met, the requirement that language be spoken has since been eliminated. It is now appropriate to talk about rule-governed gestural communication systems as languages. William Stokoe was the person who gave the name "American Sign Language" to the gestural language of the United States of America. Other signed languages have different symbols and different rules than ASL. They generally reflect the names of the countries or provinces in which the language is used such as British Sign Language, Australian Sign Language, French Sign Language, Italian Sign Language, Quebec Sign Language, etc. So far there have been no signed languages which have been shown to follow exactly the same rules for any spoken language. In other words, French Sign Language is not based upon spoken French language. The title simply indicates that the people who use it generally reside in France. Likewise the title ASL identifies that the users of the language generally reside in North America.

2.3.3 Morphology

Equipped with the building blocks (phonetics) and special rules that govern what kind of combinations are allowed (phonology), we can now start building something. The whole point of language is to tell people what we mean; and the smallest unit of meaning, linguistically, is the morpheme. Morphology is the study of how bits of meaning (morphemes) combine with other bits of meaning (other morphemes) to form words. The individual sounds /h/, /o/, /r/, and /s/ have no significant meaning by themselves but when put together in the order above they form the English word "horse" which brings to mind rather large, four-legged animals which may be useful to cowboys, rodeo stars, and polo players: that is one basic meaning of the word "horse".

As it happens the word "horse" contains the letters "o" and "r" which, by themselves, create the English word "or"; but the concepts related to the word "or" have rather little to do with a horse. These two words "horse" and "or" happen to have some phonological similarities, but they are separate and unrelated morphemes. Phonology indicates that these are all English sounds and that they are combined in ways that English allows. Morphology lets us understand that there are different basic meanings attached. The combination "horse" is a four legged animal. The combination of "or" is a conjunction which is used to join more than one noun, verb, or clause. Both of these words are *free morphemes* which can stand alone and still have meaning. In contrast is the category of *bound morphemes* which only have meaning when they are attached to free morphemes.

One of the most obvious combinations of free and bound morphemes in English is our very predictable use of the written letter "s" being combined with nouns to mean "more than one" of the noun. When we bind the right bits together we can talk about "more than one horse" with the word "horses" because the "s" bit, which in this case conveys a meaning of plurality[48], gets bound to the "horse" bit. So the word "horses" contains exactly two morphemes.

Some people confuse the idea of a morpheme with that of a syllable. These two things (morphemes and syllables) may often overlap, but they are not the same. An example of the difference between syllables and morphemes is the English word "artichoke", which has three syllables but contains only one meaning. The letters "art" form part of the word " artichoke " but they don't reveal any meanings of the word "art". In other words, the concepts of music, literature, paintings, or sculpture are not part of the word "artichoke". Likewise the letters "choke" form part of the word "artichoke" but, similarly, do not indicate the concept of restricted breathing as part of the word "artichoke". So syllables and morphemes are different things: syllables are groups of sounds, morphemes are pieces of meaning.

In the example mentioned previously above the morpheme "horse" and the morpheme "s" combined to make the word "horses" (which is a single word with two morphemes in it). The "horse" part is a free morpheme, meaning that it can stand alone as a word all by itself. The "s" part is a bound morpheme, meaning that it cannot stand alone, but rather it must combine with a free morpheme to be meaningful. *Every word in this sentence is a free morpheme*. (Hey, wake up! Did you check that last sentence? Check it out before you keep reading).

Bound morphemes include many different pieces of meaning, including the letter "s" (which was attached to the word "morpheme") and the letters "ed" which were attached (twice, now) to the word "attach" in this sentence. Those were quick examples so you might want to read the previous sentence again and find the examples. No, really, read it again, the examples are imbedded in the sentence.

Both free and bound morphemes contain phonemes (just when you thought you understood the difference between the two, now I'm forcing you to make a connection). Let's return to some earlier examples: "caps" (/kaps/) and "cabs" (/kabz/). Notice that in the spellings of the words I used the letter "s" in both of them and that it changed the meaning to "more than one cap" and "more than one cab". The same morpheme, a bound morpheme of plurality, was attached to each of the free morphemes "cap" and "cab"; but notice the sounds made for the letter "s" are different. When the plural morpheme comes after a voiceless consonant such as /p/ then it takes the voiceless form /s/. When the plural morpheme comes after a voiced consonant such as /b/ then it takes the voiced form /z/. When added to the word "horse", which already ends in the sound /s/, the plural morpheme adds a vowel and sounds like /iz/. The amazing thing is that we hear three different combinations of sounds (/s/, /z/, and /iz/) and still understand them to mean the same thing: more-than-one of something. This is how phonetics, phonology, and morphology overlap. We understand that this one piece of plural meaning (morphology) has three different English sounds (phonology) whose use can be predicted based on how the sounds are made (phonetics).

American Sign Language and British Sign Language are both morphologically rich languages in comparison to English. While English depends largely on the sequential combination of affixes (prefixes and suffixes in this case), ASL and BSL manage to use space in a very efficient way morphologically: various bits of meaning can be combined with others at the same time. A simple example is the use of numeral incorporation. The handshape component alone may represent the numerical part of a sign's meaning. But it is not possible to generate a sign with only handshape. The remaining components (location, movement, and palm orientation) may represent the free morpheme component of "weeks," for example. Both ASL and BSL use the same handshape for the number two. This handshape could then be combined with specific palm orientation, location and movement. The resulting combination would have the specific meaning of two-weeks.

While BSL and ASL share the same handshape for the number two, they have distinct handshapes for some other numbers. The ASL handshape for the number six is identical to one of the BSL variants for the number

[48] English also uses the same phonological piece for possessives and to mark third-person singular subject agreement in verbs. Thus the letter "s" actually has three distinct English morphemes associated with it.

three (Cerney, 1987) and therefore the same physical sign production for the ASL concept of "six weeks" would be mistaken in England to mean "three weeks". While ASL and BSL do share some similarities in vocabulary (such as having identical production and meaning for the sign UNDERSTAND) they have significant differences including different sets of possible handshapes for each language (Cerney, 1987). It has been estimated that ASL and BSL share only about 30% of their respective vocabularies (James Kyle, personal communication).

2.3.4 Syntax

We can take this idea one step further by arranging our bits of meaning in a line. If I have two brown horses I probably want to use a word order like "two brown horses" to talk about them in English. But if I'm not using English, I might mix up that order and talk about my "brown horses two" or even my "horses two brown." But if I know the rules of word order, or syntax, in my language, then I am likely to keep my words right order in the... I mean... in the right order.

One approach to syntax is that there are basic word orders to which rules may apply to generate more complex word orders. A basic word order in English is Subject Verb Object, noted simply as SVO. If we have an object, however, that often means the verb can act on the object. These kinds of verbs are called "transitive" while verbs which do not act on objects are called "intransitive". The basic word order for English sentences with intransitive verbs would be SV - Subject, Verb. A verb's ability to act on an object is part of its morphology. So once again we see an overlap between different levels of the linguistic pyramid.

ASL shares the same underlying word order (SV or SVO) of English (Liddell, 1980). But this doesn't mean that every ASL sentence (or even that a majority of them) will follow the typical patterns of English. The underlying word order is only a starting point and many syntactic rules, such as topicalization, allow for changes in the word order. In ASL this might mean that my topic is the two horses and my comment is that they are brown; or perhaps my topic is the brown horses and my comment is that there are two of them.

Many people who learn about the linguistic pyramid are curious to know where "grammar" sits within the pyramid. Grammar is the combination of morphology and syntax and therefore it is within those two levels that "grammar" can be found. Grammar includes the correct use of free and bound morphemes to indicate plurality as well as the correct word order as in the following sentence: "Grammar has two components." In this example sentence the word "Grammar" serves as a noun (morphology) and also as the subject of the sentence (syntax); the word "has" is the third-person, present-tense form of a transitive verb; the phrase "two components" consists first of an adjective "two" and a noun "components" which itself was constructed of the free morpheme "component" and the bound morpheme "s".

Now, you may be sitting there, thinking to yourself, "gosh this sure is complex... how could I ever learn this stuff?" But the fact is that you already know how to use language. You probably had never encountered the sentence "Grammar has two components" before, but you were able to understand it. If language had no rules you wouldn't be able to read anything. We follow the rules of language whether we can explain them or not. What the linguistic pyramid helps us to do is to organize and explain the rules we are already following. Once we have them organized, we can use them to our advantage. But first, we need to climb a few more steps in the pyramid.

2.3.5 Semantics

Well all of this is fine, you say, but where does interpreting fit into all of this? It hasn't yet. You see, we need all of the building blocks and rules to use language, but we need to have a message before language is worth much. One famous example of a meaningless sentence was proposed by Noam Chomsky: "Colorless green ideas sleep furiously." Grammatically it is a legitimate English sentence but it has no meaning. In fact, it has contradictory meaning (how can something that is colorless also be green?) There is no reasonable context in which this sentence makes any sense.

Semantics is the study of meaning words, phrases and sentences (in contrast with morphology, which is the study of pieces of meaning and how the pieces combine). *Lexical Semantics* focuses on words, *Structural Semantics* focuses on the meanings built between groups of words (phrases and sentences). A common example of structural sematnics is the English word "run" meaning a physical activity for joggers ("I run every morning")

but in other contexts the same word may mean an unraveling in clothing ("there is a run in my stocking"). Semantics includes the idea of conceptual accuracy (using the right word for the right concept). It is context which provides the ability to determine that accuracy. Context means more than just the surrounding words in a sentence. Let's take an example sentence of "It will run." Without any context we would assume the word run is being used in its Primary Sense: using legs to propel a person or animal forward at a quick pace. But additional context can help us understand the meaning of "it" and "run" more accurately.

Referent of "It"	**Ambiguity**	**Clarifying Context**
Colored fabric fading:	It will run	if you wash it in warm water
A stage performance:	It will run	for two more weeks on Broadway
An automobile motor:	It will run	once you replace the spark plugs
Fabric unraveling:	It will run	if you snag it on something sharp

Figure F2.4 – Meaning In Context

Semantics also includes the notion that there are various relationships of meaning between words such as opposites like "old" and "young" where one could say "not young" instead of saying "old". Other examples include hierarchies where we understand that a large general category such as "food" which has many sub-categories such as "fruits" and "meats". "Fruits" contains things such as "Apples" and "Pears". "Apples" contains varieties such as "Golden Delicious" and "Granny Smith".

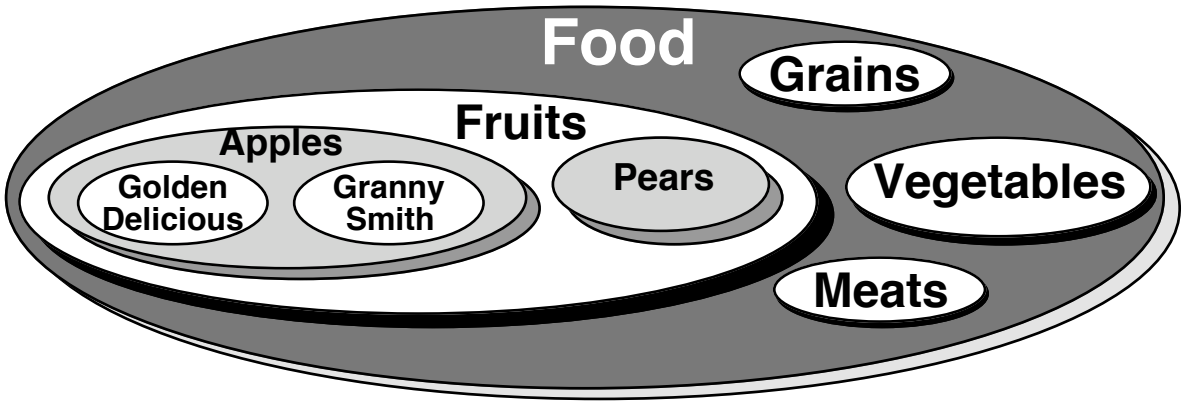

Figure F2.5 – Semantic Hierarchies

But the words "Granny Smith" might also refer to someone's elderly relative and "Apple" might also refer to a kind of computer. The context surrounding the use of the word will generally make it clear what the meaning is, but sometimes will still leave ambiguities such as in the sentence "Visiting relatives can be annoying", which may describe the task of visiting other relatives as an unpleasant one or refer to the irritation which might be caused by relatives visiting you.

Semantics began as a vague field, and, quite honestly, is still rather vague, because we cannot see meaning; we can only agree to what the meaning is. So when we say "what does DOG mean in English?" we can turn to the dictionary or we can argue that it may mean certain prototypical bits and pieces of dogs (such as four legs, a snout with teeth inside, ears, fur, a tail, and so on). When the word DOG is used in context, however, it may really mean my dog, or the first dog I ever met, or that really nasty animal down the street, or for that matter, Snoopy, Lassie, Marmaduke, or Toto. So when you have all these possibilities just for the word "DOG," imagine the complications that can come up for a whole language full of words used in a whole world full of contexts.

So here we are with semantics. Surely that's good enough for interpreting, right? I mean, all we have to do is understand what the words mean in the source language, find the words which mean the same thing in the target language, and say those words in complete sentences with accurate grammar and clear enunciation. Isn't it exactly as simple as that? Well that's fine if we want to turn a comedy routine into a dry and pointless lecture; but we might not get hired again in our lifetimes (and that's not good because we need the work!)

2.3.6 Discourse and Pragmatics

While semantics focuses on what a word or an utterance means, given its context, we still need a higher level to investigate how people use language with each other. *Discourse* is how we use language beyond the sentence level. *Pragmatics* is how social and environmental factors influence the meanings of the speaker and is a co-partner to discourse. *Discourse Analysis* is the study of how people organize and use language to do things. When we ask "Could you pass the pepper, please?" we aren't really looking for a "yes" or "no" answer. We really want the pepper and we want it before our food gets cold. The pragmatics of this situation is that we actually want the pepper, but need to be polite. The discourse feature used to accomplish this goal is the use of a yes/no question, which is culturally recognized as a polite way of making a request.

When we ask "Could I ask a question?" we tend to ignore the fact that we just did. And when friends start lambasting a particularly nasty co-worker who, by chance, has just entered the room, you can quickly change the discussion to how odd the weather has been lately which (if your friends are paying attention) will let them know that it is time to stop the lambasting.

Let's take an example sentence and several possible responses to it. Example: "I want the red one." Response A: "Certainly. Is there anything else I can get for you today?" Response B: "Well, maybe, if you're good, we can come back and get it." Response C: "What we want and what we get don't always match up, do they?" Response D: "Mr. Smith already purchased it." Response E: "Oh, I didn't know you were such a connoisseur!"

The example sentence appears to be a request, but it may simply be a statement without any intention of accomplishing a transaction. What situations are likely to surround each response? Probably each could be spoken in a store, but they might be uttered as people look through a catalogue, peer through a window, or survey the landscape. We simply don't know what "one" refers to. But we would understand that whatever it does refer to, there is probably only one that is red, and very likely to be others which have colors other than red.

Which responses mean "yes" and which mean "no"? Response A implies "yes" even though that word is never stated. Likewise responses C and D imply a "no" without directly saying so. Response B implies "maybe" but might actually end up meaning "no". Response E does not seem to indicate any affirmative or negative, but rather appears to be a comment about the requester.

Who are the people making these utterances? Responses A and D are likely to come from a sales clerk. Responses B and C are likely to come from a parent (or at least a person with authority for making purchases). Response E might well come from a peer.

What is the effect of each response? Responses A and D appear to be polite interaction. Response B may be a request for postponing while also an indication that it is time to leave. Response C may be an indication that no further requests should be made (and perhaps no further utterances at all). Response E may be a joke or at least a jovial response to indicate camaraderie.

Our use of emphasis, pauses, and repetition also influence the way we use words to communicate. Let's revisit the example from above with a few modifications: "I want the red one (pause) the red one." This might be uttered as a store clerk begins to get the pink one. Gestures, eye gaze, body posture all can influence how we understand people's intentions. Let's take the same example, but trimmed a bit: "I want that one" and combine it with a pointing gesture with eye gaze directly at the desired object and the body leaning forward. All of these additional physical behaviors are called paralinguistic. Paralinguistic features are things which are not by themselves language, but can occur simultaneously with language. They support the linguistic message and could well be investigated as part of discourse analysis.

Knowing how to build words and sentences is certainly an essential part of using language, but knowing the way we use words and sentences is nearly as important as what those words and sentences are. We need to know how our consumers are using the words they say in a source text; but then we also need to know the appropriate ways to say those things in the target language. This is real work, and it is also real interpreting.

2.3.7 Style and Idiolect

Where do we go from here? Well, there is one more upward level toward completing the Linguistic Pyramid: style. When we understand the message well enough to adequately predict where it is going; and we also understand the person creating the message well enough to know her purpose, her tendencies, her idiosyncrasies of language use; then we have entered a stylistic understanding of the source text. Style is how a single person uses language.

One aspect of literary criticism is the investigation of the stylistics of writers; and stylistics is the capstone of this investigation into linguistics. If we look at discourse as the way a community uses language, then style is the way a single member of a community uses language. Bakhtin states that "Any utterance ... is individual and therefore can reflect the individuality of the speaker (or writer); that is, it possesses individual style." (Bakhtin, 1986: 63). When cousin Bob always mispronounces certain words, uses other words in unique ways, or, in general, has his peculiar ways with language, then we are talking about his individual linguistic style.

Style includes the predictable linguistic use of certain words or phrases and topics of discussion. It also includes predictable paralinguistic features such as pitch, quality of voice, gestures, and facial expressions. Paralinguistic features are most noticeable at the discourse and style levels of the Linguistic Pyramid. Those which identify people's attitudes, beliefs, and emotions about their messages can be considered as stylistic.

Style is what impressionists and impersonators depend on for entertainment. Imitations of John Wayne, Ed Sullivan, Rod Serling, and US presidents abound in the field of entertainment. The most entertaining are often those which most completely match the style and idiosychrasies of the person being imitated.

A stylistic understanding of a source text can be helpful in the interpreting process. This is not to say that we should imitate our source speakers to the point of making fun of them. A stylistic understanding helps us in making predictions about the source text and its creator. If we are also able to reproduce equivalents of these individual linguistic tendencies in the target language, then we are being about as accurate and as true to the source as we can ever be when we interpret.

2.3.8 Register and Register Variation

Now that we have all the building blocks in place and have built the linguistic pyramid from the base of phonetics to the capstone of style, we can turn the whole thing sideways and look at one way that language gets modified. Touching on all of the levels of the linguistic pyramid is what has come to be called *Register Variation*.

Gregory and Carroll (1978) defined register as being composed of four elements contained in three categories: the *field* (a combination of subject matter and location or setting), the *mode* (language form or signal), and the *tenor* (relation of speakers). Register is here defined as being composed of all four of the variables identified in their three categories: setting, signal, speakers, and subject.

Settings could be conference rooms, lecture halls, park benches, religious sanctuaries, auto repair shops, or bedrooms. The *signal* is simply the language channel, mode, and language encoding system used to communicate, such as conversing in ASL or reading a speech in English. The *speakers* may be strangers or may know each other well. They may only interact at work or may also know each other socially. *Subjects* of discussion could be work, politics, the weather, sports, shared experiences, or learning something new. Register Variation is the change in language based on where the communication is happening, how the communication is taking place, who is talking to whom, and about what topic: Who, What, Where, and How.

Register variation affects every level of the Linguistic Pyramid. The most obvious changes are in the vocabulary we use such as "choo choo" to a child, "train" in general terms, and "the express" to people who know about

trains. Another obvious area is in syntax such as "Hello there!", "It's nice to meet you", and "I am so pleased to make your acquaintance." Register even affects how we pronounce our words as in the differences between "Wha cha doin?" and "What are you doing?".

Some people prefer to think of Register as meaning a certain level of formality; but register is much more than just a measure of formality. Martin Joos (1961, 1968) proposed a theoretical division of the ways people talk: intimate, casual, consultative, formal, frozen. Many people trying to understand register variation have borrowed his five-way division, but these simple categories don't capture the subtleties of Register Variation and Joos did not even use that label. His label for this five-way division of language variation was the "five clocks" (Joos, 1961, 1968). People have latched on to his writings as an explanation of Register Variation, in part because it proposes a nice small number of divisions – five (just the right number to count on your hand). While Joos' "five clocks" and the concept of register variation are related, it is important to understand that studies of register variation do not limit themselves to only five divisions, nor are there only five kinds of register being dealt with by the consumers of interpreting services.

While the level of formality can certainly impact upon register, formality level does not equal register. Charles Ferguson (1977) gave this explanation of register:

> One of the central facts about human language is the way it varies in structure depending on the use to which it is put. Every speech community and every individual user of language exhibits this kind of variation in language behavior. It is not only the semantic content which varies according to the use but also phonological and syntactic patterns, choice of vocabulary and forms of discourse. In some societies this variation can be illustrated dramatically by turning the dial of a radio to find a particular program. It often takes less than a sentence of speech to decide whether we are hearing a news broadcast, commercial message, 'soap opera', campaign speech, or sermon. (Ferguson, 1977: 210).

Hatim & Mason (1990) identified a helpful difference between "Language Users" and "Language Use". Variation for Language Users may be based on region, social class, gender, ethnicity, and generational differences. Language Use is directly tied to register variation: 1) where they are talking (settings), 2) how people talk (signals), 3) who they are talking to (speakers), and 4) what they are talking about (subjects).

Significant variation may be demonstrated in the choices a person makes when they are talking to their boss or talking to their child. To the Boss - perfect pronunciation of technical words and jargon with some routine phrases that are only understood in the work environment. To the child - some pronunciations of words (such as "choo choo") that the child understands (but would not be appropriate for use with adults), simpler sentences, and occasionally incorrect morphology in an attempt to reduce the difficulty for the child to understand.

Of course we are always modifying how we communicate even with the same people depending on where we are and what we are talking about. We even see differences between people in the same situation talking about the same thing: Let's suppose that we wish to apologize to our boss for messing up the "Jones account." We are likely to say things like "Um, boss, I'm really sorry that I messed up the Jones account and I'll never do it again." whereas our boss is likely to say things like "Johnson, this is the last time this company can afford to absorb your mistakes. The next time you'll be fired!"

Now let's suppose that on a different occasion you've actually impressed the boss: "Johnson, I want to tell you how pleased I am with the work you put into the Smith account. Thanks to you, this company can afford to purchase a company car for your division." To which you reply "Thanks, boss!" Each person in each exchange is speaking in very different ways, yet these would all fit in the realm of Joos' "consultative clock." So understand that register variation is a grand, all encompassing idea, not just five little divisions of communicative behavior.

Over time we continue to develop our variation in register. As we encounter new topics, new people, and new places we observe and create new ways of modifying our communication. Register development is simply the continual expansion of our language skills. Each successive development includes every level of the Linguistic Pyramid as we adapt our phonology, morphology, syntax, semantics, etc to our new experiences.

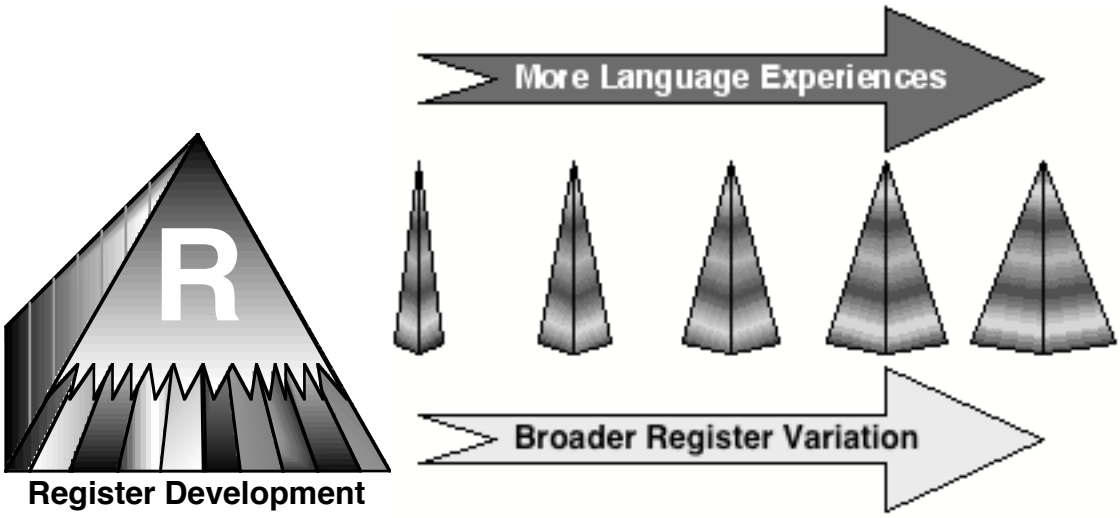

Figure F2.6 – Emerging Register Variations

2.4 Language Comprehension, Production, and Development
Now that we have defined the seven levels of the Linguistic Pyramid we should recognize that there is a difference between language comprehension and language production. Generally our language skills are greater in comprehension than production (we understand more than we can produce). We may understand a vast amount of vocabulary but only feel comfortable using a smaller part of that vocabulary. We might be able to figure out the meaning of a sentence such as "He obfuscated for so long that they eventually just gave up." The word "obfuscate" obviously means something non-cooperative, but without a dictionary, we may be very hesitant to try to use the word in our own sentence. We also can understand significant variations of our language including dialect, sociolect, individual stylistics, and register variation; however we are not likely to produce more than a small portion of the varieties which we can comprehend. Thus the linguistic pyramid must represent both Language Comprehension and Language Production.

As we have discussed previously, each language user also has the ability to vary their language production based on where they are, who they are talking with, what they are talking about, and how the communication is being expressed and perceived. These four variables constitute Register Variation; but our various registers are developed over time. Register Development depends upon multiple language experiences such as how language is used in a church, on a soccer field, in a classroom, and so on. Each experience broadens the entire Linguistic Pyramid as new pronunciations, words, word orders, and meanings are understood and incorporated into one's overall knowledge of a language.

There are actually four faces of the Linguistic Pyramid: 1) the bottom represents the phonetics of expressive and productive language. The three ascending sides represent 2) Language Comprehension, 3) Language Production, and 4) Register Variation (represented as a collection of thin slivers, each expanding the pyramid further across its base). Figure F2.7, below, identifies each of the four faces of the Linguistic Pyramid and the names of each adjoining face. Think of it as a spatial relation test. It might actually help if you photocopy Figure F2.7, cut along the lines and tape the pieces together into a pyramid.

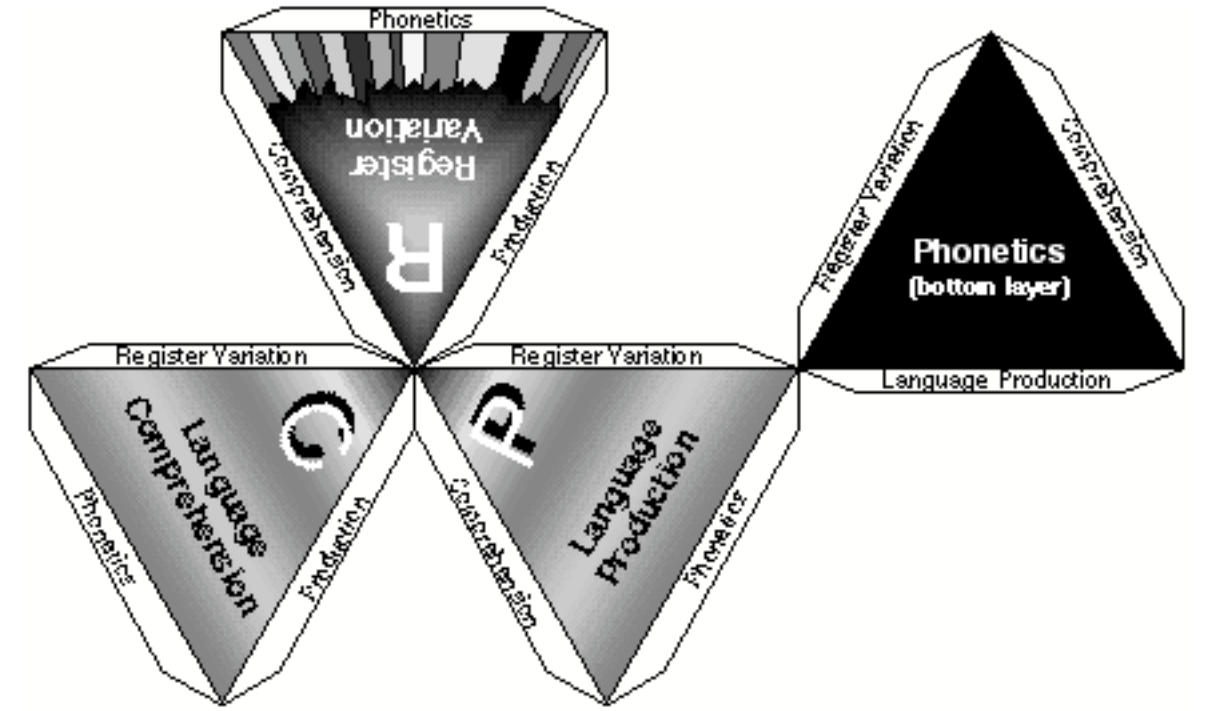

Figure F2.7 - Four Sides of the Linguistic Pyramid

We will revisit the Linguistic Pyramid throughout the rest of this text. It is the basis for scientifically understanding any language and we will eventually use it to systematically analyze the work of interpreting.

2.5 Language as a Subset of Communication

With all of the layers of the Linguistic Pyramid in place we should also recognize that language, as a specific subset of communication, includes both production and perception. Phonetics (the most basic layer of the Linguistic Pyramid) is the production of all language elements. Every other layer of the Linguistic Pyramid is built on that base for both production of language and the perception of language. The production of a message depends upon muscles moving anatomy. If these movements (or they're resulting evidence, such as writing) are then perceived, the perceiving mind begins with only the result of muscle movement. The mind can then reconstruct the message by applying successive layers of the Linguistic Pyramid to the incoming pieces.

We should also recognize that additional elements of communication will generally accompany the use of language. In other words, language rarely occurs in isolation from other simultaneous communication such as gestures, intonations patterns, facial expressions, etc. Therefore most attempts to communicate through language will include additional communication outside of language The graphic below places the linguistic pyramid within the previous representation of communication.

Figure F2.8 - The Mind's Linguistic Expression & Perception

Before we go much further it might be useful to review the elements of this graphic which were previously introduced. The sphere represents the Mind and its knowledge about communication, about people, about facts and topics, and about the physical setting. It also includes the conscious and/or unconscious intentions to communicate. The dark-shaded hexagon-cone represents communication perception or comprehension. The light-shaded hexagon-cone represents communication production. The Linguistic Pyramid rests between these last two elements, half representing language comprehension as a portion of overall communication comprehension, the other half representing language production as a portion of overall communication production; but as we discovered in the first part of this section, another mind is required to establish communication and is likewise required to establish linguistic communication which is represented in the following graphic.

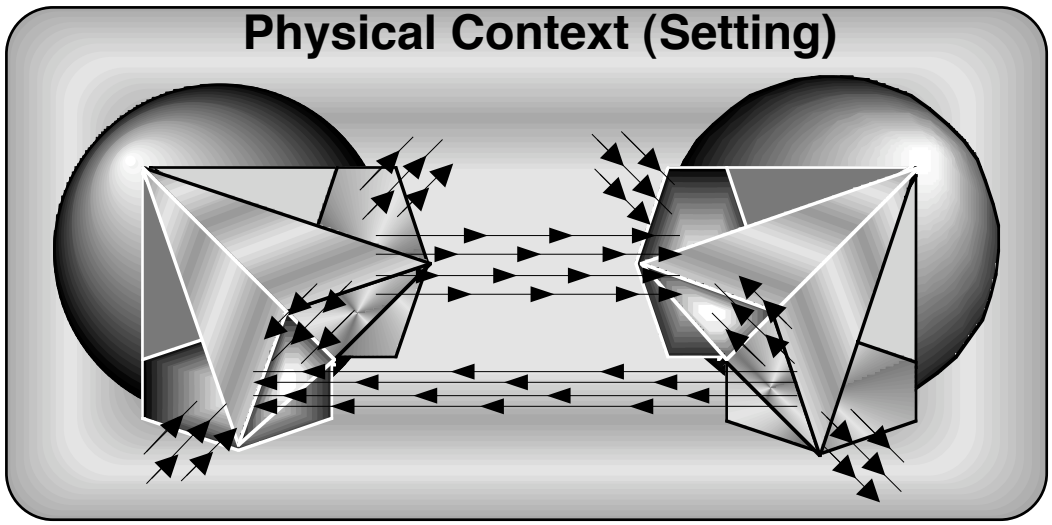

Figure F2.9 - Linguistic Communication Within a Physical Setting

This image recognizes the previously mentioned elements of linguistic communication and places them in a physical setting which provides context for understanding the message. The physical setting also influences the clarity of the communication as both participants perceive information from the environment which may have relevance to communication or may be visual or auditory noise. Likewise both participants potentially generate

movement which may be part of communication or may add to the visual or auditory noise in the environment. In the midst of all of this perception is each participant's ability to monitor their own production of communication, language, and noise.

Finally, it is important to recognize that all the elements of Register Variation are represented in this model: 1) Topic (intention of communication within the mind) 2) Language Use (as part of the overall communication), 3) Participants (at least two minds engaged in communication), and 4) Physical Setting (providing context and also influencing message clarity).

2.6 Pragmatics Revisited

Connected to the linguistic pyramid is the mind's intent for communication. We discussed this concept in the previous section and it can be referred to as Pragmatics: the study of the goals and results of communication. When we ask "Could you pass the pepper, please?" we aren't really looking for a "yes" or "no" answer. We really want the pepper and we want it before our food gets cold. When we ask "Could I ask a question?" we tend to ignore the fact that we just did. And when friends start lambasting a particularly nasty co-worker who, by chance, has just entered the room, you can quickly change the discussion to how odd the weather has been lately which (if your friends are paying attention) will let them know that it is time to stop the lambasting.

Pragmatics in the mind of the person expressing the communication encompasses the goals of the communication. One of the intentions mentioned above includes getting a container of pepper, but an accompanying goal is to obtain the pepper without being rude or insulting anyone. The following sentences might just as quickly move the pepper shaker:

1) "Give me the pepper."
2) "This food is pretty bland."

Sentence one might be seen as being less polite than "Could you pass the pepper, please?" while sentence two is more likely to insult the chef. Pragmatics includes all of the goals of the communication, not just the most obvious result. I once heard a linguistics professor ask his students about the possibilities of answering the question "Do you take this man to be your lawfully wedded husband?" The only acceptable answers are either "Yes" or "I do". It is theoretically possible to answer "No" or "I do not"; but I have never seen these responses or even heard about real situations where either response was uttered. There are still other ways of saying "yes," such as "uh-huh," "You're darn tootin'," or asking questions such as "Are you suggesting that I wouldn't?" or "Is the Pope Catholic?" The pragmatics of the situation eliminate these alternate ways of saying "yes". They are recognized as being unacceptable choices.

Pragmatics (in the mind of the perceiver of the communication) encompasses the results of the communication. The results are frequently different than the goals. Even the polite request "Could you pass the pepper, please?" can be understood by the chef as an insult. Responding to the question "Do you take this man to be your lawfully wedded husband?" with the words "Is the Pope Catholic?" might still be understood as an acceptable response by a few people who have the authority to perform marriages. Which responses are acceptable will depend greatly upon the people involved in the communication.

Deborah Tannen (1990) has done extensive work investigating the communication differences between men and women. Much of her research falls within the area of pragmatics and the different goals that men and women appear to have for communication. Tannen has demonstrated that women are likely to mention problems as a way of initiating conversation and look for other participants to relate their experiences with similar problems. Men are likely to perceive the problem as a request for help in finding a solution and are likely to work as quickly as they can toward a solution rather then expanding the topic into a conversation. Tannen's research also indicates that men tend to be very conscious of hierarchical relationships and work to avoid being seen as one-down in relation to another. Men often joke with each other using "put-downs" about each other, which, even jokingly, has the effect of raising the one issuing the put-down above the person being put-down. Women tend to issue compliments to each other, rather than issuing put-downs. The goals behind the communication are better understood within each gender group and are more likely to be misunderstood between the gender groups.

2.6.1 Grice's Maxims

A philosopher named H.P. Grice (1975) came up with what he called a Cooperative Principle which he suggested people use every time they talk. Part of this principle are four maxims related to 1) quality, 2) quantity, 3) relevance and 4) manner.

The maxim of quality suggests that we should only say those things we think are true and that we have evidence for. The maxim of quantity suggests that what we say shouldn't be so brief as to leave everyone confused about what we mean. Neither should we say so much that our audience gets bored. The maxim of relevance is simply that we stay on topic. The maxim of manner suggests that we present our information in an orderly and timely fashion and not be ambiguous.

In English or in ASL we can break these maxims by telling lies or making up information. That would break the maxim of quality. If a computer manual for beginners says that to solve a problem you have to reboot the computer, but nowhere does it say what you have to do to reboot (or what reboot means) then the manual is violating the maxim of quantity and is likely to be thrown at the computer by a frustrated office worker. If someone is asking directions and the person being asked starts to give the history of one of the landmarks, they are not being relevant to the task of giving directions. If the same person mixes up the directions and puts things out of order, then that person is breaking the maxim of manner. So basically Grice's maxims ask us all to do four things in normal daily conversation: be accurate, give the right amount of information necessary, be relevant and provide information clearly and concisely.

All of these maxims tie in to the code of ethics and what we do as interpreters. The maxim of quality says that we should give information that we believe to be true. When we interpret, the decision of "what is true" has already been made by the consumer. It is up to us to make sure that the information gets conveyed in the interpretation with the same convictions as the consumer.

The maxim of quantity says that we should give as much information as necessary. When we interpret, the decision of "what is necessary" had already been made by the consumer. It is up to us to make sure that all of that information gets conveyed in the interpretation.

The maxim of relevance says that what we say should be related to the conversation. This maxim helps us to make predictions about what is being said. When a person breaks this maxim, we often have to search to find a reason for the change in topic. Sometimes we realize that it is all related if we are patient enough for the speaker to get to the main point.

The maxim of manner says that we should not be incoherent in what we say. If the source message really is incoherent, however, then we are responsible for keeping it just as incoherent, especially in mental health therapy sessions. If the message is clear, we have to work to keep it just as clear in the interpretation.

2.6.2 Direct Speech Acts

When we use language, we generally are using it for a specific purpose: to get someone to do something in response: whether it is to perform an action or understand an argument. We can do this in very obvious ways with what are called direct speech acts

Direct speech acts can identify within them the act that they are making. Such acts could be commands, requests, promises, warnings, advice, even bets. It is also possible to perform direct speech acts without overtly identifying what the act is. Generally we can perform the same kinds of direct speech acts in the same ways with both English and ASL.

In English we might wish to ask a question for directions. We could say "I ask you to please tell me where the nearest metro is." Or we could say "Where is the nearest metro?" While the first version is more formal, both of these examples are requests for information. Although we don't often specify what we are doing in English, ASL does seem to make more use of performative verbs, such as ASK or QUESTION, in order to clarify requests from commands.

Often when we make a promise, however, we are likely to use the word promise, but we can still make promises without the word promise: "I promise I will pay you back tomorrow," v.s. "I will pay you back tomorrow."

In these examples we are actually doing something with the words we say. We can use our words to do many things. Juries can find people guilty of crimes. Judges can sentence people to years of prison time. Congress can declare war. Pastors can pronounce people husbands and wives. These are all actions which take place simply in the saying that they are so. To a smaller degree, we do the same things every day.
The most common things we do with words are attempts to direct some kind of action. We call these speech acts "directives." When we say "Go to the store and get a loaf of bread." we are using a directive. We can modify directives so that they are less offensive, such as "If you don't mind, please go to the store and get a loaf of bread." In different power relationships we are more or less likely to use modification. A military sergeant is less likely to modify a directive to new recruits. A freshman in high school might use more of them when talking to a senior. So basically the notion that we can do things with words is what direct speech acts are all about. By saying something we also are doing something.

Whenever we interpret, we need to be aware of what the speaker of the source text is trying to do with their words. Are they trying to convince people of something? Are they asking for information? Are they demanding something? We must ensure that our interpretations carry the same speech acts in them.
For example, suppose a hearing consumer says "What is your name?" This question is a request for information. If we do not convey it as a question, the deaf person may feel he has just been renamed "What." If we convey the request as a request in ASL, with proper facial grammar, then the deaf consumer is likely to respond in a way that the hearing consumer expected.

2.6.3 Indirect Speech Acts
While direct speech acts are obvious attempts at getting someone to do something, there are also less obvious ways which on the surface seem to be doing something other than what we really want. These are called indirect speech acts. Indirect speech acts occur when the form of the utterance does not overtly reveal what the real action is. A warning might be disguised as a promise, a command disguised as a request, advice disguised as a statement. Again there are similarities in how these are done between ASL and English, but there are cultural differences in how often indirect speech acts are used.

In English we might wish to have an action done but we might also not want to sound bossy. Instead of using a direct command such as "Close the window." We could ask "Could you close the window." We could even be less direct and say "Gosh it's cold in here." These last two are indirect speech acts. They are also directives, but they are disguised in forms other than direct requests. The first one, "Could you close the window," does specify the action we want, but it does not frame it within a command structure, but rather in a request form. The latter example, "Gosh it's cold in here," is a hint, which is even less direct than the first example because it does not even specify the action desired. It doesn't even specify that anyone should do anything at all, yet it can still function as a command if the speaker is in a position of authority.

If the speaker is not in a position of authority, then the same statements would be requests which could be refused. In this case the first example is now a direct speech act because it really is a request, one that could receive an answer of "no." The last example about being cold is still an indirect request so long as the person really did want someone to do something.

So basically the use of direct and indirect speech acts is happening all the time. Every time we say something we are at least telling other people to listen to us and perhaps agree with us. Beyond listening and agreeing we might even want people to do other things or we might wish to indicate that we will do certain things. We can present a case for everything ever said to be a speech act or even a set of speech acts with the purpose of accomplishing some goal.

Whenever we interpret, we must keep in mind what the goals of the speaker are. Is the speaker trying to convince us, inspire us, encourage us, warn us, promise things to us, ask things of us? Is the speaker being clear, through direct speech acts, that they want this kind of action; or are they using indirect speech acts to accomplish their goals. We can sometimes match the use of direct speech acts to direct speech acts; and indirect speech acts

to indirect speech acts; but ASL tends to be more direct while English is less direct. This means we must be able to convey direct speech acts in ASL into indirect speech acts in English, and we must also have the ability to convey indirect speech acts in English into direct speech acts in ASL. If the hearing consumer gives a hint as a form of a directive such as "There's a pencil on the table." we might wish to convey the directive in ASL as "GIVE-ME PENCIL, PLEASE." Likewise, a direct request in ASL like "TELL ME YOUR PHONE-NUMBER" might be conveyed as "Could I have your phone number (please)?"

2.6.4 Conversational Implicature

"Eat your waffle. You will become strong." These two sentences suggest a cause and effect relationship between them. Such connections between ideas is called *Conversational Implicature*. In reality these are two separate sentences. Eating a waffle may have no effect on one's strength; but the juxtaposition of these two sentences would leave you believing that you had just been told that waffles make you strong.

Advertisers depend upon implicatures so that consumers will make connections between ideas that have not been clearly stated. For example, the phrase "New and Improved" does not state what the "Old and Unimproved" were. Each time a corn flake is made, it is newer than those made the day before; and if there was ever an improvement made, even a hundred years ago, then today's cornflake is improved as compared to the corn flakes made a hundred-and-one years ago. What the consumer understands is that today's corn flake is different and better than yesterday's corn flake, but the advertisement didn't make that claim. It is actually very likely that today's corn flake is identical to yesterday's corn flake; the only thing different is the advertising on the box.

I once read a spaghetti sauce label which made the claim that the contents of the can had "More than five times the amount of meat" contained in a rival's product. When I looked at the rival's product, I noticed that the rival's sauce contained no meat whatsoever. The advertising made two implications at once: 1) it implied that the rival product did contained some amount of meat and 2) it implied that there was an incredibly larger quantity of meat contained in the advertised product. Notice that the advertised product was said to have "more" than five times the amount of meat. It did not claim to have exactly five times the amount of meat – if it was exactly equal to five times the amount of meat then it would also have had no meat at all (five times zero still equals zero). Given that the rival product contained no meat, the advertised product merely needed one single scrap of meat in order to live up to its claim. It could even have correctly claimed that it had more than ten-million times the meat of the other product!

Conversational implicatures provide a particular area of concern for interpreters. Often the implicature is indeed intended and is actually essential for creating a target text which will result in the target consumer understanding the source consumer's intentions. At the same time, it is always possible for the source consumer to claim "I didn't say that" and be technically accurate. If this happens then it may cause consumers to doubt an interpreter's abilities. When in doubt about the source consumer's intentions, the interpreter should strive to maintain the separate pieces of information. This allows the target consumer to make their own conversational implicatures.

2.7 Language Fluency

A very significant factor to consider is the fluency of the people communicating with each other. Children achieve basic fluency at the point that their ability meets the definition of language. So what is the definition again? Language is the systematic use of symbols to express and perceive information between members of a community in which the system is rule-governed, has infinite production possibilities, is intergenerational, and changes over time.

Children begin the road to fluency by learning how to make the words of the language (systematic use of symbols) while using these words to express and perceive information with other people. If the children are acquiring the language of adults then it is intergenerational. Children finally achieve fluency when they start to apply rules to the language they are learning so that they create new sentences that they have never heard before. All of this normally happens by the time a child is four years old. This doesn't mean that there is no more to learn, just that we can now say the child is fluent in her first language(s). This process is called language acquisition, rather than language learning, because the child is not taught the rules; instead, the child figures them out all on her own.

Adults generally begin to the road to second language fluency from the knowledge they already have about their native language(s). There is significant research which indicates that after puberty, when a child becomes an adult, the ability to acquire a language is significantly diminished. This means that adults generally have to learn at least part of their second language through direct instruction about vocabulary and rules. As a general rule, the younger one is when they start to learn a second language, the easier it will be to attain fluency.

So what is fluency? If a child achieves fluency by the age of four, how long does it take an adult to achieve it? Of course the answer is "it depends" but the same test applies to both. If the adult is systematically using symbols to express and perceive information with other people (usually achieved halfway through an introductory class) then the road to fluency has begun. The rest of the battle is that the use is rule-governed, using the rules of the language being learned, not the rules of the native language(s) already known to the adult learner. Once the adult can intuitively express new and grammatical sentences then that adult has achieved fluency. We generally should expect that level of skill before completion of intermediate-level classes.

It is important to remember two sides of the Linguistic Pyramid: Language Comprehension and Language Production. Generally we have greater ability to understand a message than to produce it. Comprehension is where true fluency begins. Second-language learners generally begin with a greater ability to produce the elements of language. They struggle to comprehend spontaneous information but can easily make themselves understood. People are not fluent in a language until their ability to comprehend at least matches their ability to produce the language.

2.7.1 BICS and CALP

J. Cummins (1984) proposed two distinct kinds of language fluency. . One is the ability to exchange greetings, make purchases, issue complaints and just generally interact with other people. This is known as Basic Interpersonal Communication Skills (BICS). A higher level of fluency is the ability to use more complex grammatical structures of the language in order to understand and create academic lectures, understand legal procedures, and participate in technical discussions. This is known as Cognitive Academic Language Proficiency (CALP). With these two labels it is possible to better define the kind of fluency a person has.

During an internationally publicized California trial in the 1990s there was much confusion about why a witness needed an interpreter when she could speak perfectly intelligible English sentences. Her native language was Spanish and the court interpreter would provide interpretations of the questions from English into Spanish, but she would respond directly in clear English. If we understand the difference between BICS and CALP, we can understand the need for the interpreter. The language of a courtroom is very formal, even painfully technical in the precision used to ask questions. Sometimes this precise use of questions can then be used against a witness who may have misunderstood the intent of different questions and appear to be changing their testimony. The value of having an interpreter was to ensure that the witness clearly understood the questions, which required Cognitive Academic Language Proficiency in English. The responses (often as simple as "yes" or "no") rarely required more than Basic Interpersonal Communication Skills and therefore could be communicated directly rather than through the services of the interpreter.

BICS provides basic conversational fluency and can lead to a perception that a person is completely fluent in a language. CALP begins when a person learns to read and begins to explore academic and technical uses of a language. BICS fluency is more easily achieved but may depend on memorized routine phrases more than true ability to generate original grammatical sentences. CALP fluency usually requires BICS fluency first. CALP fluency is the level required to function as a truly professional interpreter.

2.7.2 A, B, and C Languages

Now that we have a working understanding of fluency, we can explore another set of labels which help us define the linguistic skills of interpreters. These labels are "A", "B", and "C" Languages. These labels help us to quickly identify the strong, middle, and weak language abilities of an interpreter. An "A" language is one in which the interpreter not only has Cognitive Academic Language Proficiency, but is also considered natively fluent (or near-native). Interpreters who were raised through puberty in bilingual environments will usually have two "A" languages. A person who grows up using one language then learns others later in life will probably

only have one "A" language. If that person has managed to eliminate any hint of an accent and can pass as a native user of a language then she has become "near-native" and can count that language as an "A" language.

The next category is the "B" language. "B" languages are those languages which are controlled into CALP, but not to the level of native fluency. In my own experience, I grew up using English as my native language and have English as my "A" language. Although my fluency in ASL is sufficient to attain RID Certification as an interpreter, subtle aspects of my language use will reveal to a careful observer that I am not a native user of the language. Therefore ASL is my "B" language.

"A" languages are not always one's native language. A friend of mine, Vut, grew up in Thailand and then moved to the US when he was seven. Vut completed a Bachelors degree in Engineering and worked with the US Navy. He clearly has both BICS and CALP skills in English, but it is still noticeable that English is not his native language. English is Vut's "B" language. Although he still knows Thai and uses it regularly with his family, he only knows how to speak Thai at a BICS level of fluency – he never received any of his education in Thai. When he visited Thailand as an adult, he found that he could not read the newspaper, advertisements, or even street signs. He felt like a child when asking for directions because although he could communicate and understand the responses, he could not read for himself to know when he had arrived at the correct street. Although it is his native language, Thai functions as a "C" language for Vut.

"C" languages are languages that are not known beyond BICS fluency. They may be useful for basic communication as long as both parties to the communication are willing to negotiate meaning. If Vut were to relocate to Thailand, he might eventually achieve CALP in Thai, which combined with his native pronunciation and BICS abilities would allow Thai – currently his "C" language – to become an "A" language. As a general rule, interpretations are most likely to be idiomatic and culturally complete when the target language is one of the interpreter's "A" languages. The range of interpretations into a "B" language are likely to be either literal or a mixture of literal and idiomatic, but not likely to be wholly idiomatic. Therefore there is a general preference for interpreters to work into one of their "A" languages rather than their "B" languages. It is unacceptable for an interpreter to attempt professional work involving any of their "C" languages.

2.7.3 Multilingual, Monolingual, and Semilingual Language Abilities

Fluency in language for human beings is not guaranteed. Fluency requires social interactions with other community members who share the same language. If there are multiple languages within the community (or multiple communities with different languages) then children are likely to naturally acquire the language(s) that they are regularly exposed to. Exposure to language requires access to the modality of expression for the language channels being used. This means that a deaf child does not have natural exposure to spoken English expressed through sound. Likewise a blind child does not have natural exposure to written English expressed through images. Modifications which transfer sound to image for a deaf child (such as manual cues), or image to texture for a blind child (such as Braille) can provide access. Language access can only become true language exposure if the child regularly encounters the language in its accessible form. Thus the use of manual cues may provide access, but deaf children must be regularly exposed to this visual encoding of spoken languages if they are to gain fluency via manual cues. Likewise the blind child must have regular exposure to written language via Braille in order to gain fluency through the encoding system of Braille.

So there are two key variables: access and regular exposure. I know a family where the children's grandmother is monolingual in Cantonese. For one year she lived with her daughter and son-in-law so that she had regular daily interaction with her grandchildren. The children understood her and were beginning to develop BICS skills in Cantonese. Once the grandmother relocated to another city the children no longer had regular exposure to Cantonese. The children now have no significant ability to speak or understand anything in Cantonese.
A child who does not yet have BICS fluency in any language is considered to be Alingual. This may occur where the child does not have either access or regular exposure to any language. The child may know some basic vocabulary items but will not consistently demonstrate grammatical sentences in the language. If the child has this kind of knowledge of more than one language then the child is considered to be Semilingual. One of the greatest dangers is that an Alingual or Semilingual child will fail to gain fluency in a language before puberty. Research evidence suggests that once the physical changes of puberty have taken place, the human mind is no longer capable of attaining native fluency in a first language.

Most children easily attain at least Monolingual fluency in a language, meaning that they have at least BICS skill in one language. But research also indicates that a child who has attained monolingual fluency prior to puberty will retain some ability to gain fluency in any number of additional languages.

If a person gains fluency in two languages then the child is Bilingual. The challenge for a child to become bilingual is to have access and regular exposure to both languages with predictable patterns for the use of each language. This means that the child will know when each language is the right one to use. One example of predictable patterns of language use include having some people who only use one language while other people only use another (such as a mother who speaks French and a father who speaks German). Predictable patterns of language use can also include the use of one language only in certain settings (such as special community events) or the use of one language only for specific purposes (such as in religious services).

If a child receives more accessible exposure to a language, then that child will usually gain greater relative fluency in that child language. If a child is only exposed to Hebrew during religious services and otherwise only exposed to English then the child is not likely to even gain BICS skills in Hebrew. A deaf child consistently exposed to spoken English through manual cues at home and to American Sign Language at school is very likely to attain balanced bilingualism. Balanced Bilingualism occurs when a person has achieved equal levels of fluency in both languages (such as having BICS and CALP in both languages).

If a person gains at least BICS fluency in three or more languages then the person is Multilingual. While multilingualism is possible, it is less common than bilingualism. The primary reason for this is that multilingualism requires regular exposure to three or more languages in three or more language communities. There are very few stable multilingual communities. The conditions which lead to multilingualism are unlikely except in the cases of people moving to a new language community, marrying into a new language community, or both.

2.8 Summary

This section has presented a number of important components of language. We began by investigating the differences between communication and language. Then we identified three distinct channels of language (signed, spoken, and written) along with a wide variety of Language Encoding Systems. Next the concept of the Linguistic Pyramid was introduced which identified seven interactive levels (phonetics, phonology, morphology, syntax, semantics, discourse, and stylistics) and the concept of Register Variation, which crosses all of these levels. We introduced the concept of metalinguistics, meaning the use of language to talk about language and finally, presented the concepts of Language Comprehension, Language Production, and Pragmatics.

We explored different kinds of fluency starting with Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP). We identified the differences between “A”, “B”, and “C” languages and how language fluency in one language can affect the process of learning a second language. Next we explored the labels of Alingual, Semilingual, Monolingual, Bilingual, and Multilingual language abilities.

2.8.1 Review Questions

1. How is language different than communication?
2. What researcher first brought attention to signed languages as legitimate languages?
3. How many language channels are there?
4. Which senses are used to detect language?
5. What is the difference between Language Channels and Modes of Perception?
6. How many levels are there in the Linguistic Pyramid?
7. What is the most basic, lowest level of the Linguistic Pyramid
8. What is the difference between phonology and phonetics?
9. Which two levels of the Linguistic Pyramid relate to grammar?
10. What is the difference between morphology and semantics?
11. What is the difference between discourse and stylistics?
12. What four variables contribute to the concept of register
13. Aside from Phonetics, at the base of the Linguistic Pyramid, what do each of the three remaining faces of the pyramid represent?
14. What do the acronyms BICS and CALP represent?
15. What kinds of language fluency are meant by the labels “A”, “B”, and “C” languages?
16. What is the difference between Alingual and Semilingual language ability?
17. What two important variables must be present to attain at least Monolingual fluency in a language?
18. What does balanced bilingualism mean?
19. What kinds of conditions would lead to a person becoming multilingual?

2.8.2 Suggested Activities

1. Think of three complete sentences (in either a signed or spoken language) which are each composed of only one word. What kinds of sentences are possible?
2. Watch or Listen to a story (in either a signed or spoken language). Identify all the nouns in the first minute of the story. How many were repeated? How many were replaced by pronouns? How many are conceptually related to one another? Now try retelling that same first minute of the story without using any of the nouns more than one time and without using any pronouns at all. How different does it seem from the original? Does it still make sense? Now try telling the same first minute of the story without any nouns and only using the appropriate pronouns. How interesting is the story without nouns?
3. Watch or Listen to a lecture (in either a signed or spoken language). What discourse markers are used to organize the lecture? What parts of the lecture help you predict parts that are coming up later? What parts review previous information? What does the presenter do to let you know that a piece of information is particularly important?

APPENDIX F3 – LANGUAGE VARIATION

Language Variation

Rasmus looked closely at Timoth and said "You're serious?"

Timoth repeated "Yes, he was signing English."

"Surely you mean fingerspelling!?"

"No. Signing English."

"There is no such thing as signing English! You can write it or speak it. You can encode the writing with Braille, fingerspelling, semaphore, Morse, typed text, or squiggly lines on paper. You can encode the speaking with magnetic tape, radio frequencies, cues, or various combinations of the larynx, tongue, and oral cavity. But there is no way to sign any spoken language."

"I saw him doing it."

"Tell me exactly what you saw."

Timoth went into the best detail possible. Signs and sign pieces that could be matched to English syntax. Mouth movement patterns that matched English words.

Rasmus looked Timoth in the eye again. "So what makes you think all of that was English?"

Timoth answered, "Because I could hear English in my head. It made sense to me and it didn't look like the signing we see here in the community."

"Did it ever occur to you that you know English?"

"What do you mean? Of course I know English. What has that to do with anything?"

Rasmus smiled. "You, Timoth, have used your native-language knowledge to process another person's communication output. You saw some similarities in syntax and you came to the conclusion that his communication output was the same as one of your native languages."

"You mean it wasn't English?"

"He has no more ability to sign English than you or I are able to speak OSL!"

"Well if it wasn't English, then what was it?"

"Timoth, you have much to learn about variety in languages. You recognized the signs, yes?"

"Of course. If I hadn't understood the signs, how could I have communicated with him?"

"And what language do the signs come from, Our Sign Language or English?"

Timoth fingerspelled "O-S-L"

"Communication is easy, Timoth. Language is hard. An ape can communicate, but the only primates to ever acquire or learn a language are called humans. That doesn't mean that we always use language to communicate, but it does give us the edge."

Timoth stared at the ground for a moment, then looked at Rasmus, "You mean that he wasn't using any language at all?"

Rasmus laughed. "How am I supposed to know? You met one person. Are there others who share his communication system? Is it orderly and rule-governed? What is its history? Until we know the answers to these questions it is not possible to determine whether you saw language or merely communication."

Timoth smiled and looked at Rasmus. "So you don't know all the answers!"

"No, Timoth. But I do know many of the questions."

Chapter 3
Language Variation

"May You Live in Interesting Times." - Ancient Chinese Curse

3.0 Overview
In any language community there will be variety of how the language is used with other people. There are many factors which influence these varieties. Everyone has their own idiosyncrasies in how they use their language including different ways of talking with different kinds of people. As the previous chapter mentioned, Register Variation can account for the changes in the way we pronounce our words, which words we use, what we mean by our words, and even what kind of word orders we use.

When we communicate with children or foreigners, we tend to use the most basic patterns of our language with them because we assume that they will not understand the more complicated patterns of our language. In English we may take a passive construction such as "John was delivered the summons last night" and convey it very differently to a non-native user of English: "The police gave John a paper last night. The paper says that John must go to a court of law." Every language on earth has basic sentence patterns and rules which allow transformations from those basic patterns to more complex sentences.

This chapter begins with a brief discussion of three basic factors influencing communication and then provides an introduction to language variation. The primary focus of this chapter is the history of variation research regarding American Sign Language and the presentation of a revised model of language contact between ASL and English (which can be generally applied to describe language contact between signed and spoken languages world-wide).

3.1 Language Variation
There are five primary kinds of variation in language: Dialect, Sociolect, Register Variation, Language Fluency, and Language Contact. We have already investigated Register Variation as part of the Linguistic Pyramid: every language user is likely to vary their language use based on register (how they are communicating, who is talking to whom, about what topic, and in what setting). Language Fluency is of concern primarily when a person has not had full access to a language during childhood. Register and Fluency can explain language variation within a single person.

The remaining labels (Dialect, Sociolect, and Language Contact) identify variation between users of language. Dialect (also known as Regional Dialect) refers to variation in language based on geography, such as differences between folks from Sydney, London, Toronto, and Dallas. Sociolect (also known as Social Dialect) refers to variation in language based on any of four subvariables: 1) social class (such as differences between the aristocracy and East Enders in London), 2) gender (differences between men and women), 3) ethnicity (differences between cultures which share the same language), and 4) generation membership (chronological differences between younger and older users of the language). Language Contact refers to variation in language based on the interaction of two or more languages.

3.1.1 Dialect Variation
Dialects are variations of a language which are used in differing geographical regions. Generally this regional variation of a language is intelligible to regional neighbors who speak other dialects of the same language. The labels of language and dialect may be employed for political purposes, however. Swedish and Norwegian are reported to be mutually intelligible and ought to be considered dialects of the same language. But since each region has a different government, politics dictates that they be identified as distinct languages: Norway wouldn't want to suggest that their national language is a dialect of Swedish; and neither would Sweden want to acknowledge that their national language is a dialect of Norwegian. So Sweden and Norway have mutually intelligible languages which really ought to be considered dialects of the same language.

China offers the opposite dilemma. China is a vast country with over one billion inhabitants. Written Chinese is used throughout the country, but written Chinese is not a phonetic system: its symbols don't identify any aspect

of pronunciation. Written Chinese is built out of ideographs which represent meaning independent of sound. Native users of this written system need not share the same spoken language at all. In fact, at the extreme corners of the country, Chinese people speak in ways that are not mutually intelligible at all. Officially, the Chinese government considers each of these different languages as dialects of one national language: Chinese. Although many of the "dialects" of Chinese are not mutually intelligible, they are called dialects rather than languages in order to provide the appearance of cohesion within the country.

The variants of English between Australia, Canada, Great Britain, and the United States are all correctly identified as Dialects. They each have variations in vocabulary and in usage of the language, but remain, for the most part, mutually intelligible. The Signed Languages of each location, however, are less mutually intelligible. American Sign Language is used in both the United States and Canada, but parts of Canada also use Quebec Sign Language (LSQ). British Sign Language (BSL) and Australian Sign Language (Auslan) are historically related to each other but only distantly related to American Sign Language. ASL, Auslan, BSL, and LSQ all have historical relations to French Sign Language, but all are now distinct languages, not dialects of any one single language.

3.1.2 Sociolect Variation

Sociolects are differences in language production and use based on social group. These social groups may be based on class, gender, ethnicity, or generational differences. Eric Shapiro (1993) performed interviews with two deaf adult women of different socio-economic status. His results indicated some differences in the use of nonmanual elements of ASL and also in the length of utterance with the higher class status linked to reduced nonmanuals and increased utterance lengths.

Several attempts at discerning differences in the use of ASL between men and women have been attempted (Mansfield, 1993; McMurtie, 1993; Bridges, 1992; and Nowell, 1989). Nowell (1989) attempted to find differences in turn-taking strategies and length of turn between a man and woman during an interview, but was unable to identify any statistically significant difference except between on-task versus off-task communication where the woman demonstrated a larger portion of communication between interview segments when the researcher would leave the room but the videocamera continued to collect data. McMurtie (1993) investigated devices for providing feedback during ASL conversations between four deaf adults, two male and two female. Her results indicate no significant differences between the men and women, who all used four different feedback markers (head nods, smiles, the sign CORRECT, and the sign YES). Malloy and Doner (1995) investigated elements of cohesion in an ASL conversation between a man and woman and determined only a slight differences in the use of reiteration (used more by the man).

Bridges (1992) investigated and identified a variety of lexical differences in the use of sexual signs between men and women. Mansfield (1993) demonstrated lexical differences between men and women when discussing items used for feminine hygiene and other objects generally associated with either men or women. Therefore the only significant variation in ASL between men and women appears to be a difference in some lexical items.
Lexical difference was also the most significant variation found in research of ethnic variation in ASL (Woodward, 1976; Aramburo, 1989; Guggenheim, 1992). Bruce (1993) identified only a slight difference in the production of head nods for feedback during interviews conducted between black and white versus black and black Deaf people.
Studies in generational variation in ASL include Gartner and Watts (1996), who identified lexical variation, and Blattberg, et. al (1995) who determined not only that older signers make more frequent use of fingerspelling, but also use it in a distinctly different, cohesive way. They found that older deaf signers would spell items in various spacial locations to associate the fingerspelled item to previous portions of their discourse.

Across all four possible influences upon sociolect (social class, gender, ethnicity, and generation) the most significant impact noted within ASL to date has been upon lexical choice – the words. Less significant differences have been noted for the amount of nonmanual features and the use of feedback, and cohesion (except for the use of fingerspelling as an element for cohesion among older signers, which does appear to be a significant difference). This research indicates that the most likely element of sociolect variation to impact upon the interpreting process will be either recognizing or being able to produce the correct ASL vocabulary given the gender, ethnicity, and generation of the consumers.

3.1.3 Register Variation

Register Variation was reviewed in Chapter Two as part of the Linguistic Pyramid. Register variation can account for differences in phonology, morphology, syntax and discourse strategies. In short, Register Variation is simply the influence of four variables upon communication: participants, topic, physical context, and expressive modality. In even simpler terms these boil down to Who, What, Where, and How. For a more complete explanation, review section 2.3.8.

3.1.4 Idiomatic Language Use

We can expand the concept of Register Variation to an important concept for interpreting: Idiomatic use of language. Idiomatic use of language occurs when a message is produced in such a way that it appears to be completely normal and natural. It is very likely that a native speaker of a language will demonstrate idiomatic language use. In fact, we depend on idiomatic language use as one means of determining that a person is a native language user. If the person uses grammatical, yet "odd" sentences then the language use is not idiomatic. For example, I once saw a sign in a restaurant which said "English speeched goodly here" which technically is a grammatical sentence, but was obviously not written by a native user of the language. Idiomatic language use means that the grammatical structure is not only correct but appropriate and that the words are commonly used for the intended meaning.

3.1.5 Language Contact

Language Contact occurs when bilinguals interact and switch between elements of their shared languages. They may begin conversing in one language, momentarily borrow a word or phrase from another language, and then return to using the first language. This is known as Code Switching. Another form of language contact involves a more continuous mixing of language elements, such as using the vocabulary of one language and the syntax of another. This is known as Code Mixing. Variation in ASL due to Language Contact has been researched much more than ASL variation related to Dialect or Sociolect and therefore the next two sections of this chapter is devoted to it.

3.2 The History of ASL Language Contact Research

In the late 1950's William Stokoe began collecting evidence that American Sign Language was indeed a language. Since that time there has been a growing understanding of the complexity of ASL, the general rules for producing words, ordering words, and the shades of meaning that those words convey. This does not mean that ASL had no rules prior to the 1960s. An effort (by the National Association of the Deaf) began in 1913 to document and preserve American Sign Language on film. These historic films document the rule-governed use of ASL long before the language was ever subjected to linguistic analysis. Clearly, the language was flourishing long before 1913. There are records of the existence of signed languages used among deaf people prior to 1817. That was the year that United States of America witnessed the opening of its first permanent school for deaf children. Hartford, Connecticut was where deaf students from across New England interacted with their teacher, Laurent Clerc, a deaf man from France. Clerc was tri-lingual (at least) knowing French Sign Language, French, and English. He would become influential in the future of American Sign Language as his sign language and those of his students merged into post-1817 American Sign Language.

As the understanding of ASL as a language developed, a separate movement was also taking place which sought to expand the use of ASL as a tool for teaching English. This movement began in the 1960's and initially sought to borrow ASL words in an attempt to combine them with English syntax. This resulted in several manual English codes. The development of these codes and the continued exploration of American Sign Language created a need to distinguish between signing styles which reflected the language of American Sign Language and signing styles which did not reflect a natural signed language but rather reflected the encoding of English.

In the midst of this attempt to delineate language from code came an observation of language variety first noted by William Stokoe and then expanded upon by James Woodward. Stokoe had noticed that his students would structure their sign production one way when they talked with him and another way when they communicated with each other. Woodward studied this variation in language use and gave it the title "Pidgin Sign English" commonly known by the acronym PSE. The use of the word "Pidgin" is not appropriate for normal language contact, as we will further explore in Chapter Four.

3.2.1 Stokoe's Research on ASL Variation

William Stokoe (1960) first introduced the idea of a single line, or continuum, representing "possible communication behavior of American deaf persons" which would have "... at one end a completely normal American English exchange, the 'listener' with perfect lip reading ability receiving all that the speaker with perfect articulation is saying. At the opposite end would be a completely visual exchange, the 'speaker' and the 'hearer' using only a system of gesture, facial expression, and manual configurations as symbols. Of course, neither end is reached in actuality." (p 31) This line is represented below in figure F3.1.

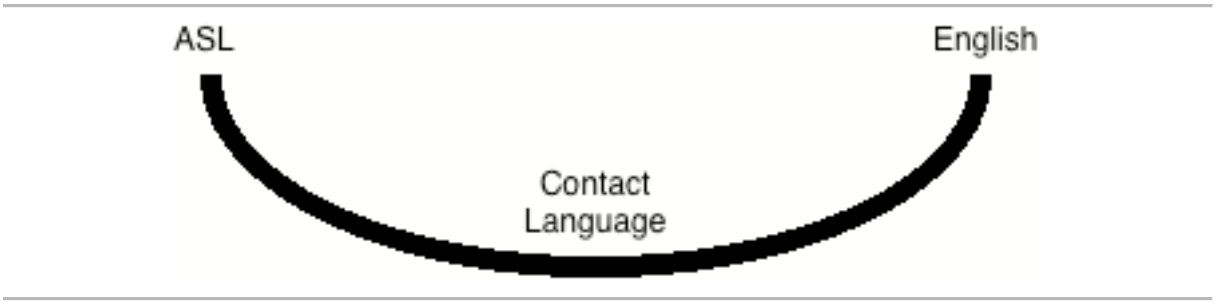

Figure F3.1 - Traditional ASL-English Continuum

But as soon as Stokoe proposes this representation of communication in the deaf community, he immediately dismisses it: "... the actually observed communication is a combinations in all degrees of these two, with or without vocal, whispered, or silent articulation as supplement or accompaniment." (p 32). Thus Stokoe proposes a two-dimensional line and then indicates that much more than two dimensions are present.

Stokoe first noted variety in ASL in his 1960 monograph and suggested that the level of bilingualism in the signer may influence their language use: "Presumably their language habits will be more or less affected by the extent to which English is their second language...but two languages that can be used simultaneously (at least at a word level) may be more strongly drawn into syntactical conformity" (p 80, parenthesis in original).

Stokoe explored other researcher's description of variation in language and encountered Charles Ferguson's use of the word Diglossia, which is the use of one language for formal (high) situations and another language for informal (low) situations. Stokoe (1969) formally proposed that Ferguson's description of diglossia be applied to the language variation in the deaf community. English structures appeared to influence the ordering of ASL signs in formal, or "high" situations. Less English structures appeared in informal, or "low" situations.

3.2.2 Woodward's Research on ASL Variation

James Woodward mentioned diglossia in 1972 and suggested ways of studying it. In the same paper he mentions what he called "pidgin sign English" as the resulting communication of signing and speaking at the same time. Thus from Woodward's initial review, "pidgin sign English" referred only to the mixture of language which occurred from combining two communication modes to express a single message while diglossia referred to the varieties of language use regarding setting, topic and activity. He suggests that ASL and American English occupy different ends of a "diglossic scale".

Within one year, Woodward had formally coined the acronym "PSE" and published a formal, although preliminary, description of it. Within this paper Woodward acknowledges that research on and definitions of Pidgin and Creole languages are still in development. Woodward describes "PSE" as having the following characteristics: 1) Articles (not a feature of ASL) may or may not be used, if used typically they are spellings of the English words "A" and "T-H-E". 2) Plurality by reduplication (an ASL feature) may or may not be used. Marking the plurality separately (an English feature) is not generally used. 3) Use of the copula (not a feature of ASL) is generally represented by a single ASL sign commonly glossed as TRUE. 4) Progressive aspect (an ASL feature) is sometimes maintained through verb reduplication. 5) Perfective aspect (an ASL feature) is also sometimes maintained through the use of the sign commonly glossed as FINISH (Woodward notes that PSE users tend to use a specific variety of this sign which is more restricted in general ASL usage, but does not fully describe these differences). Of all five of these characteristics of "PSE" it is interesting to note that the methods

used to represent them all come from ASL. In other words, already existing components of ASL are being utilized to represent information in ways that parallel English language structures.

In another 1973 paper, Woodward refers to the diglossic scale of his 1972 work as "a continuum of language varieties between ASL and Manual English". In truth, the 1972 work did not indicate that this continuum moved between two manually represented forms. This marks a shift in Woodward's discussion of the representations of English used by the Deaf community and may reflect rapid developments and changes of thought in sign language research in the early 1970s. Of concern is the notion that these representations of language varieties do not overlap. While both suggest that the language of ASL occupy one end of the continuum, the other end is either occupied by a language - American English, or by a manual representation of the language - Manual English. The first (1972) continuum moves between languages but across modality (signed verses spoken/written). The second (1973) continuum maintains a single modality but moves between language and encoding of language. In the first model, PSE represents the use of two modalities at the same time - simultaneous communication (Woodward's initial proposal of 1972). In the second, PSE represents signing with influences of both Manual English (which is not clearly defined) and ASL, but makes no predictions about simultaneous productions in spoken English.

3.2.3 Other Research on English-Influenced ASL Variation

Reilly and McIntire (1980) noted that "PSE" utilized many English structures for creating complex sentences which is atypical of pidgin languages in general. Hoffmeister and Shettle (1983) identified three variables affecting the variation of deaf, adult use of ASL with different audiences: 1) ASL fluency, 2) Non-vocal expressiveness ("body language"), and 3) ASL-associated traits (reduced mouthing of English words and repetition, or restatement, of facts). Each of these factors was generated at maximal levels with deaf adult audiences, at minimal levels with hearing adult audiences, and in between the two with an 11-year old deaf child.

Dennis Cokely (1983, 1984) reassessed the issue of "PSE" by first reviewing what have become more complete definitions of both pidgins and the process of pidginization. Cokely concludes that the phenomenon described by Woodward does not legitimately constitute a pidgin, even though some of the elements of pidginization are evident. Specifically Cokely proposes that these varieties of ASL constitute attempts by hearing learners of ASL (which may include errors, over generalizations of ASL and influences of English) to communicate which are then assessed by deaf people as "learner's grammar." The deaf people then respond by using a reduced form of ASL or "foreigner register" which is used to assist communication with people not yet fluent in the target language. While Cokely's explanation may not include all instances of "PSE", it does place the language use clearly as part of ASL, not a separate entity lost somewhere between two languages.

Lou Fant (1990) while not researching the mix of ASL and English cautions us to understand that ASL has within it the ability for significant variation:

There is no such thing as "pure" ASL any more than there is such a thing as "pure" English. There is good ASL, fair ASL, and poor ASL, grammatically speaking, but there is no "pure" ASL. When someone talks about "pure" or "real" ASL, they generally mean that which is used by deaf people in relaxed, social settings, or the sort of ASL used for telling stories and jokes. A moment's reflection should reveal that to depict ASL as grammatically correct and good only when it is used in those circumstances demeans the language. (Fant, 1990: 30)

Lucas and Valli (1992) extensively researched this area and found significant variety in what they call "Contact Signing". They not only found instances of Contact Signing between most (although not all) interactions of deaf and hearing people, but they also found instances of Contact Signing in some interactions of deaf people with other deaf people. Their analysis indicates that Contact Signing consists of the use of grammatically simple ASL word orders while generally avoiding the use of many complex ASL elements (such as nonmanual negation, aspectual inflection, conditionals, rhetorical questions, and topicalization) yet including some basic elements of English (such as mouthing of English words, use of uniquely English word order, signs for English morphological inflections, and prepositions). Lucas and Valli emphasized that these results came from contact between the two languages of English and ASL and did not constitute an otherwise natural variety of ASL.

3.2.4 Summary of English-Influenced ASL Variation

It is interesting to note that nearly all of the documented elements attributed to English were produced using manual and non-manual components already present within ASL, such as fingerspelling and mouth movement patterns. The single exception is the use of word orders which are unique to English. While the result is clearly influenced by English, only certain parts of syntax seem inherently limited to English. In other words, all the elements composing the signs themselves exist within the confines of American Sign Language (either they are ASL signs or are modified ASL signs). It is only certain word orders which seem to be uniquely influenced by English.

The various labels of Diglossia, Pidgin, and Foreigner Talk already have specific meanings and cannot be appropriately used to describe English-influenced ASL variation. Contact Signing appears to be the only accurate label. It is important to note that in order to identify the difference between ASL and Contact Signing we must observe elements which are unique to English, not merely in overlap between ASL and English. In other words we must see 1) the mouthing of English words, 2) the use of uniquely English word order, 3) signs for English morphological inflections, and 4) prepositions. Only by identifying these four features can clearly determine that an utterance demonstrated Contact Signing. We have already noted the potential variation within ASL for dialect and sociolect above. Register Variation still allows for significant personal differences in ASL production.

3.3 A Revised Model of Language Contact in ASL

Previous models of language contact between ASL and English have attempted to use a single line, or continuum. An inherent flaw with such an approach is that it ignores the reality that the two different languages do not share the same language channel.

As we discussed in Chapter Two, there are three language channels: signed, spoken, and written. To place a signed and a spoken language on the same continuum implies that there is some point between the two which is both signed and spoken. At first glance this may seem to be possible, but in fact the co-occurrence of speech and signs still reflect two different channels rather than some new merger between the two. Just as it is possible to gesture and grunt at the same time, each piece of communication is expressed in a different mode and requires different senses to perceive it. A deaf person will most readily notice the gesture while a blind person will most readily notice the grunt.

An accurate model of the interaction between ASL and English must maintain two distinct continua: one representing the signed channel (expressed through image and perceived through sight) and another representing the spoken channel (expressed through sound and perceived through hearing).

Previous models indicated that each end of the single-line continuum represented grammatical use of each language (ASL at one end and English at the other end). Although each language channel may be influenced by the other language, the variety will ultimately range from grammatical use of each language to ungrammatical use. As a result of these explorations of variety in ASL and influences of English upon some of these varieties, the following graphic representation of language interaction between ASL and English is proposed.

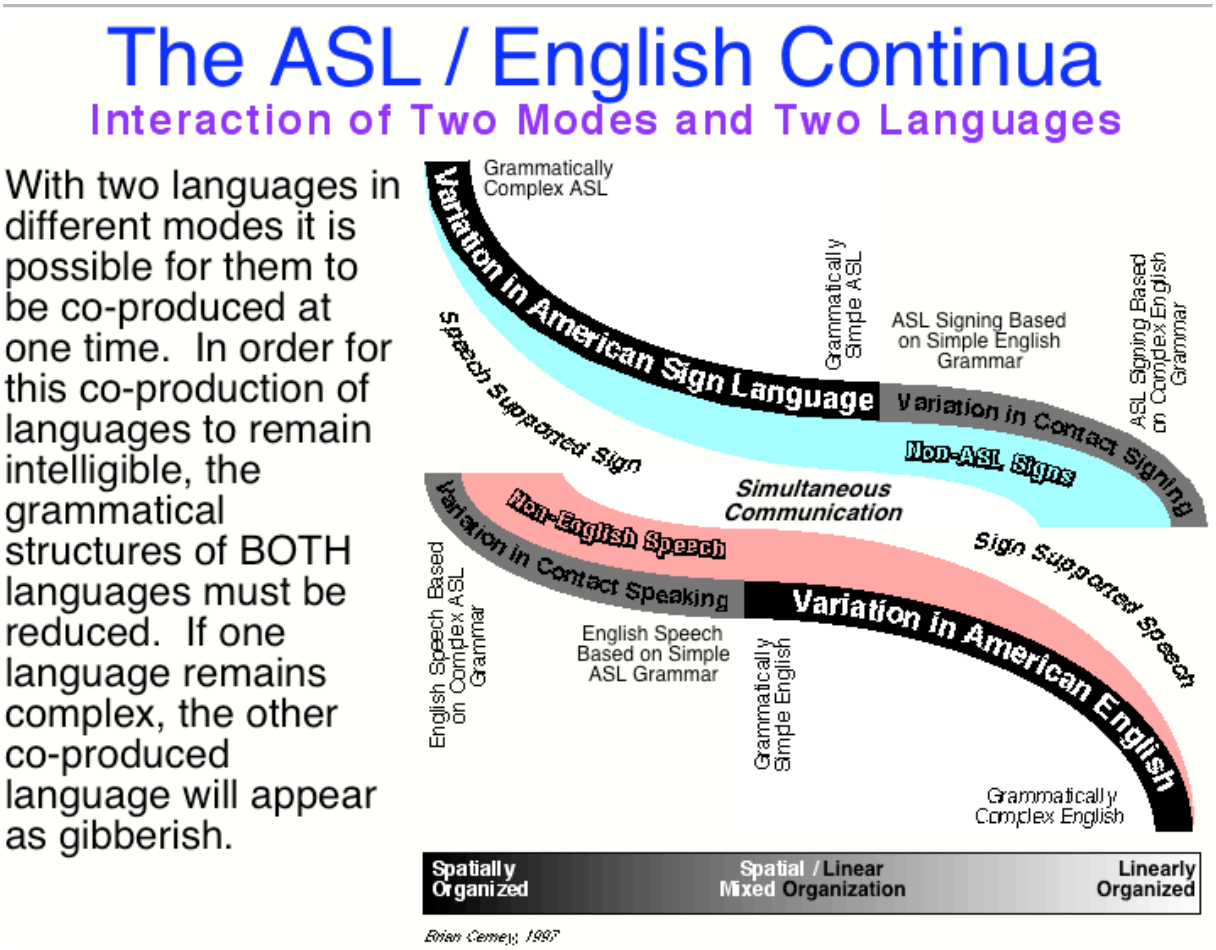

Figure F3.2 - Language Continua: ASL and English

This model recognizes the fact that not only two different languages are in contact but two different channels (a signed language and a spoken language). The main components of the model are two distinct lines: one for spoken information, the other for signed information. ASL occupies slightly more than one half of the signing line while English represents slightly more than one half of the speaking line. The remainder of the signing line is labeled as contact signing while the remainder of the speaking line is labeled as contact speaking. These lines represent more complex grammatical structures at their extreme ends and the most simple or basic grammatical structures toward the middle. Adjacent to each of these two lines are shaded, or gray, areas which account for misarticulations or non-linguistic creations; one for non-ASL signing, the other for non-English speaking. They may include borrowings from other signed or spoken languages, attempts at producing ASL or English words, or inventions.

In the space between these lines is the realm of possibilities for co-occurring signing and speaking, also known as Simultaneous Communication. In the middle portion of each channel continua are the most basic structures of ASL and English, which for both languages are simple Subject-Verb or Subject-Verb-Object sentences (Liddell, 1980). Since both sentence patterns appear in both languages, it is physically possible to utter complete sentences in both languages at the same time. Examples would be “I’m tired / 1PP TIRED” (SV sentence) and “I want my book / 1PP WANT 1PP-POSS BOOK”.

Some people may argue that mouth movement patterns reflecting complete English words are an indication that the rules of ASL are not being followed. It is true that certain aspects of ASL require specific mouth movement patterns which are not related to English speech patterns, however, much of ASL does not require specific mouth

movement patterns. Likewise, during normal productions of spoken English it is possible to keep one's hands immobile or to gesture wildly. Hand movement does not indicate whether English is being used or not, but certainly some hand movements can play a significant role in the clarity of the message (a classic example is the use of hand gestures to clarify the use of phrases such as "that one" or "this item"). Whether the hands produce ASL signs or simple gestures does not determine that an accompanying spoken message is not English. Likewise the movement of the lips alone cannot determine that an accompanying signed message is (or is not) ASL.

Although it is physically possible to simultaneously produce a signed message which follows the rules of ASL while also producing a spoken message which follows the rules of English (as in the two examples above), there is no expectation that this happens very often. It is only possible to follow the rules of both languages simultaneously when the most basic structures in each language are used – most likely resulting in two-word or three-word sentences. It is also entirely possible to simultaneously utter nonsense in both languages at the same time, regardless of sentence length. The production of true Simultaneous Communication is very limited and also is likely to shift into sentence structures of basic contact signing or contact speaking (or simply to exit legitimate language structures altogether and become either signed nonsense or spoken nonsense). If any word orders other than SV or SVO are attempted, true simultaneous language production is nearly impossible.

Moving along the more complex end of the Contact Signing line means that ASL signs are being used in sentence patterns which are unique to English and therefore require a shared knowledge of ASL and English by both the presenter and the receiver in order to be effective for communication. If speech occurs simultaneously, then this is considered Sign-Supported Speech (Johnson, Liddell & Erting, 1989) because the mode which contains the more linguistically complete message is the spoken modality and the signs merely support the spoken message. An example of Sign-Supported Speech would be as follows: "The ball was hit by the boy / BALL HIT B-Y BOY". In this example, the English sentence is a standard passive construction and is perfectly grammatical. The ASL sentence is not grammatical but can be understood correctly if the person receiving the message knows about the structure for English passive constructions. So the signed channel presents ASL Contact signing while the spoken channel presents standard English.

In contrast to Sign-Supported Speech is Speech-Supported Sign which may appear when a complete ASL message co-occurs with elements of spoken English. Spoken English ordered along the lines of ASL grammar has yet to be intensively studied but its existence has been noted as "CODA speak" (Jacobs, 1992; S. Neumann-Solow, personal communication; B. Schick, personal communication) in which hearing children of deaf adults (CODAs) use their knowledge of two languages to produce spoken utterances of English words, often with non-standard pronunciations which represent the manners in which their deaf parents may have pronounced the English words. An example of Speech Supported Sign would be as follows: "My teacher mad, now have cha homework / 1PP-POSS TEACHER ANGRY, NOW HAVE LARGE HOMEWORK". In this example the ASL sentence applies a standard Pronoun Drop in the second clause. Fluent users of ASL would understand that the student has the homework and not the teacher. The English version is ungrammatical and will depend entirely on context to reach the same meaning. It also requires the person receiving it to know enough about ASL to understand the lexical substitution of "cha" for "a lot of" or "gobs of", etc. "Cha" is not a word in ASL, but it is a likely vocal expression for the mouth movement which can accompany some ASL signs describing dimensions.

3.4 Register Variation in ASL

While Contact Signing appears to be a common phenomenon within the American Deaf community (and likely within any Deaf community with regular interaction with hearing, non-native signers) it does not explain all variation within ASL. Flanagan et. al. (1995) reviewed the data tapes from Lucas and Valli's study of Contact Signing. They investigated two of the participants who had not incorporated features of contact signing. It was found that these two participants had modified their ASL production. The researchers identified this modification as Foreigner Talk. Foreigner Talk was identified by Charles Ferguson (1977) and includes simplifications such as a slower pace, larger volume, basic forms without contractions or complex morphology, and repetitions.

These simplification may also be a part of Contact Signing and so Flanagan et. al. had to determine that these elements were occurring while the four elements of Contact Signing were not occurring. By making this distinction they demonstrated that Foreigner Talk is distinct from contact signing in that Foreigner Talk is a simplified register of a language while contact signing includes elements outside of the language. They also determined that the use of Foreigner Talk was determined not by hearing status, but rather by fluency in ASL. Other research of register variation in ASL has included the influence of topic and setting rather than only the participants. Zimmer (1989b) investigated the variation of a native signer in three distinct topic/settings: an informal discussion of being a house husband, a television interview, and a formal presentation. Her research indicated differences within the lower portion of the linguistic pyramid: phonology, and morphology/vocabulary.

Metzger (1993) also investigated the influence of participant status upon register. Within identical settings and topics of discussion, two discussions were videotaped: the first between the deaf subject and his deaf friend, the second between the same subject and a prominent member of the Deaf community. The focus of this research was on the production of pronouns which have informal, standard, and formal variations. Metzger's research indicated more use of informal variants with the friend and more use of standard pronouns with the prominent Deaf community member. Metzger also discovered that the use of constructed dialogue (also known as role shifting) was repeatedly evident within the informal conversation and completely absent in the more formal conversation.

3.5 Summary

This chapter has explored variation due to dialect, sociolect, register variation, and language contact. The research on variation in American Sign Language indicates that while there may be some relationship between English syntax upon the grammatical structures of ASL production among bilinguals, the resulting language production is correctly identified as Contact Signing and not as a dialect or language separate from ASL. ASL can exhibit lexical differences based on dialect, sociolect, or register variation.

3.5.1 Review Questions

1. What four variables influence the development of sociolects?
2. What is the difference between sociolects and dialects?
3. What year did William Stokoe first identify variation in ASL?
4. Which level of the linguistic pyramid was the focus of the first study of American Sign Language?
5. Identify the three phrases other than "Contact Signing" which have been used to describe language contact between ASL and English.
6. What was the primary flaw with attempting to represent language contact between ASL and English with a single continuum line?
7 Where are complex grammatical structures of ASL and English located on the revised ASL/English continua?
8. What are the three descriptors used to define the space between ASL and English within the revised ASL/English continua?
9. Flanagan et. al. (1995) identified the occurrence of true Foreigner Talk within ASL. How is Foreigner Talk different than Contact Signing?

3.5.2 Suggested Activities

1. Think of a common children's story, such as "Goldilocks and the Three Bears," and tell it (in either a signed or spoken language) as though you were from another part of the country using a different dialect of the same language. Try telling the story again using different sociolects of the same language (class, gender, ethnicity, generation). Tell the story in different registers, as though it were a news report, a play-by-play sports broadcast, a suspense-filled mystery, or an academic lecture.
2. Observe three different examples of communication in very different settings (such as a church, a grocery store, and a classroom). Identify at least ten ways that each kind of communication is different from the other kinds (including pronunciation differences, vocabulary choices, and complexity of grammar).

APPENDIX F4 – TRANSCOMMUNICATION

Transcommunication

Rasmus watched as Timoth gazed past him. Timoth nodded and then tapped the shoulder of the person next to him. Timoth pointed across the room and a conversation began.

"Well, you have become quite a transcommunicator, Timoth" Rasmus said.

Timoth stared across the table "What makes you say that? What's a 'transcommunicator'?"

"A transcommunicator is one who mediates the exchange of information between two other parties."

"Um... Isn't that the same as an interpreter?"

"Interpreters are transcommunicators, yes, that is true. But you just successfully transcommunicated a message and no interpreting took place!"

"And just where and how did I accomplish this amazing 'transcommunication' thing?"

"Just now, when that fellow behind me waved at you and you tapped the shoulder of that woman next to you. All he did was raise his eyebrows, look at you, and point at her."

"Hmm... that's right... no signs, no words"

"But significant communication none the less! You understood his message to mean he wanted her attention."

"So I turned, tapped her shoulder, looked at her and pointed to him."

"Transcommunication!"

"But how does interpreting fit into that?"

"The difference, Timoth, is that interpreting adds language to the communication."

"Adds language? You mean replaces communication with language."

"Oh no, I mean adds." Rasmus pulled out a book and turned a few pages, then gazed at the book and continued "Language is simply a small part of the many ways we communicate."

Timoth looked at the book, pointed to it and said "Is that written in there? What book is that?"

Rasmus gazed again at Timoth "Hmm?... is *what* written *where*?"

Timoth reached across the table and grabbed the book. "This is a *novel*! Why were you looking at it when you said 'Language is simply a small part of the many ways we communicate?'"

Rasmus slowly reached over and took the book back from Timoth. "And why did you think that I was reading aloud to you?"

Timoth smiled "Because you didn't look at me. You shifted your eye gaze toward the book."

Rasmus nodded "And the fact that I was holding a book combined with my shift of eye gaze toward it meant something to you, didn't it?"

"I thought you were quoting some authority on the subject of communication. That way I'd be more likely to accept your argument without any more questions."

"You thought all of that... But I didn't say I was reading aloud to you. You paid attention to much more than merely the words I was using. So do you agree with my statement now?"

Timoth leaned back in thought. "Your eye gaze and posture told me that what you were saying was perhaps very important and that maybe I should remember it." Timoth's gaze returned to Rasmus, "You communicated with much more than just language."

Rasmus smiled and put the book away.

Timoth smiled. "I will remember the lesson."

Chapter 4
Transcommunication

"Language is Science, Language-Use is Art, and Interpreting is Both." - 1999 BC

4.0 Overview

In Chapter 1 we introduced three variables which influence communication: Intention, Immediacy, and Interactivity. In Chapter 2 we gained an understanding of the differences between Communication and Language. We also learned that there are only three Channels for languages: signed, spoken, and written; and that each of these Channels may have a variety of Language Encoding Systems (such as typed symbols, written symbols, signed symbols, spoken symbols, brailled symbols, fingerspelled symbols, morse code symbols, and palm printed symbols). We performed an extensive analysis of the different components of language by means of the Linguistic Pyramid.

Chapter 3 explored language variation in both spoken and signed languages, particularly American Sign Language. Languages can vary in dialect, sociolect, and register. Language use can also vary based on the bilingual skills of the people communicating (Language Contact) and this leads us now to the work of communicating a message between two languages. It also leads to the work of communicating a message within a single language but using different Language Encoding Systems.

This chapter will explore the work of interpreters, translators, and transliterators. We begin by introducing the term "transcommunication" and then review the labels for interlinguistic (between two languages) work. Next we will explore intralinguistic (within one language) work, extralinguistic (outside of language) work, and finally define relay interpreting.

4.1 Transcommunication

Before we can move forward we need to define the word which captures all of the different kinds of work that can be done between any two communication systems (including languages and Language Encoding Systems): Transcommunication. *Transcommunication* is any kind of mediation where one person communicates another person's message to a third person. Transcommunication includes basic communication without using any language (such as waving to get someone's attention on behalf of another person), communication within a single language (such as reading a written message aloud to another person) and communication between two languages (such as translating information from one language to another). We will begin with transcommunication without language, referred to here as *elucidation*.

4.2 Bilingual (Interlinguistic) Transcommunication: Interpreting and Translating

One important thing to understand from the beginning is that there have been heated debates about just what professional interpreters are supposed to do in various situations and even about the basic definition of interpreting. Part of this argument has been the paradigm of "conduit" as a framework for understanding how an interpreter works. In the conduit framework, language is a package which contains ideas. On one end of communication people put their ideas "into" word packages. The words then travel somehow to other people who then "extract" meaning from the word packages and perhaps send a reply.

Within this framework interpreters are considered to be one more handler of the package (the words). The notion is that the interpreter extracts the meaning from the words (the first container), finds equivalent words in the other language (a new container) and then sends the re-packaged message to the intended receiver. If everything goes smoothly, no one needs to know the interpreter was ever involved; but this framework ignores the complexity of communication both through and beyond language. Eye contact, body posture, vocal intonation, and cultural expectations can all influence how we understand a message. Interpreters must include this kind of information in their interpretations. In other words, the interpreter not only replaces the container for the message (the words), but has to be concerned about how that container is wrapped (formal/informal; vocal inflection/facial expression), who is sending it, who is to receive it, how it is delivered, at what speed, and so forth. In addition to all of these factors, the very notion that a message can be "contained" or "packaged" into

words is inaccurate since we know that communication requires background knowledge and a physical context. Every message is different and even multiple interpretations of the same message are possible, even necessary. Interpreting is a very interactive process which requires the interpreter to constantly make decisions.

Interpreters must understand information and do something with it. We will use the word "text" to refer to the information that a person produces. This includes the basic pieces of meaning as well as the cultural expectations surrounding the message and the manner in which it is delivered. Interpreters are working between two languages and cultures; therefore they work between two basic kinds of texts. Source Texts are those which are created by people other than the interpreter. Target Texts are created by the interpreter. Figure F4.1 represents the sequence of a Source Text followed by a Target Text.

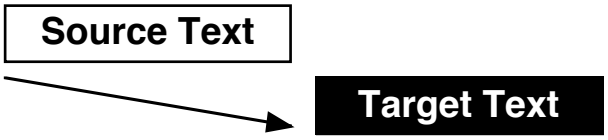

Figure F4.1 - Source and Target Texts

Another variable in describing texts is whether the texts are variable or fixed. Variable texts are those which are spontaneously created and produced. Fixed texts are those which are either prepared or recorded (by writing, audio recording, video recording or any other means of documentation).

It is possible to record a spontaneous, variable text; but the recording itself becomes a fixed text because it will be the same every time it is reviewed. One of the key factors to consider when determining whether a text is fixed or variable is the notion of being able to interrupt and redirect the message. It is not usually possible to interrupt a text written in a book or performed on videotape (other than to stop reading or to turn the VCR off). Modern innovations in interactive media, such as CD-ROMs and DVDs allow the viewer to interrupt and redirect the message so we need to introduce the other key factor: is the text the same each time it is presented? Each time a section of a CD-ROM or DVD is played it is the same as before (or one of a very few variations which will eventually repeat after several viewings). In other words, a person could memorize the patterns because they don't change. Books, CDs, DVDs, videotape, and any form of a recording are all examples of the ways that messages are fixed (made permanent).

Most of the time we would consider a live presentation to be spontaneous. Even if the person is performing in a play their performance is a spontaneous version of a fixed text because you could interrupt and ask a question. The performer may choose to ignore your interruption, but you might also get an answer (or a warning not to interrupt!) Live presentations are considered to be spontaneous texts.

With this understanding of what interpreters work with, we can now define the process of interpreting. Interpreting is an interactive exchange of information between two languages in which the interpreter actively creates spontaneous target texts that maintain the information and intent of their respective variable source texts. So if you thought interpreting was simple, now you know that it has a very complex definition. Let's examine the pieces one at a time.

1) Interpreting is an interactive exchange of information. This means that the interpreter is just as much involved in the exchange of information as every other person who is participating. In fact the interpreter usually participates at least as much as every other person combined. Every message each person sends must be understood, analyzed, and regenerated by the interpreter.

2) Interpreting exchanges information between two languages. This may seem obvious now, but it is an essential part of the definition. Different labels apply to other kinds of work which exchange information within the same language.

3) Interpreters actively create spontaneous target texts. Our previous definitions indicated that interpreters are the people who create target texts but a key word related to interpreting is that the target text is spontaneously produced. If the target text is prepared or rehearsed and then recorded (written, typed, videotaped, etc), then we would probably call it a translation. In addition, the words "actively create" reveal that interpreters do not merely convey another person's thoughts. Interpreters must first bring their own knowledge and source language abilities to the understanding of the source texts. They then create their target texts based on that knowledge and their target language abilities.

4) Interpreters maintain the information and intent of the source texts. This means that the audience reaction to the interpretation should be the same as the reaction would be to the original message. This is tricky work because it requires the interpreter to make judgments about the meaning of the information and the speaker's intentions – often without being able to ask the speaker directly about what they thought the message meant and how they intended it.

Interpreting requires that two languages are involved. One language is related to the source text; the other language is related to the target text. The source text is variable and so is the target text. The process includes more than just repackaging words; it requires the interpreter to actively participate in the communication process. Because each interpreter has different experiences and skills, this means that no two interpreters can ever create identical target texts from the same source text. Even if two interpreters managed to use identical words, their inflection, volume, timing, and other stylistic features would still be different.

Now that we know what interpreting is, and what it isn't, we can expand the definition even more. Within the realm of interpreting are two distinct forms. Simultaneous Interpreting occurs when the target text is created while the source text continues to be expressed. Simultaneous interpreting is common for monologic discourse, where one person will present a single source text (such as a lecture). Figure F4.2 indicates that the source text in one language begins before the target text in another language, which will be concluded just after the source text is complete.

Figure F4.2 - Simultaneous Interpretation of Monologic Discourse

Simultaneous Interpreting can also occur when two (or more) people interact with each other. Each target text is created while the source text continues to be expressed. Figure F4.3 indicates that the source text in one language begins before the target text in another language, which is then used to create another source text which is interpreted into the first language, and so on. Notice that there are time delays between the production of the source text and the production of the target text in both languages.

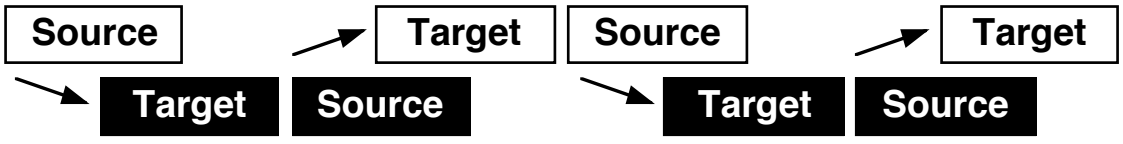

Figure F4.3 - Simultaneous Interpretation of Dialogic Discourse

The time delay between the source and target texts in each language can be problematic because the speaker who has just completed a source text may misunderstand the silence as an opportunity to take another turn. This means that the interpreter has to work to preserve the ability for the second language user to take a turn. This

may mean that the interpreter explains the problem to the communicating parties. Other strategies exist for preserving the turn exchange, too. The main point here is that the interpreter must do more than merely "repackage" the message.

Consecutive Interpreting requires the production of the source text to be suspended while the target text is produced. Upon completion of the target text the next portion of the source text may be produced. Consecutive Interpreting is fairly common in settings where two or more people alternate in their creation of multiple source texts (such as a job interview). Figure F4.4 shows this typical patterns for consecutive interpreting of dialogic discourse.

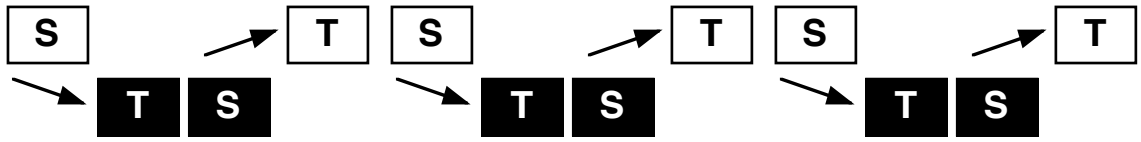

Figure F4.4 - Consecutive Interpretation of Dialogic Discourse

Historically consecutive interpreting has also been done for monologic discourse but usually when the guest speaker (or business executive) uses one language to address a large audience who all share a language different from the speaker. This approach is only effective if the source text speakers agree to break-up their presentation into segments. Figure F4.5 shows this one-way use of consecutive interpreting for monologic discourse.

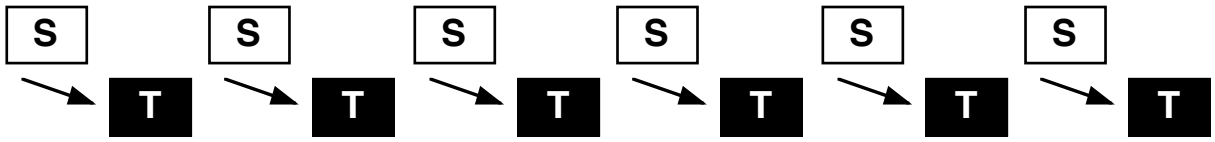

Figure F4.5 - Consecutive Interpretation of Monologic Discourse

Another word which has commonly been exchanged for "interpreting" is the word "translating"; but interpreting is not the same as translating. Interpreting depends on variable (non-fixed) source texts and the immediate creation of variable target texts. Translation is a slower process which changes a fixed source text in one language into a fixed target text in another language. Translation is the extensive review and evaluation of a fixed source text in one language and the creation of a fixed target text, in a different language, which maintains both the information and intent of the source text. For example, a written English document may be reviewed and evaluated over the course of several days and an ASL version of the same information can be prepared and even recorded on video tape. It is possible to produce several drafts of the ASL version and choose one as the final translation of the original English text. The process may be similar or even identical to interpreting, but the key differences are 1) the source text is fixed, 2) the target text is fixed, and 3) there is sufficient time to review the source text and revise the target text.

Two combinations of interpreting and translation also exist. *Site Translation* is the spontaneous creation of a target text based on the information in a fixed source text while maintaining both the information and intent of the source text[49]. For example, a medical intake questionnaire, printed in English, would be read by an interpreter who, piece by piece, expresses the information in Mandarin Chinese. In this instance, the interpreter is usually able to take as much time as is required to review and understand the source text before producing the target text; but the target text is not extensively revised or documented ("fixed") in any way. The result is actually a spontaneous and variable text.

[49] Traditionally this has been called "sight" translation, but is being replaced here with the more accurate word, "site", because the process need not depend on vision and is more related to the performing of the task "on location" or live, rather than depending upon using one's eyes.

Another combination of interpreting and translating is called *Recorded Interpretation* and it begins with variable source texts (without extensive review and evaluation) and results in fixed target texts which have not had the benefit of revision or preparation. Recorded Interpretation is the documentation of an otherwise spontaneous interpretation of a spontaneous source text. For example, an interpreter's performance is recorded during a training session so that future deaf employees can have access to the training tape. An alternative form of Recorded Interpretation is if the interpreter is creating a written document as the direct result of the interpreting process. This may take place in business settings where the business is being conducted in one language, but someone needs to have documentation of the activity in a language other than the one used to conduct business. The minutes of meetings conducted in ASL are generally written in English and the recording secretaries are actually performing Recorded Interpretation, although their finished product is likely only to be a summary of the source texts. Because the recording of the interpreter's work can be used later as a document of the participants' communication, Recorded Interpretation should only be done by agreement of all participants: especially, but not limited to, the interpreter.

A third variation is the simultaneous delivery of a *Performed Translation* at the same time that the source text is presented. This happens often with performances of plays which are interpreted for the benefit of deaf audiences. In most professional settings, the plays are actually translated prior to the performance and the interpreter is actually delivering a performed translation at the same time that the actors on stage deliver their rehearsed lines. If the actors drop lines or ad lib new ones, the interpreter will need to deviate from the performed translation in order to keep the access equivalent. The whole process looks like the spontaneous interpretation of a spontaneous, variable source text; but in reality it is the delivery of a performed translation which occurs at the same time as a prepared source text. The target text is considered "fixed" because it is rehearsed and relatively non-variable.

So far we have explored the difference between source texts and target texts and the significance of whether those texts are fixed or variable. The resulting interaction of these possibilities have given us the following terms: Interpreting, Consecutive Interpreting, Simultaneous Interpreting, Recorded Interpretation, Translation, Site Translation, and Performed Translation. It is important to remember that these labels are only related to interlinguistic activity, meaning that at least two different languages are involved. The following grid organizes the interlinguistic activity that has been described:

Labels for Interlinguistic Transcommunication Activity

	Target Text Variable	**Target Text Fixed**
Source Text Variable	**Interpretation**	**Recorded Interpretation**
Source/Target Overlap	Simultaneous Interpreting	Recorded Simultaneous Interpreting
Source/Target Alternate	Consecutive Interpreting	Recorded Consecutive Interpreting
Source Text Fixed	Site Translation	**Translation**
Source Performed "Live"	Interpretation (if interpreter has no previous access to source)	Performed Translation

Figure F4.6 – Interlinguistic Transcommunication Labels

4.3 Monolingual (Intralinguistic) Transcommunication: Transliterating

There are many possible reasons that a professional language specialist would be hired to work within one language. Some of these are related to the need to create reliable documentation of human interaction. Others are related to the need to provide access to an activity as it takes place. Four labels apply to intralanguage activity. 1) *Recited Reading* is the process of creating, within the same language, a spoken or signed target text from a written source text. 2) *Transcription* is the process of creating, within the same language, a written target text from a spoken or signed source text. 3) *Transliteration* is the process of creating a target text in a different

language encoding system but within the same language and channel (written, signed, or spoken), as the source text. An example of transliteration would be the changing of a message from the language encoding system of Typed English (image) to Brailled English (texture). 4) *Shadowing* is the process of creating a target text in the same language encoding system and within the same language and channel (written, signed, or spoken), as the source text. Shadowing may be verbatim repetition or paraphrase. One practical application of shadowing, also known as *mirroring,* would be watching a source text produced in signed ASL by an audience member (that the general audience cannot easily see) and then repeating the same message in signed ASL from the stage (so that all the audience members can see the same message). It is important to remember that all four of these labels are related to intralinguistic activity, meaning that only one language is involved.

Transliteration has traditionally meant the changing of letters in a word from one alphabet system to another. The point of transliteration is access: to allow a person who can read one alphabet to access a language which uses a different alphabet. Here is an example: If you went to Russia and encountered the words "POCTOb HA ΔONU" you would need to know the Cyrillic alphabet in order to pronounce the words correctly. If I transliterate those words to "Rostov Na Donu" it still doesn't tell you what the words mean, but you now have access to the words through a writing system you know. Only when I tell you that this is the name of a town in South Western Russia and that it is generally written in English as "Rostov on Don" because it is on the Don River, do you understand its meaning because I have translated it into a language you know.

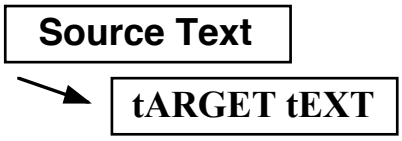

Figure F4.7 - Transliteration (simultaneous) of Monologic Discourse

Transliteration can occur in either monologic or dialogic forms. Figure F4.7 shows the simultaneous processing (but slightly delayed presentation) of simultaneous transliteration for monologic discourse. Figure F4.8 represents simultaneous dialogic transliteration. Consecutive processing is also possible, but usually is reserved for processing written transliterations where an entire text is completed before the transliteration process begins. Figures E.18 and E.19 represent transliterations which are generated spontaneously with consumers of each language modality physically present.

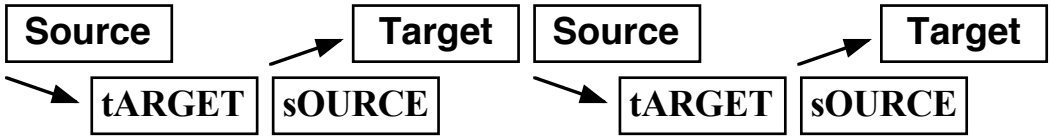

Figure F4.8 - Transliteration (simultaneous) of Dialogic Discourse

The point to remember is that transliteration provides access, but does not cross the "language barrier." That is, even though the form of the word or words have changed, the language remains the same. You must know something about that language to understand a text that has been transliterated from a form that you do not have access to (such as Cyrillic) to a form that you do have access to.

The concept of transliteration has been expanded from its origins related to written languages to the presentation of spoken language in accessible forms for deaf people. Oral Transliteration is the presentation of spoken English into what has been called "Visible English" which is simply a controlled and clear presentation of lip movements, facial expression, and natural gesture which allows a deaf person with lip-reading skill to have access to the spoken language version. In this example, both the source text and the target text share the same language – English – but make use of different encoding modalities.

Another version of transliteration is Cued Language Transliteration (generally known as Cued Speech). Cueing presents spoken language phonology through combinations of lip movement, eight handshapes, four locations, and three movement patterns, plus epenthetic movement. Cued Language Transliteration makes use of the cueing system to present the phonology (speech sounds) of spoken languages to a consumer who also knows (or is learning) the cueing system. Once again, there is no change in language: both the source and target texts use the same language.

Transliteration also occurs with ASL. DeafBlind people who attend conferences often receive either tactile transliteration or reduced-space shadowing when a source text is presented in ASL. Tactile transliteration / interpretation is used by deaf people who do not have usable vision and requires physical / tactile contact between the DeafBlind consumer and the transcommunicator. Reduced-space shadowing/interpretation is used by deaf people with limited usable vision such as tunnel vision. The interpreting versions of these will be presented when the source text is English. If the source text is ASL, then the task is either tactile transliteration or reduced-space shadowing, even though the end result looks the same as the interpreting versions. The key difference is whether the source and target languages are the same or different. Many people who provide tactile transliteration or reduced-space shadowing for DeafBlind people are deaf themselves. They may use the services of an interpreter to take a spoken English text into ASL. This ASL text now becomes the source text for a tactile transliteration or reduced-space shadowing for DeafBlind consumers. This form of relayed interpreting will be further defined later in this section.

Notetaking is also a form of transliteration if it takes a spoken form of language and represents it in writing. Notes might be in short-hand, which is a phonetic representation of the source text, or in long-hand (standard written English, for example). Notes could be typed or word-processed. The most technical of all transliterations is Computer Assisted Real-Time Transcription (CART) which starts with a phonetic encoding of a spoken language (much like the use of cues or shorthand) and then generates written English words and punctuation through computer software.

It is entirely possible for each of these forms of transliteration to be used as a part of interpreting. The determining factor is whether the language barrier is crossed; if so, then the act is one of interpreting. A German source text presented in lip-readable French would be an Oral Interpretation. A British Sign Language source text presented in cued English would be a Cued Language Interpretation. A Spanish source text presented in tactile ASL would be a Tactile Interpretation. An English source text presented in reduced-space ASL would be a Reduced-Space Interpretation. A Russian source text entered into a computer as encoding for spoken English and then processed by computer into written English would be a Computer Assisted Real-Time Transcription Interpretation. While all of these variations are possible, most of them do not occur very often. Tactile and Reduced-Space forms will be transliterations when the source and target languages are the same; they will be interpretations when the source and target
languages are different.

4.4 Extralinguistic Transcommunication: Elucidation

Extralinguistic Transcommunication means that one side of the communication event did not use a language. Earlier in this section we introduced the concepts of communication and semiotics. Through semiotics it is possible to understand how we can communicate without language. This communication may be accomplished through vocalizations, gestures, body postures and facial expression as well as graphic symbols. If the communication system is shared by members of a community in which the system is rule-governed, has infinite production possibilities, is intergenerational, and changes over time then we can consider the communication system to be *linguistic*. If both sides of the communication event meet the definition of language then the transcommunication between the two is bilingual. We will explore bilingual transcommunication later in this section. If just one side of the communication event does not meet these requirements (such as the use of basic gestures, natural pidgins, or artificial pidgins) then any transcommunication between the two will be called *Elucidation*..

There are many people who are faced with the need to communicate without sharing any common language between themselves and the people around them. This can even be the case for locally available professional interpreters when a person's native language is not known to anyone locally or, in some cases, when a person is

not fluent in any language at all. In order to serve these people it is common practice to employ gestures and more dramatic enactment of the ideas which need to be conveyed. Because this gesturing does not constitute an actual language, none of the terms we will learn later in this section can be applied to this process of elucidation. *Elucidation* is the transcommunication of a message between a language and something other than language.

Elucidation does not include communication between two people who use gestures to directly communicate with each other. Such forms of communication may commonly take place in business exchanges where pointing gestures, written or signed numbers, and the exchange of money ensures sufficient communication to transact a sale between people who do not share any language. Such direct exchanges of communication are not likely to be enhanced by a third person who also shares no language with either of the other two people. Therefore we shall not further explore transcommunication which makes use of no languages whatsoever.

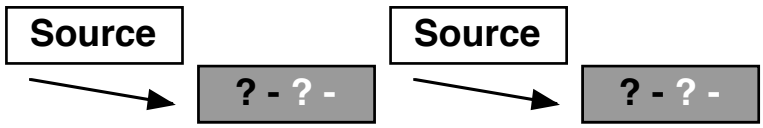

Figure F4.9 - Elucidation (consecutive) of Monologic Discourse

Elucidation can occur with monologic or dialogic texts and can be simultaneous or consecutive. Figure F4.9 shows consecutive monologic elucidation, figure F4.10 shows consecutive dialogic elucidation. By definition, a language has a community who share the language. Most consumers of elucidation services will therefore require a stylistic adjustment for their individual idiosyncrasies and preferences. These stylistic adjustments will be best accommodated by a consecutive approach to the work. The next portion of this section will further explain processing levels and how they affect accuracy in transcommunication.

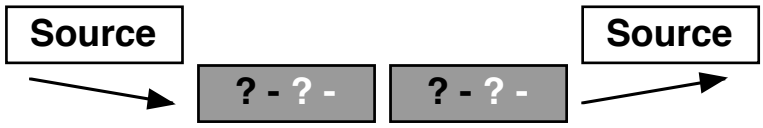

Figure F4.10 - Elucidation (consecutive) of Dialogic Discourse

Elucidation as a process requires 1) a language user (or a linguistic text, such as a magazine article, an audio book, or a videotape), 2) a transcommunicator who knows the same language as the language user (or linguistic text), and 3) a non-language user, who must communicate without using a language. A "linguistic text" is simply a document which might be in a written language (such as a medical history form) or a signed language (such as a videotape). An elucidator may read the medical history form, attempt to convey the items on the form gesturally (but not truly linguistically) to the non-language user. Responses from the non-language user would then be written down by the elucidator. This process is possible because communication does not require language; but the danger is that without language it is very difficult to be certain that the questions and answers are accurately understood. Because languages are very refined forms of communication, transcommunication will always be more accurate when it makes use of language at both ends.

4.4.1 Transcoding Natural and Artificial Pidgins

A Pidgin is a stabilized conglomerate of three or more languages which is used for interaction among people who do not share a common language. Natural pidgins have typically sprung up initially as spontaneous trade jargons for economic reasons where several different cultures are found among people brought together such as at gold mines, diamond mines, and in the slave trade of the European powers and their colonies. Pidgins are regularized “business” communication which merge the vocabulary of the dominant culture’s language[50]

[50] The dominant language in a pidgin is known as the “superstrate” language.

(Portuguese, for example[51]) and the pronunciations and grammars of the various non-dominant cultures' languages.[52] Pidgins do not meet the definition of language established at the beginning of this section because they have yet to show historical change and be passed from one generation to another. If the economic and social circumstances are maintained for several years then a second generation will be born into this community. This generation will "fix" the pidgin by wrapping their human brains around the pidgin. This process is called *creolization*. Once the second generation has creolized a pidgin, the resulting creole does indeed satisfy the definition of language. Therefore the following terminology correctly applies: Transcommunication between a language and a Creole is *Interpreting*. Transcommunication between a language and a Pidgin is not interpreting, but rather adopts the previously mentioned label of *Elucidation*.

Artificial Pidgins are created by intentionally merging the vocabulary of one language with the grammar of another along with at least one other modification. Most artificial pidgins have been created for the purposes of educating deaf children. Typically the vocabulary of the signed language is modified and then molded onto the grammar of a spoken language. The educators adopting the use of these artificial pidgins typically believe these mergings somehow represent the fullness of the language supplying the grammar (the substrate language). The reality is that children who are exposed to these artificial pidgins will attempt to creolize them toward the language supplying the vocabulary (the superstrate language) (Supalla, 1991). Figure F4.11 identifies ASL as the basis of manual English codes.

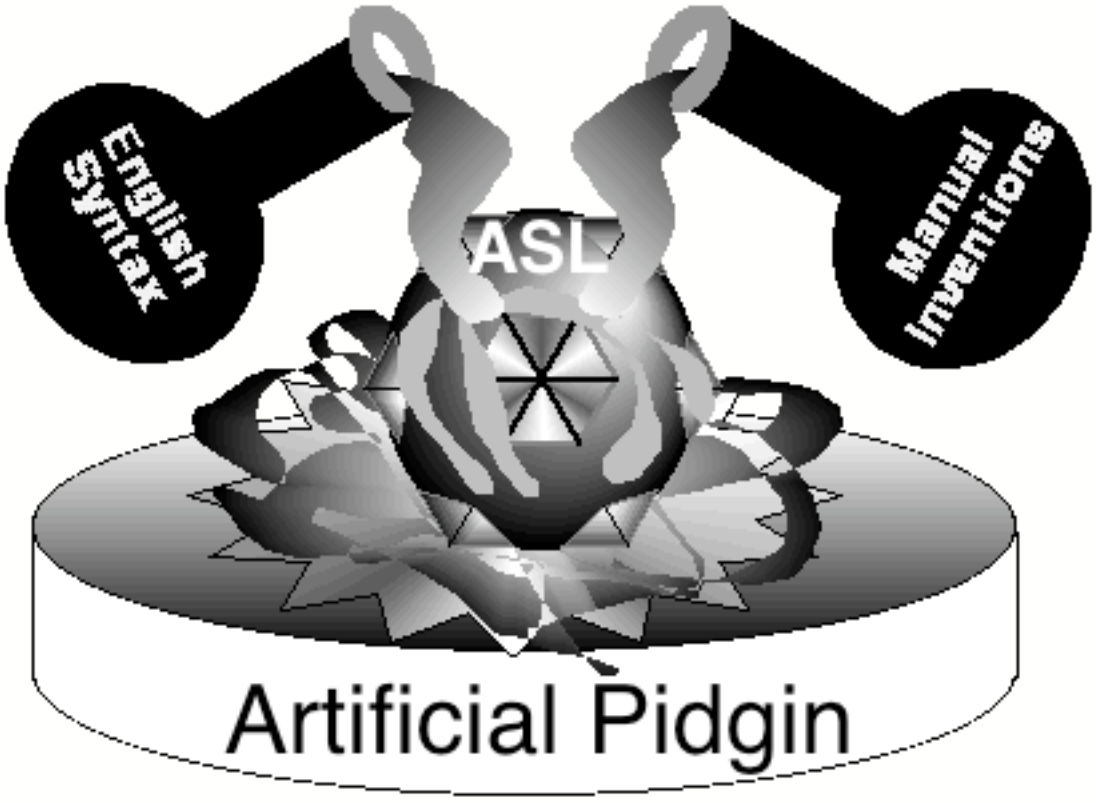

Figure F4.11 – Modifications of ASL to create Manual English Codes

[51] Personal information from Jerry Cline-Bailey of Sierra Leone indicated that the Georgia Sea Island language of Gullah originated as a pidgin based on Portuguese as the superstrate language.
[52] The non-dominant languages in a pidgin are known as the "substrate" languages.

Artificial Pidgins (ie. manual English codes) are not languages; therefore neither the label *Interpreting* nor *Transliterating* can be correctly applied to any work which involves a manual English code. The label of Elucidation is all that can be correctly applied to any work involving a manual English code[53] (such as SEE 2).

4.5 Literal Processing, Idiomatic Processing and Cultural Adjustment

While it might seem perfectly confusing to have as many labels as we already do so far, there are still several very important variables left unmentioned. The Transcommunication processes of interpreting, translating, transliterating, transcribing, and recited reading may all be either literal or idiomatic. In fact these two labels belong on a continuum because there are different degrees to which a target text may be literal or idiomatic, even within a single sentence. A *Literal* process is one in which the original word order (syntax) is maintained in the target text. An *Idiomatic* process is one in which more natural word orders are substituted within the target text, and perhaps the entire text is restructured as well. The Literal end is easier to predict because the word order to be used is already presented in the source text. The Idiomatic end has much more variation because what is more natural or appropriate will be different based on who is providing the service and who the consumers of the service are. This gives rise to the concept of *unduly free* processing where the target message may be very idiomatic, but is no longer an accurate representation of the concepts presented in the source message.

If a variety of consumers are being served then a mixture of literal and idiomatic processing may appear in the target text. It is even possible that some parts of the message will be presented twice so that consumers receive both literal and idiomatic versions in the same target text. Many bilingual deaf adults may express a preference for a "Middle of the Road" (MOR) interpretation, especially for work or school settings so that they can still link the concepts presented in the interpretation can be more readily matched to the written and spoken language of the setting.

Figure F4.12 – Literal and Idiomatic Processing Continuum

Another way to think of these two extremes is called *Cultural Adjustment*. A Literal processing provides access to the culture of the source text while making little effort to make it accessible to members of the target culture. An Idiomatic processing would reduce the access of the source culture while making the target text more accessible to members of the target culture.

There are six levels of information processing tied to these concepts: Sublexical, Lexical, Syntactic, Semantic, Pragmatic, and Stylistic. A representation of these variables and their relationship to the concepts of literal versus idiomatic processing is presented below.

[53] Various manual English codes have been created. *Signing Essential English* (Anthony) even underwent a name change to *Seeing Essential English* (SEE 1) to obfuscate the fact that it was composed of modified ASL signs. Another system, entitled Signing Exact English (SEE 2) held closer to ASL semantics and thus drew greater acceptance, even though it actually had less similarity to English than SEE 1.

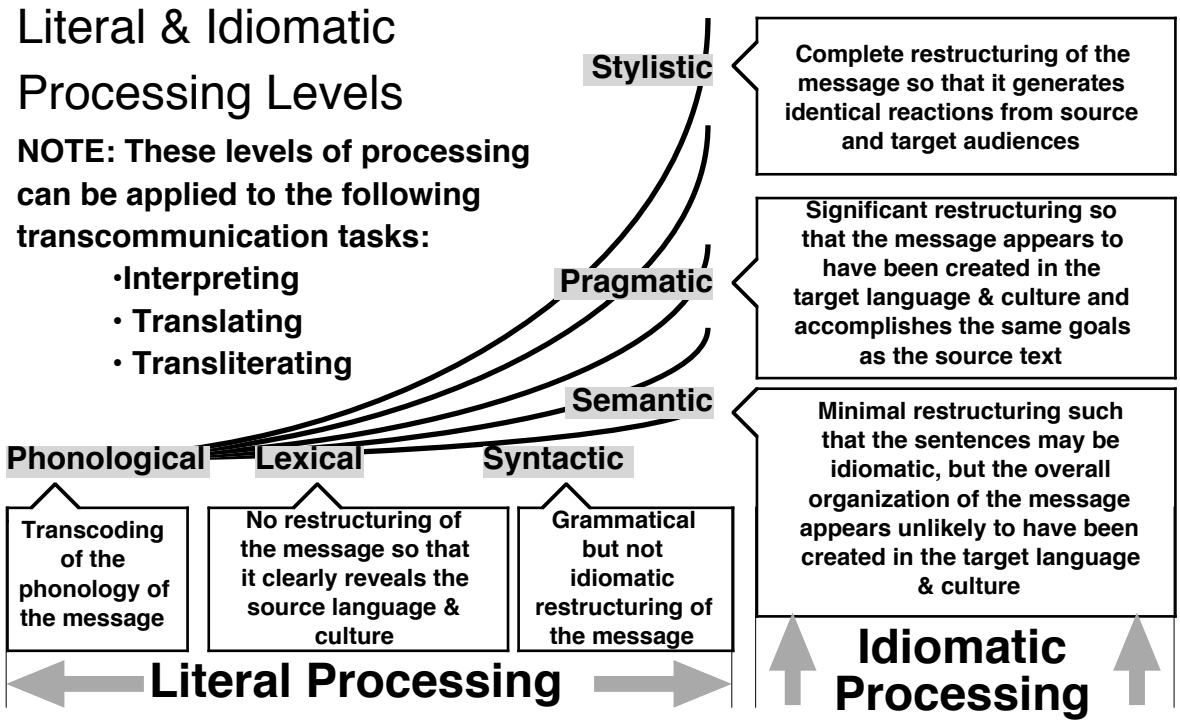

Figure F4.13 - Processing Levels Between Source and Target Texts

4.5.1 Phonological (Sublexical) Processing
Phonological processing can occur when an unfamiliar term is presented in a source text or when the interpreter is simply inexperienced in the target language and does not yet know the conceptually accurate vocabulary. The interpreter may focus on how the words are produced, rather than what they mean. Phonological processing is most likely done by novice/untrained people who do not fluent in both the source and target languages. Phonological processing may occasionally be of value for experienced interpreters when faced with examples from a third, unknown language:

Hypothetical Source: "and then he said C'est la guerre, but I don't speak Chinese!"

Hypothetical Target: "MAN SAY SOUND SIMILAR QUOTE SAY L-A G-A-R-E QUOTE DIFFERENT 1PP NOT TALK CHINA"

It is possible that the consumer of such an interpretation may know both English and French and recover the intended joke[54] of the source text. Phonological processing allows for an interpreter to convey information, including jokes, even if the interpreter is unaware of the meaning of the message. But the success of phonological processing depends on the target consumer being able to reconstruct the intended message. In essence, it requires the consumer to be the actual interpreter and therefore phonological processing is not generally seen as a targeted level for information processing.

4.5.2 Lexical Processing
The Lexical level focuses on words so that conceptual accuracy is maintained between the source and target texts, but not much more adjustment is made.

[54] "C'est la guerre" is a French phrase, not Chinese.

Hypothetical Source: “and then he said C’est la guerre, but I don’t speak Chinese!”

Hypothetical Target: “MAN SAY QUOTE #CEST #LA #GUERRE QUOTE DIFFERENT 1PP NOT UNDERSTAND CHINA LANGUAGE”.

The processing in this example would require the interpreter to know enough French to be able to spell the French phrase correctly. The result would not be sound-based but would still require the consumer to understand written French in order to recover the joke.

4.5.3 Syntactic Processing
The Syntactic level includes the juxtaposition of words within grammatical relationships so that conceptually accurate words are also used in their correct grammatical category.

Hypothetical Source: “the test was proctored by the librarian.”

Hypothetical Target: “LIBRARY AGENT SUPERVISE TEST”.

The processing in this example restructures the source text to eliminate the use of passive voice. Syntactic processing can also include the insertion of a “dummy” subject when the source text is not specific as in the following example: “Mistakes were made.” An English restructuring of this sentence might be “(Someone) made mistakes”. One hypothetical target text of this sentence would be “SOMEONE ERR/WRONG”

4.5.4 Semantic Processing
The Semantic level includes the organization of phrases into complete and coherent sentences and connections between sentences. This results in complete thoughts being organized the way those ideas would be organized within the target language.

Hypothetical Source: “Most people remember where they were and what they were doing when Kennedy was assassinated.”

Hypothetical Target: “LONG-AGO, 1963 SOMEONE KILL PRESIDENT J-F-K. MOST PEOPLE REMEMBER THAT DAY. WORK, PLAY, SCHOOL, NO-MATTER, MOMENT HEAR JFK DIE, DO-DO, REMEMBER THAT”.

The processing in this example restructures the source text to provide the full meanings of “when Kennedy was assassinated” This includes identifying the “dummy” subject of “SOMEONE”, establishing the contextual time of “1963”, and identifying which Kennedy is implied: “JFK”. The concept of “where they were” is presented as a short list of likely examples. The final product is composed of three sentences instead of only one, therefore it moves beyond syntactic processing. Conceptually, however, the source and target texts remain identical.

4.5.5 Pragmatic Processing
The Pragmatic level includes the organization of the entire text so that it would appear that the target text was in fact originally created in the target language and that the source language & culture had not been involved at all.

Hypothetical Source: “the clock is on the wall.”

Hypothetical Target: “WALL, TIME CL-disc, CL-placed-above”.

The processing in this example sets up the signing space so that a surface is identified prior to placing an object on that surface. An alternative – but more syntactic – processing would be to use a rhetorical question: “TIME CL-disc WHERE? WALL THERE”.

4.5.6 Stylistic (Whole-Text) Processing
The Stylistic level includes the processing of the entire text so that it reveals the same elements of the speaker's personality that the source text does. It is not possible to clearly exemplify stylistic differences in text because stylistic differences are individual and performance-based. In other words, two different people reading the same text will generate stylistically different performances. Stylistic processing means that beyond all of the other levels of processing the final product also provides access to some (or many) aspects of the performance style of the source text presenter. The value of this is to allow the audience of both the source text and the target text to reach the same conclusions about the personality of the speaker. In other words, one group might really dislike the speaker while the other thinks the speaker is a really pleasant person. The ability to match the stylistics is very likely to depend on the inherent stylistics of the interpreter generating the target text. This is one reason why people may express a desire to have an interpreter who is the same gender and/or ethnicity as the source text presenter. It also may be an issue for why some deaf students prefer educational interpreters who have similar preferences for clothing, and conversational style as a reflection of themselves to their hearing peers.[55]

Another aspect of stylistic processing is that it considers the entirety of the source text. Stylistic parity (matching the style of the source text) can appear repeatedly throughout a target text; but full stylistic processing can only be achieved as a full-text, consecutive task, such as translation.

The six processing levels of Phonological, Lexical, Syntactic, Semantic, Pragmatic, and Stylistic can also be related to the kind of work being done. Standard Translations may generate a target text at any of the top four levels (syntactic and beyond). The key factor for success in translation is that the entire source text can be analyzed before any part of the target text is created. This allows the freedom to rearrange the entire text and to ensure that it is organized in a way that the target language would organize an original text. Therefore the process of translation (including Performed Translation and Site Translation) allows Pragmatic Processing to take place (and Stylistic Processing to at least be attempted.

It is also possible to accomplish these higher levels of processing with Consecutive Interpreting, but only if the entire source text is completed before the target text is attempted. Since there is less time to make adjustments and no time to consult additional resources, it is more likely that a Consecutive Interpretation will be processed somewhere between the Syntactic and Pragmatic levels. Simultaneous Interpreting reduces further the amount of time for analysis and readjustment of the target text and therefore is likely to result in processing somewhere between the Lexical and Semantic levels. If the interpreter can make significant predictions about the source text, then it is possible to expand, at times, into more idiomatic target language structures and exceed the Semantic level of processing.

The Lexical level of processing is always available and may be chosen even in a translation if the goal is to provide access to the original structure and culture of the source text. Lexical and Phonological levels of processing also may be generated during interpretations if the source text is not well understood by the interpreter, if the interpreter is becoming exhausted, or if the interpreter is not adequately fluent in the target language to process at any higher level.

4.6 Labels Within the Profession of Interpreting
An important development in the profession of interpreting was the founding, in 1964, of an organization of signed language interpreters which came to be called the Registry of Interpreters for the Deaf (RID). When the RID was first established it was composed of people who worked in professions involving deaf people, primarily education, but who only worked as interpreters on a volunteer basis. In other words, there was no such thing as a *professional interpreter* working in the Deaf community in 1964.

Just four years prior to the founding of the RID, William Stokoe had published the first scientific analysis of the structure of American Sign Language and claimed that it was indeed a language, separate and distinct from any other language. Stokoe also noted variety of language use within the deaf community which was well known to the founding members of the RID.

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[55] Personal communication regarding educational interpreters from Janet Cerney (in press).

The original members of RID were focused on finding more qualified people to provide interpreting services rather than academics or linguistic analysis. They identified two varieties of signing - one which was understood to be a mixture of ASL and English and the other more true to ASL without influences of English. Working between spoken English and the mixed version was initially called "translation" while the other kind of work was called "interpretation". Years later the word "transliteration" replaced the use of "translation" as people gained a better understanding of these technical terms. And yet one of these labels is still not accurate.

4.6.1 Literal and Idiomatic Interpreting

In general the act of interpreting is known to be taking a message from one language to another without altering the meaning of the message. Translation is known as taking a fixed (documented) message from one language to another without altering the meaning of the message. There remains some additional variation in the use of these terms and one area of specific concern is how these acts are performed when the consumer of the services knows both the source and target languages. In other words, if the deaf person knows both ASL and English, then there are additional options in how to perform interpreting services.

The field of translation recognizes the extreme ends of this variation as "literal translation" and "idiomatic translation." Literal translations transfer the meanings of the words but do not make grammatical or cultural adjustments in the process. Idiomatic translations are so natural that they do not appear to be translations at all but to have been created originally in the target language. Literal translations are useful for people who either know about the grammar and/or culture of the source language or want to know about it. Idiomatic translations are useful to people who either don't know about the grammar and/or culture of the source language or don't need to know that information as part of the translation process.

The same ideas of variation can be applied to interpretation as well. In other words, a deaf person who knows both ASL and English may desire a literal interpretation. A literal interpretation would use ASL signs for access to information but it would arrange those signs in the same grammatical order as the original spoken English message. Bilingual Deaf people can use their knowledge of English grammar to resolve mismatching of ASL grammatical information and English information. The deaf person would also use knowledge of English to fill in gaps created because English marks its grammar in ways that ASL has no vocabulary to represent.

This task of performing literal interpretations is the same task that the Registry of Interpreters for the Deaf certifies as "Transliteration." Technically this term is incorrect, but it does mark a distinction between idiomatic interpreting and literal interpreting. Transliteration is known to be taking a message from one form of one language into another form of the same language. Literal interpretation does change language, but not into the most natural-sounding variety of language. For this reason the label "interpreting" did not seem appropriate. The RID originally called this task Translation, then changed it to Transliteration once the technical differences between interpreting and translating were better understood by the profession. In fact the two processes are both Interpreting: one being Idiomatic Interpreting, the other Literal Interpreting. This means that one of the certifications still being issued by RID at the time of this writing has an inaccurate label: the Certification of Transliteration actually is a test of Literal Interpretation.

Literal interpretations may be very useful for bilingual deaf people. The notion of Register Variation can be applied to this task in that the appropriate use of ASL for a given Person, Setting, and Topic may include more linear productions of ASL or even include influences uniquely related to English.

• Person: English may be the dominant language for the deaf person. In this case ASL is a means of accessing information but the deaf person prefers to have the information arranged in English grammatical structures.

• Setting: The environment surrounding the communication may be academic or business oriented, both of which tend to make extensive use of written languages for books, assignments, and computers.

• Topic: The topic may be information which will appear on an examination or may be expected to be reproduced in minutes of a meeting or in company reports, etc.

Being able to perform both idiomatic and literal interpretations is important. So which is easier? Many people have misunderstood literal interpreting to be the easier task. Literal interpreting requires conceptually accurate sign production within grammatical structures that are not efficient in ASL. This means that the hands will be moving much more quickly to generate the information, more fingerspelling will be required to fill in gaps for grammatical relationships, and the interpreter's mind will be very busy processing the meaning while remembering the grammar used to generate the source text. In short, literal interpreting, done correctly, is much harder physical work than interpreting.

Generally a literal interpretation is done with very little processing time because the human brain cannot retain both the meaning and the source text grammar for extended periods of time. In other words, Literal Interpretation is most commonly part of Simultaneous Interpreting and is very rarely seen as a part of Consecutive Interpreting. This increases the chance for the interpreter to generate errors, to misrepresent meanings, or to become overwhelmed, stop, and begin again after missing a portion of the source text. People pursuing certification should begin with certification in idiomatic interpreting. Once that ability is proven, then it is possible to move on to certification in literal interpreting.

4.6.2 "A", "B", and "C" Roles of Interpreters

A third set of labels help us define the roles of interpreters within interpreting teams. The primary service provider at any moment is the "A" interpreter. If there is only one interpreter providing services then that person is by definition working as an "A" interpreter. If two people are hired to provide services, then the second person is likely to be functioning as a "B" interpreter. This means that the "B" interpreter is monitoring both the source text and the "A" interpreter's target text and is also prepared to provide clarifications or corrections to the "A" interpreter as needed. Generally the "A" and "B" roles are alternated as the two interpreters take turns providing the primary interpreting service.

A "C" interpreter is one who is only observing the work of an "A" interpreter and is not involved in the interpreting process. Often interpreting students begin their practicum placements as "C" interpreters. There is value in having a "C" interpreter in that an observer may be able to identify both areas of excellence and areas of needed improvement which might be missed by the "A" and "B" interpreters. A "C" interpreter can also observe how the "A" and "B" interpreters work together as a team and then provide feedback to that team.

A common practice in the early days of interpreting teams was for one interpreter to serve in the "A" role while the other "took a break". Both interpreters might have been physically present for the entire duration of the assignment, but only one was ever working at any given time. If the "A" interpreter needed any support to resolve ambiguity in the source message or to recapture a missing element, the other interpreter was not prepared or even paying attention. The result of this arrangement is that each interpreter alternates in the "A" role, but otherwise is not participating in a team approach to interpreting. This arrangement has come to be known as "tag team" interpreting.

4.7 Relayed Transcommunication

Now that we have an understanding of the varieties of transcommunication we can expand yet again and combine two transcommunicators into a relayed transcommunication, which has two people processing the message from the source to the target forms. This is most generally referred to as relayed interpretation, since the most common applications among spoken-language interpreters involve language-based source texts and target texts.

There is a fairly common practice for interpreting in the Deaf community which is more appropriately identified as relayed elucidation. These instances involve one team member working between English and ASL (interpretation) and the other team member working between ASL and something less than language (elucidation). This service may be performed for deaf people who were not consistently exposed to any accessible language prior to puberty or for deaf people who have immigrated to a language community where the person's native language is not known by any local interpreters. In these situations, the hearing interpreter would interpret information from the English into ASL. The deaf interpreter, working from this interpretation, would then create a gestural message in an attempt to allow the deaf consumer to understand the essence of the original source text. The process would also work in the opposite direction. Any gestural reply from the deaf consumer

would then be conveyed in ASL to the hearing interpreter who would then complete the process by interpreting from ASL to English. Although this service is essential for ensuring justice in the legal system, the present research does not investigate this kind of relayed transcommunication.

There are countless varieties of relayed transcommunication. The overall work being accomplished by the team defines the kind of relay work being done. In other words, the forms of the source message and the final target message determine the label for the team's work. If the source and final target are different languages then the team members are involved in either relayed interpretation or translation. If the source message and the final target message share the same language, but different forms, then the team is involved in relayed transliteration. Within the overall team process, each team member will be responsible for contributing a specific process within the overall process. The chart below identifies several possible combinations.

Source Language & Channel	Processing of Team Member 1	Processing of Team Member 2	Final Target Language & Channel	Overall Team Processing
Spoken English	Interpreting English to ASL	Transliterating ASL to Tactile ASL	Tactile ASL	**Relayed Interpretation**
Spoken English	Interpreting English to ASL	Elucidating ASL to Gestural Communication	Gestural Communication	**Relayed Elucidation**
Spoken English	Interpreting English to ASL	Interpreting ASL to LSQ	Signed Quebec Sign Language	**Relayed Interpretation**
Spoken English	Transliterating to Cued English	Transliterating to Lipreadable English	Lipreadable English	**Relayed Transliteration**
Signed ASL	Shadowing / Mirroring ASL for audience access	Transliterating ASL to Tactile ASL	Tactile ASL	**Relayed Transliteration**
Signed ASL (but disfluent)	Transliterating to grammatical ASL	Interpreting to Spoken English	Spoken English	**Relayed Interpretation**
Gestural Communication	Elucidating to ASL	Transliterating to Tactile ASL	Tactile ASL	**Relayed Elucidation**

Figure F4.14 – Some Varieties of Relayed Transcommunication

4.7.1 Relayed Interpretation

Relayed interpreting is the process where one person conveys a source text into a target text which then serves as another person's source text in order to generate a second target text. Relay interpreters have been doing their work for at least several decades, yet their work has not been extensively researched or even documented.

The Registry of Interpreters for the Deaf (RID) began evaluating and certifying interpreters in 1972. Among the people receiving certification were deaf adults who were fluent in both English and American Sign Language. They were eligible to receive a certification known as the "Reverse Skills Certification" or RSC. RSC certification indicated that the interpreter had achieved at least a 70% accuracy rating in conveying signed language source texts into spoken English. The RSC was awarded as a partial certification for hearing interpreters who had not demonstrated an overall 80% rating in the three areas required for "Comprehensive Skills Certification" (CSC). The other two areas in the certification process required the candidate to be able to hear. Therefore deaf interpreters with an RSC were considered fully certified while hearing interpreters with an

RSC were considered to be only partially certified. The other areas required for the full certification, the CSC, were called “interpretation” and “transliteration”.

The practice of using a hearing and deaf interpreting team has come to be known as relayed interpreting. The process of relayed interpreting is as follows: One of the consumers produces a source text. For this explanation, let’s start with a spoken English source text. The hearing interpreter would then provide an interpretation into American Sign Language. The deaf interpreter would then treat this interpretation as a source text and provide a version of the message which the deaf consumer could more readily understand. When the deaf consumer produces a message, the deaf interpreter then provides a version in ASL designed to allow the hearing interpreter to provide an interpretation into spoken English. Generally this process is consecutive for dialogic discourse so that each piece of information is relayed completely before the next piece is attempted. To this date, relayed interpreting of either monologic or dialogic discourse has only been superficially analyzed.

The research in this study specifically investigates a monologic kind of relayed interpretation as it is applied within the American Deaf community. Two interpreters, one hearing and one deaf, are actively involved in the process of taking a message from English to ASL. This form of Relayed interpreting is used for conference presentations and business meetings. A similar form of relayed interpreting occurs with spoken-language relayed interpreting involving three (or more) languages. For example, an international conference where a message presented in Arabic is interpreted into French, which then serves as the source message for interpretations into several other languages. The significant difference for the form investigated in the present study is that only two languages are involved.

Conference proceedings are generally monologic in nature and therefore the use of relayed interpreting at conferences tends to be unidirectional: the hearing interpreter, sitting in the front row of the audience and facing the stage, actively determines the meaning of the spoken English source text and then creates an equivalent of that message in ASL. The deaf interpreter, standing on the stage with a clear view of the hearing interpreter, actively determines the meaning of the hearing interpreter’s target text and creates a new target text, also in ASL, but perhaps more cohesive and culturally appropriate than the hearing interpreter’s text. Both portions of this form of relayed interpreting occur simultaneously with the on-going source text; however each team members portion of this work may be accomplished in a series of consecutive performances.

Throughout this process, both interpreters are working in the “A” role. At first it may seem redundant to have two interpreters providing the primary service but there are very good reasons to use the service for specific consumers or settings. The hearing interpreters generally have English as their “A” language and ASL as their “B” language. The Deaf interpreters generally have ASL as their “A” language and therefore are more likely to make better cultural adjustments to the message. The ultimate result is a more idiomatic and cohesive message in the target language.

The choice to use relayed interpreting may also be influenced by the nature of the communication. Monologic discourse of a technical nature, such as conference lectures, may be best conveyed through relayed interpretation. The reason being that the Hearing Interpreter can provide a partial adjustment of the source language and culture to the target language and culture; then the Deaf Interpreter may be able to bring further adjustment in the final target message so that the deaf consumer(s) need not struggle to understand the resulting interpretation. The chart below provides a graphic representation of the process.

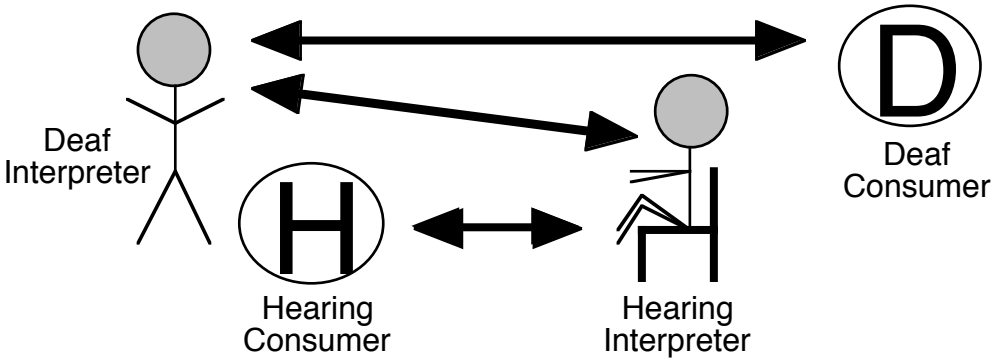

Figure F4.15 – Physical Arrangements of Relayed Interpreting Participants

The scope of this study is limited to the use of relayed interpreting within conference settings for four significant reasons: 1) it is ethically difficult (if not impossible) to perform research on actual court use of relayed interpreting since the introduction of researchers to the situation will not only distract the consumers and interpreters but may directly impact the result of the communication being interpreted. 2) the recording of a performance of interpreting designed for a large audience creates little distraction and should have a minimal impact upon the communication. 3) investigating this complex process in a unidirectional form reduces the total number of variables involved in the process, thus increasing the chances of accounting for the most significant factors. 4) research on the relayed interpretation of complex dialogic discourse will need a base which this research is intended to provide.

4.8 Summary of Terminology

This section has reviewed various aspects of communication and transcommunication. We began with a definition communication and the components of language represented in the Linguistic Pyramid. Transcommunication was explored, starting with interpreting, including consecutive and simultaneous interpreting. Translation was then reviewed along with the mixtures of Site Translation, Recorded Interpretation, and Performed Translation. The intralinguistic activities of Recited Reading, Transcription, Transliteration, and Shadowing were identified, followed by the extralinguistic work called Elucidation. We explored the six processing levels of Phonological (Sublexical), Lexical, Syntactic, Semantic, Pragmatic, and Stylistic (Textual). We continued with a discussion of literal versus idiomatic work and how the five processing levels interact with those labels. We identified key concepts in language fluency, including BICS and CALP; the differences between “A”, “B”, and “C” languages; and also between “A”, “B”, and “C” interpreters. Finally we explored the definition of relayed interpreting and its application within the Deaf community. The next section reviews various models related to interpreting.

4.8.1 Review Questions

1. What label is used to describe extralinguistic transcommunication?
2. What four labels are used to describe intralinguistic transcommunication?
3. What two labels are used to describe interlinguistic transcommunication?
4. What are the two kinds of interpretations possible, based on the amount of time between the presentation of the source text and the creation of the target text?
5. What kind of interpretation results from the spontaneous interpreting of a fixed text?
6. What is the correct label for the 'fixing' of a spontaneous text?
7. What is the difference between interpreting and translating?
8. Provide an example of a performed translation.

4.8.2 Suggested Activities

1. Take a children's story (with lots of pictures) and provide an elucidation of it which uses no more than five actual words or signs from any language. Use these words only to identify the actors or a few objects in the story. Use gestures, body posture, facial expressions to convey the actions of the characters, the plot, and any other details of the story.
2. Perform a recited reading of one of the dialogues which open each chapter in this book. Read the lines for Rasmus and Timoth as though they are having a heated argument. Read the lines again as though they are exhausted and can barely concentrate. Read the lines a third time as though they can hardly keep from laughing. Now find a partner who will perform the lines of one character while you perform the lines of the other and mix the approaches (for example, Rasmus might sound tired while Timoth seems to think everything is funny).
3. Look at Article I of the US Constitution and rewrite it so that it is clearly understandable but still completely accurate, including all the details. Now take this rewritten version (which is an idiomatic shadowing of the source text) and use it as the basis for a translation into another language that you know.

APPENDIX F5 – INTERPRETING MODELS

Models of Transcommunication

Timoth's forehead lowered onto the book. "I'll never memorize all of these models!"

Rasmus stopped and faced Timoth, "Why are you trying to memorize them?"

"So I can be a better interpreter," Timoth met eyes with Rasmus.

"How will memorizing a model make you a better interpreter?"

"If I understand the model, then I can know more about the process. If I know more about the process, then I can work to improve my skills."

"Yes, that's all true. But I still don't know how memorizing the models fits into all of this. Can't you understand them without memorizing them?"

Timoth sat up. "But if I don't memorize them, I'll forget all the pieces that fit into each little box or triangle."

Rasmus walked over to the chalk board on the wall and drew a square on one side and a circle on the other. "What do these stand for?"

"Well, some models use the circle for starting and stopping. Others use it to represent the human mind. Squares usually contain a process or a series of processes."

"No. The circle stands for understanding and the square stands for memorizing. You didn't even ask me what this was a model of. I never said it was a model of interpreting." Rasmus turned toward the board and started to erase it.

"So what is it a model of?"

"Its a model of your dilemma. You say you will never memorize all of the models but your goal is to understand them." Rasmus finished cleaning the board and faced Timoth. "My model showed memorizing and understanding as two separate tasks."

"But it was just a circle and a square. How can you call that a model?"

"Well, looks like you've got the memorizing part done already. But you still don't understand it, so it would seem we still need to work on the understanding."

"So your model simply showed that the two tasks were separate pieces. OK, so now I understand, but I first had to memorize, didn't I." Timoth looked back at the diagram in the book "I'm still stuck."

"What if I hadn't drawn the model at all. Could you still understand it without a picture?"

"Well, I suppose so. You mean that I could have understood the concept even without knowing what the model looked like? Well, if that's true then what do we need models for in the first place?"

Rasmus looked at Timoth and smiled.

Timoth leaned back into the chair "Because models can lay things out to help us understand complex concepts we wouldn't otherwise grasp."

Rasmus nodded, "So stop worrying about memorizing and start trying to understand."

Chapter 5
Models of Transcommunication

"Make Sure You Know The Rules Before You Play Another Person's Game." - 1997 BC

5.0 Overview
The Transcommunication Models presented within this section are intended to be simple, even intuitive, yet useful in providing direction for improving any potential interpretation and explaining possible sources of error in the interpreting process. Before we begin this review of models, we should understand two contrasting metaphors which frame our understanding of what an interpreter is supposed to be doing.

5.1 The Helper and Conduit Metaphors
A Metaphor is stating that one thing is another thing. A related concept is called a Simile, which is almost the same except that it uses a word of comparison. Paul Simon's song "I Am a Rock" uses a metaphor to draw a comparison of the qualities of a rock with himself as he faces the breakup of a romance. If he had called the song "I Am Like A Rock" he would have used a simile, but he also would have really messed up the rhythm and rhyme scheme of his song.

Members of the Interpreting profession have proposed various metaphors as a means of helping them explain how the interpreting process works. Sometimes they have been referred to as "models" but these metaphors are not detailed models of how a process works; rather, they merely make comparisons. These metaphors have influenced not only how consumers perceive the work of interpreters but also how interpreters see themselves. These perceptions have significant implications on ethical practices in our field, so it is worth investigating the metaphors and their resulting influence.

5.1.1 The Helper Metaphor
During the beginning of the Registry of Interpreters for the Deaf (RID), the only guide to the goals of interpreting was the RID code of Ethics. The original Code of Ethics, introduced in the summer of 1965, included a guideline that interpreters "shall maintain an impartial attitude during the course of his interpreting avoiding interjecting his own views unless he is asked to do so by a party involved." (Fant, 1990: 135). Other portions of the original code's twelve tenets suggest that the interpreter should determine the fluency of the deaf consumer and inform court officials as to the type of interpreting being done based on the deaf consumer's ability to read and write; and to "take responsibility of educating the public regarding the deaf whenever possible recognizing that many misunderstandings arise because of the general lack of public knowledge in the area of deafness and communication of the deaf." (Fant, 1990: 136). This early understanding of interpreting is commonly referred to as the Helper Metaphor.

5.1.2 The Conduit Metaphor
The Helper Metaphor for interpreting was largely replaced by the Conduit Metaphor in the 1970's once various flow-chart models of the interpreting process had been proposed (Gerver, 1974; Moser-Mercer, 1976, 1978) and a new Code of Ethics had been adopted by the RID. The new RID Code of Ethics at that time included the following tenet: "Interpreters / Transliterators shall not counsel, advise, or interject personal opinions" which, combined with these orientations to interpreting, contributed to the notion that an interpreter should behave as an unemotional conduit, or connection, between two people. Common comparisons were made to being a bridge or telephone such as this one from Sharon Neumann Solow (1981) in one of the first text books for teaching interpreting:

> The sign language interpreter acts as a communication link between people, serving only in that capacity. An analogy is in the use of a telephone – the telephone is a link between two people that does not exert a personal influence on either. It does, however, influence the ease of communication and the speed of that process. (1981: ix).

The Conduit Metaphor of interpreting suggests that the interpreter strive to have no influence on the communication being interpreted, to have no personal involvement of any kind, even to the extent of responding to questions asked of the interpreter. Neither the Helper Metaphor nor the Conduit Metaphor have any graphic

chart explaining a flow of information from one side through an interpreter and to the other side. These metaphors are not models but simply orientations to understanding the role of the interpreter.

5.1.3 The Mediator Metaphor

Cynthia Roy's dissertation (1989) focused upon dispelling the Conduit Metaphor by analyzing the interpretation of an interactive conversation. She then described the allocation of turns by the interpreter between the two consumers. Roy's study of the turn exchanges within an interpreted conversation demonstrated that the interpreter plays a very active role in the interpreting process but does not act as an agent of any one consumer. Roy demonstrated that neither the Helper Metaphor nor the Conduit Metaphor are adequate in representing the process of interpreting.

Ford (1981) proposed the idea of communication facilitator or communication specialist where the interpreter receives, decodes, encodes, and transmits messages. These elements to some extent are represented in Robert Ingram's models (1974, 1980). Sherman and Phyllis Wilcox (1985) approached the process of interpreting from the perspective of schema theory. Within this framework they state that the conduit metaphor of interpreting with its notion that the interpreter merely conveys information without becoming involved is "impossibly idealistic" (1985: 89). Wilcox & Wilcox instead propose that the interpreter is indeed very active in the construction of meaning during the interpreting process and that the ability to make predictions in the source text is a significant indicator of interpreting ability. Specifically they suggest that schema theory provides a powerful representation of the interpreting process.

Schema theory suggests that instead of decoding language to determine its meaning we actively apply our perspective and knowledge to pieces of language. The application of schema theory to the interpretation process would mean that interpreters apply their own personal experiences and linguistic skill to understanding a source text before then creating the target text (which still reflects the personal experiences and language skills of the interpreter). Our personal experiences and our knowledge of the world are interconnected in "schemes." Schemes are organization strategies such as an understanding that when the phone rings, a person can pick it up, start talking into it, and another person is very likely to be connected and able to respond. What's more, that other person is usually someone known to the person who picked up the phone. If such a scenario seems unremarkable to you, then you already have this scheme as part of your understanding of how the world works. But to a person who knows nothing about phones, the notion of picking it up and talking to it (it is, after all, just a piece of plastic) may seem rather bizarre.

The notion of having schemes is that as we construct an understanding of a linguistic message we are able to make predictions about what the rest of the message is likely to be. The predictions will influence how we understand new portions of the message. If they fit easily into the emerging scheme then they are readily understood. If they do not fit easily then the scheme may be adjusted to accommodate the new portions or the new portions may be rejected as meaningless. Wilcox and Wilcox suggest that the constructors of target texts (interpreters) will be more successful if they are able to predict the next pieces to be added to the source text.

Danica Seleskovitch (1995) incorporates the notion of schemes and schematic association. She proposes that the interpreting process can be described as three essential elements: 1) merging elements of linguistic meaning with extra-linguistic knowledge to obtain sense; 2) deverbalizing that sense as it emerges; and 3) spontaneously expressing this sense linguistically. Step one requires the interpreter both to attend to the source text and to associate its meaning with the interpreter's own experiences (schemes) and knowledge of language use. In this way the interpreter very actively participates in determining the meaning of the source text. As this understanding is achieved, the interpreter must eliminate any dependence upon the words used in the source language so that they do not adversely influence the creation of the target text. Finally, the interpreter spontaneously produces the target text, meaning that interpreters actively create their own, unique target texts from their own understanding of the source text.

The Helper Metaphor suggests that the interpreter is involved in the process but also that the consumers are not able to fend for themselves and need additional assistance. The Conduit Metaphor suggests that the interpreter is only marginally involved and that the consumers had better be able to figure out all communication problems on their own. We have seen that neither of these orientations is an accurate perspective of the interpreting process.

As mentioned previously, Ford (1981) used the term "Communication Facilitator" which has certain advantages over the other two metaphors. A facilitator is one who makes something easier or "facile". Interpreters accomplish a very complex skill, but do not necessarily make the communication itself any easier: the source consumer still has to figure out how to say what they want to say and the target consumer still has to figure out what the interpretation means. So Facilitator does not appear to be an adequate metaphor.

The terms "Helper" and "Facilitator" both imply interactivity with one or more parties. "Conduit" assures a connection between two elements (though not necessarily animate parties). The English word which incorporates the double connection between parties and the interactivity with both parties is "Mediator." Given the evidence of research in the interpreting process it appears that a Mediator Metaphor will bring us a more accurate understanding of the interpreting process.

With a few more descriptors we can expand this metaphor to a descriptive label such as "Bilingual / Bicultural Communication Mediation" to describe interpreting. Bilingual means that there are two languages involved. Bicultural means that there are two cultures involved. Communication is what is being attempted between two parties. A mediator is a person who actively engages two parties to bring them to a mutual understanding. A Bilingual / Bicultural Communication Mediator actively engages two parties, each with distinct languages and cultures, into a mutual understanding of their communication with one another. Likewise the notion can be adapted for transliteration as follows "Monolingual / Monocultural Communication Mediation." The identical elements would identify the more generic concept of transcommunication as "Communication Mediation."

5.2 Models of Interpreting

None of the models of interpreting are framed within the Helper Metaphor, but many are framed, at least in part, within the Conduit Metaphor. They regard the mechanics of interpreting as the essential essence of interpreting. Usually they do not recognize the impact of consumers upon the interpretation but rather begin with a source text and end with a target text; but source texts are created by people, and people have to interact with target texts in order for them to be useful. Many models of the interpreting process reflect the Conduit Metaphor simply because the models are attempting to show a process of "something in, something done, and something out."

Figure F5.1 – Minimum Requirements for an Interpreting Model

The Conduit Metaphor does not explain all of the interpreting process, but it can usefully explain part of the process.

5.2.1 The Gerver Model

One of the pioneers of interpreting research was David Gerver. Gerver condensed his own research and that of others into a psychological model based on human information processing theories. Gerver (1976) suggested that interpreting is largely an interaction of memory of incoming information, memory of target and source languages, and encoding / decoding strategies. Gerver's model was a flow chart which identified "the processes involved in decoding the source language message and its subsequent encoding in the target language." (1976: 196). As decisions are made they influence the paths taken along the flow chart. The primary value of Gerver's model is to identify many of the decisions and variables which influence the interpreting process.

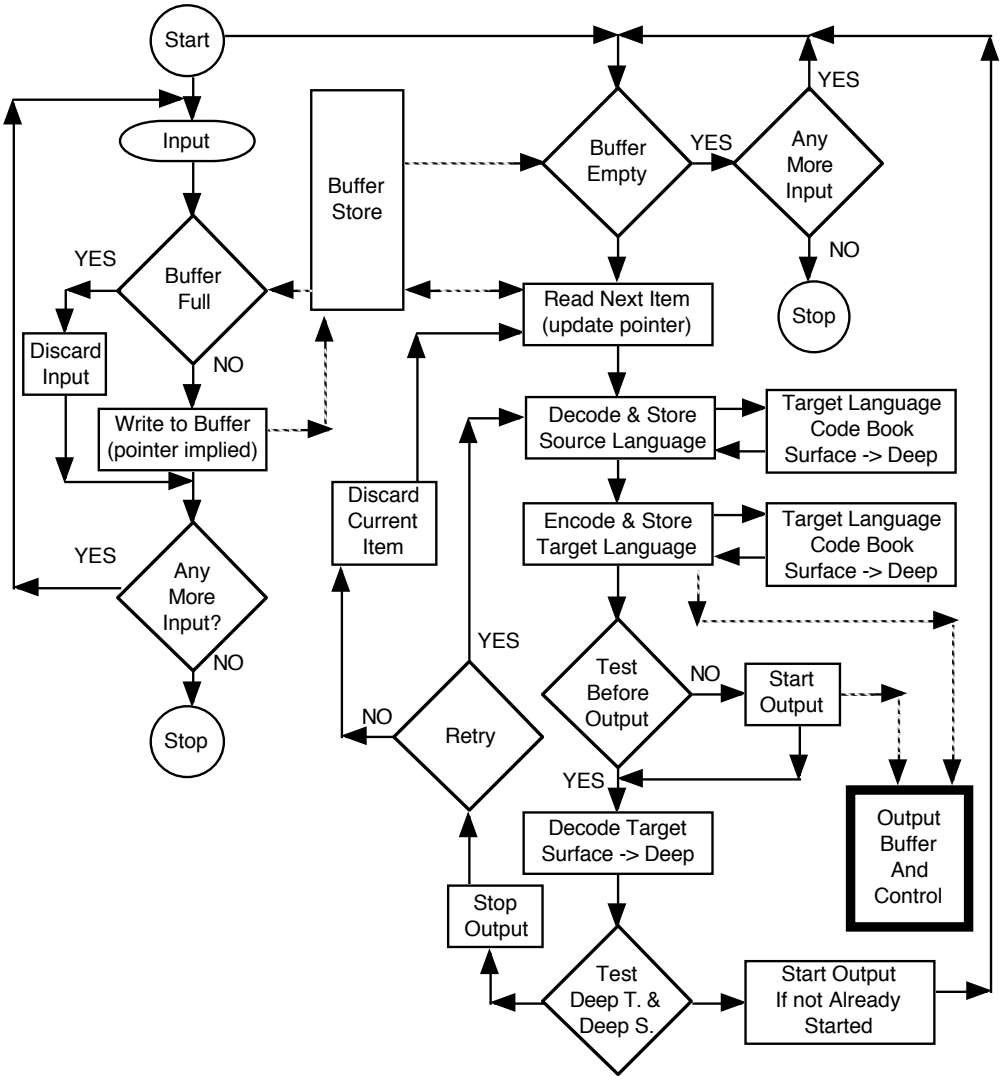

Figure F5.2 – Gerver's (1976) Model

5.2.2 The Moser-Mercer Model

Barbara Moser (1978) presented an information processing model which included more elements in the comprehension of the source language and the production of the target language than Gerver's (1976) model. Moser-Mercer's revision of her work (1983) outlines a processing model of interpreting which takes a message from auditory reception to a semantic understanding within context and then proceeds toward output in the target language. Also contained in the model are short-term memory and long-term memory which interact with linguistic skills. Moser-Mercer suggests that the understanding of the source text is limited to some extent by short-term memory to seven (plus or minus two) chunks of information[56]. She explains the difference between experienced and inexperienced interpreters as a function of the relative size of each chunk with more experienced interpreters being able to group larger sets of ideas into single chunks of meaning.

[56] George Miller (1956) identified the patterns that the number seven had in psychological research including short-term memory.

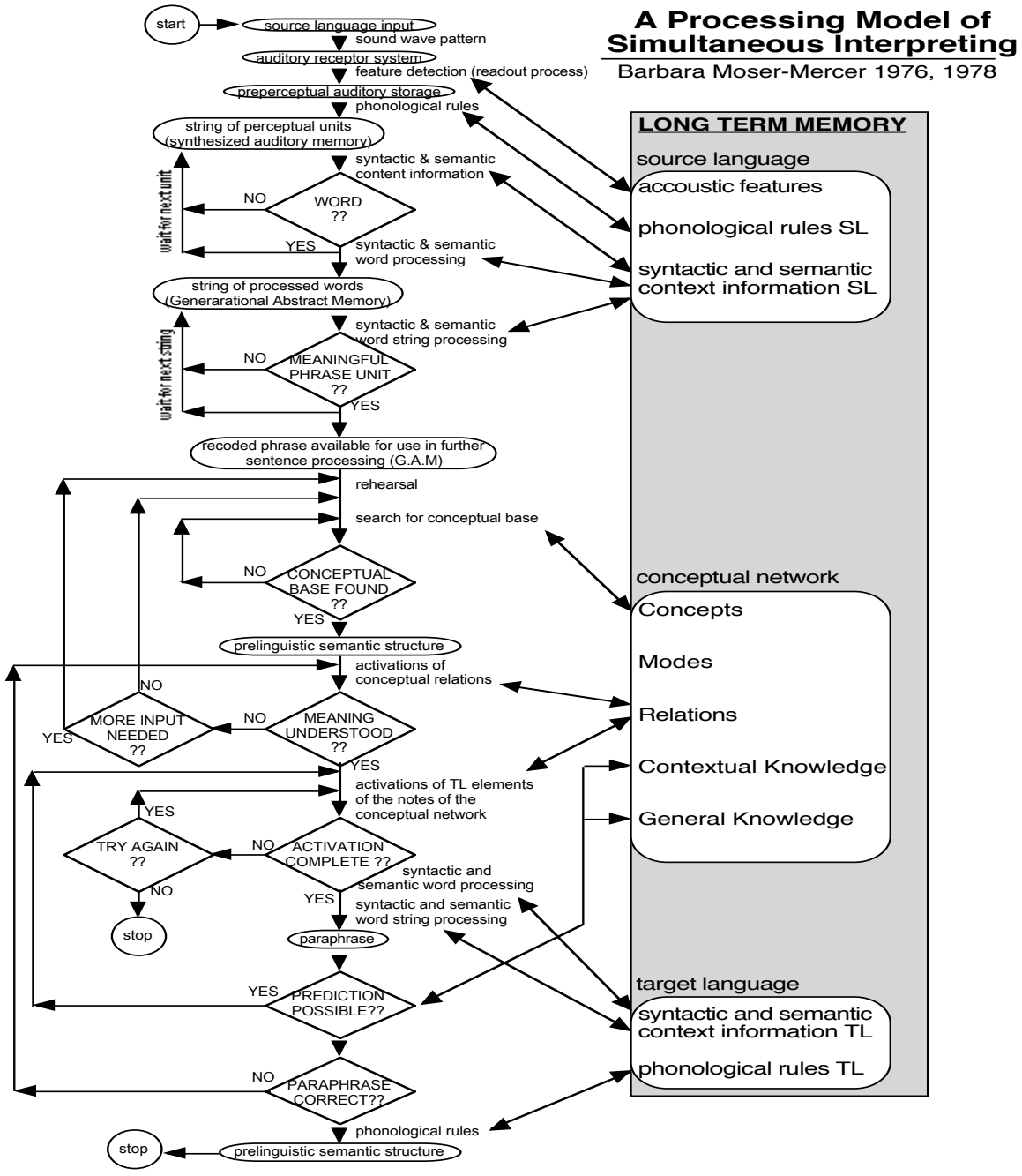

Figure F5.3 – Moser-Mercer's (1978) Model

Smith (1983) reviewed Moser-Mercer's model and commented:

> There were several points of Dr. Moser-Mercer's model with which I was particularly struck: the simultaneity of a multitude of tasks, the importance of restructuring the way an idea is expressed, the need for rapid analysis, the place of public speaking skills, and the necessity of being able to work well under stress. (Smith, 1983:71)

Moser-Mercer's recognition that language and language processing rely upon long-term and short-term memory is a significant contribution to the models of the interpreting process. Her hypothesis that more experienced interpreters are able to group larger portions of the source text into each meaningful unit sheds light on the concepts of understanding a message. Is the message only understood to the level or the words? Are the sentences meaningful? Does the text "make sense" to the interpreter? The ability to understand the meaning of a message would have a significant impact on the ability to maintain accuracy through the interpreting process.

5.2.3 The Ingram Models

Robert Ingram (1974) proposed a model of interpreting whereby the interpreter served as a channel of communication between the presenter of a source message and the receiver of the target message.

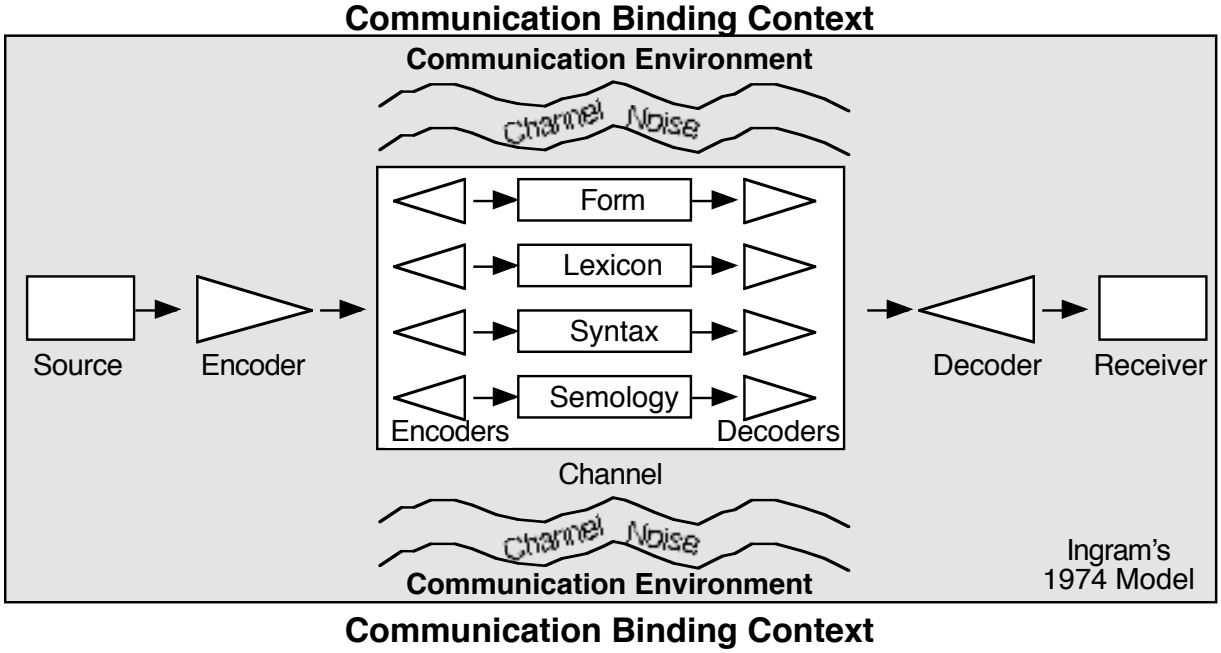

Figure F5.4 – Ingram's (1974) Model

In 1980 Ingram released a revised version of his model which accounted for greater complexities in the understanding of multiple messages in the source text and the challenge of re-encoding all of these messages into the target text. His model is a one-way process of encoding form, lexicon, syntax, and semantics from multiple potential codes within the source language into the multiple potential codes of the target language amidst whatever noise exists within the communicative context. Greater noise impacts the process by reducing the amount of information processed. Ingram's model set the stage for an understanding of interpreting as being at least more complex than repackaging a message between two languages because the interpreter had to understand the sense of the source text given its context.

It is worth noting that Ingram's models acknowledge several additional factors to the overall interpreting process: 1) Communication occurs within a physical context or setting, 2) All contexts have some amount of noise which may interfere with the language channels being used, 3) There are more people than just the interpreter involved in the process (the Source and the Receiver).

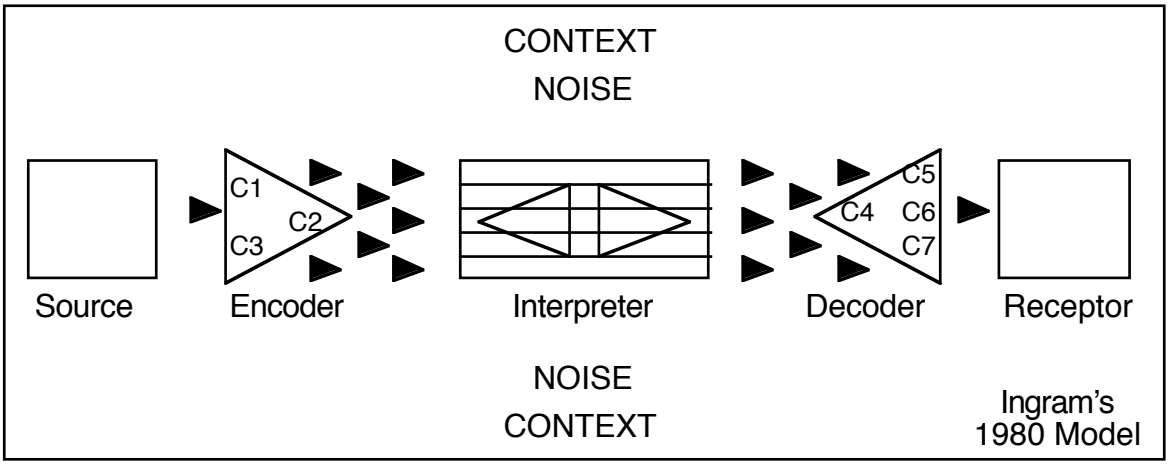

Figure F5.5 – Ingram's (1980) Model

5.2.4 The Cokely Model

Dennis Cokely (1984) proposed that the act of interpreting was not merely information processing, but rather the mediation of information "between two individuals and communities as well as mediating between two languages." (1984: 10). His sociolinguistic model of interpreting combines the features of memory with specific linguistic abilities (similar to Ingram's model). The categories of linguistic skills which Cokely includes are syntactic, semantic, and contextual knowledge as well as a knowledge of culture. These skills apply to both the source and target languages. Cokely specifies three progressive levels of linguistic processing: 1) lexical & phrase level, 2) sentence level, and 3) discourse level. Finally, Cokely allows that the stages within the process of interpreting need not flow only in one direction, but that it can back up as needed in order to correct potential or realized errors. Cokely's model accounts for four kinds of errors: 1) errors in perception, 2) errors in memory, 3) errors in production or 4) errors due to incomplete development of knowledge of the source language and/or target language.

Specifically, Cokely's model identifies seven stages to the interpreting process: 1) Message Reception, 2) Preliminary Processing, 3) Short Term Message Retention, 4) Realization of Semantic Intent, 5) Determination of Semantic Equivalent, 6) Syntactic Message Formulation, and 7) Message Production. Each of these seven areas has related influencing factors which make connections to the interpreters knowledge of the source language and of the target language. Cokely's model is a flow chart in which the various pieces are interconnected in multiple ways.

Cokely's model focuses on the mental processes of the interpreter and does not directly acknowledge the physical context nor the source and target consumers of the interpreting process. Cokely's model does acknowledge that the movement between various elements in the model is fairly fluid and unimpeded, as compared with Moser-Mercer's model which dictates very clear lines of processing between stages. Cokely's model recognizes that the human brain is actively involved in decision-making based on a variety of factors.

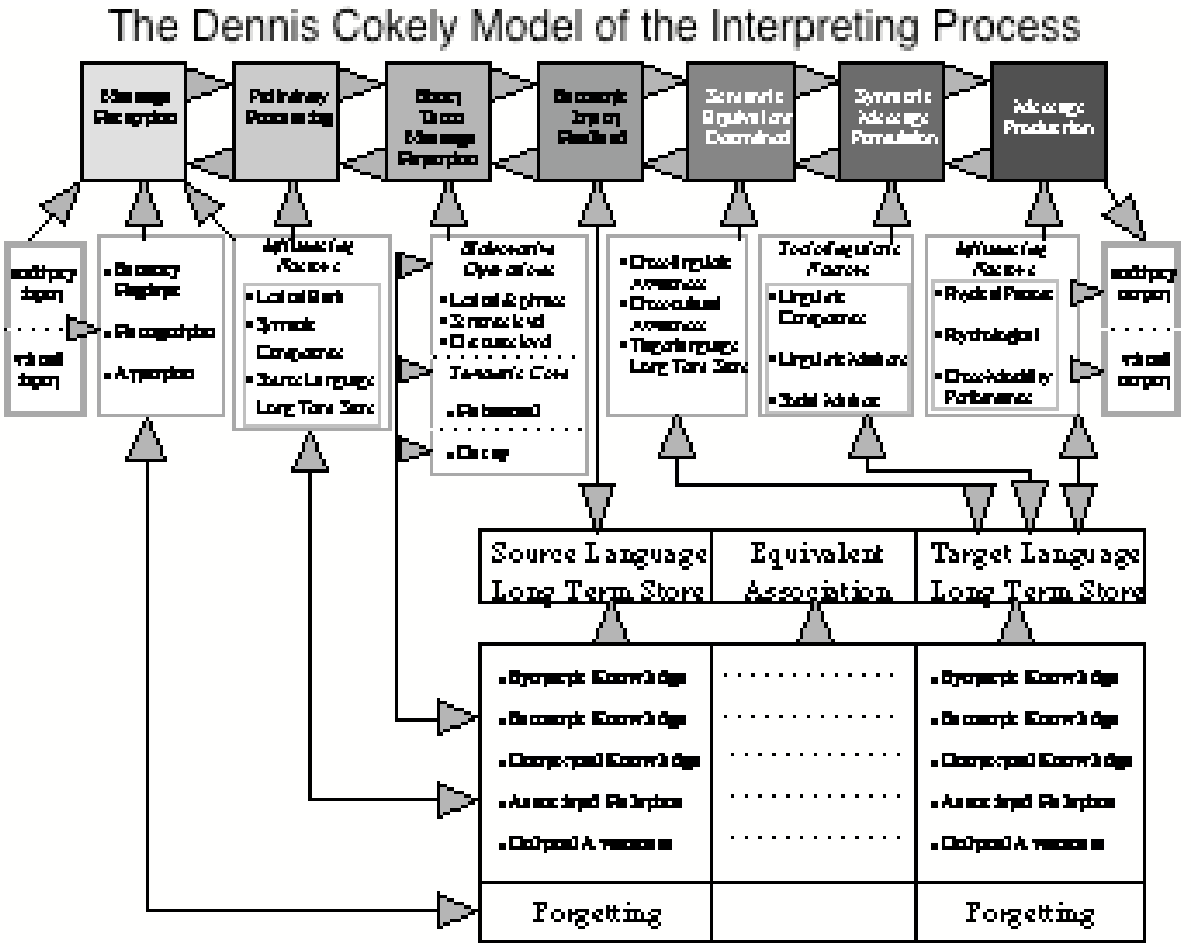

Figure F5.6 – Cokely's (1984) Model

5.2.5 The Llewellan Jones Model

Peter Llewellan-Jones (1981) investigated variation in interpreting between BSL (British Sign Language) and spoken English. He proposed several models. One of them specifically addresses idiomatic interpreting while the others attempt to explain other aspects of more literal interpreting. The idiomatic model is presented here. It suggests that proper interpreting requires an understanding of meaning, independent of language, from which the target text is created. His other models will identify the form of the message, rather than meaning, as a stumbling block for people who do not succeed in true interpreting.

Llewellan-Jones' models address the issue of language fluency as an essential component of the interpreting process. Deficiencies in either the source language or the target language will by necessity have a negative impact upon the interpretation.

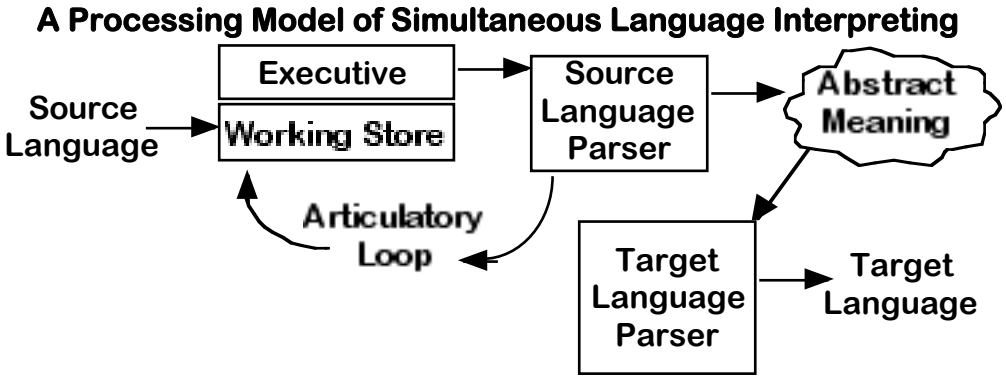

Figure F5.7 – Llewellan-Jones' (1981) Model of Idiomatic Interpreting

5.2.6 The Colonomos Models

Betty Colonomos (1987) developed a model of three major tasks (*Concentrating*, *Visualizing*, *Rehearsing*) which were connected by two additional variables (Source Frame and Target Switch). By 1992 she had revised this model slightly, using different descriptors (*Visualizing* was replaced by the term *Representing*, *Planning* replaced *Rehearsing*). Concentrating is essential to the process is comprehension of the source text which must first be attended to, then analyzed, and then understood independent of the particular words used. The Source Frame (who is speaking to whom, in what environment, and about what topic) guides this comprehension of the source text . Representing is how the interpreter finds a way to remember the information independent of the source language structures. This representation of the ideas moves through a Target Switch in which the ideas are brought into the second language. The final stage is Planning, during which the interpreter mentally assembles the target language structures (composition), mentally reviews the initial composition by making additions or corrections (revision), and then finally delivers the mental composition into a production in the target language (production).

Colonomos (personal communication) has used the model as a basis for interpreter training and has students apply the concepts initially in consecutive interpreting tasks where the sociolinguistic frame and communication goals are directly addressed prior to the presentation of the source text. Attention is drawn to the register and performance of the source and target texts as key elements of finding equivalence (beyond the words and sentences). Consecutive processing allows the students to anticipate portions of the source text, mentally represent those concepts without the competition of simultaneously perceiving them, actively plan and rehearse the target text with peer review, and then generate a final performance of the target text.

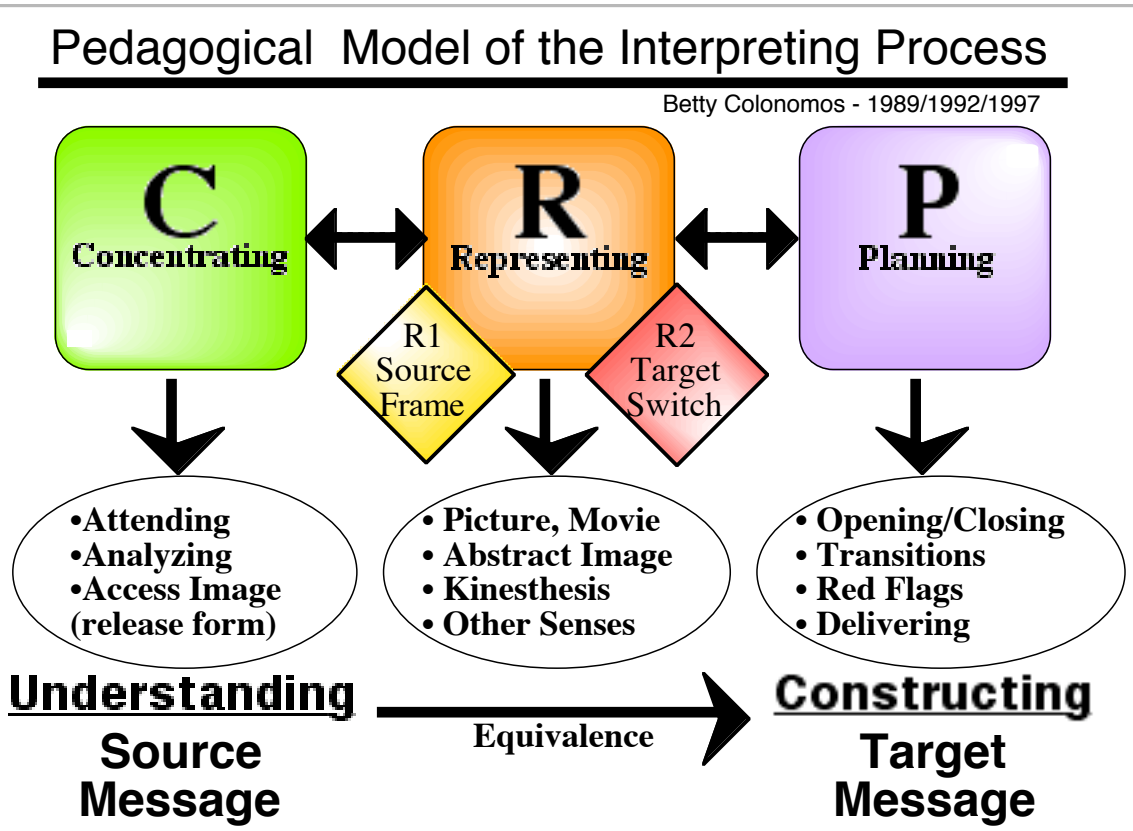

Figure F5.8 – Colonomos' (1997) Pedagogical Model

The simplicity of the model is somewhat deceptive because it is attempting to contain most of the concepts addressed by the other models in this section. The most significant additional contributions are the focus of the sociolinguistic frames of the source and target consumers and their impact on the message. An interpreter who is disconnected from the community of either the source or target consumers will struggle to find equivalence in the interpreting process.

To further explain the complexity of the interpreting process represented in the above model, Colonomos generated two other models accompany her Pedagogical Model. The first supplementary model identifies the components of how a person constructs meaning from a linguistic message. These components include knowledge of the language, the culture, the setting, and the participants, all contained within the context of the communication itself. The interpreter determines meaning from all of these factors but is also influenced by a variety of factors including their own culture, ideas, language abilities, feelings, personality, and the style of the presentation. Amid all of these factors a person determines their own understanding of the meaning of a message.

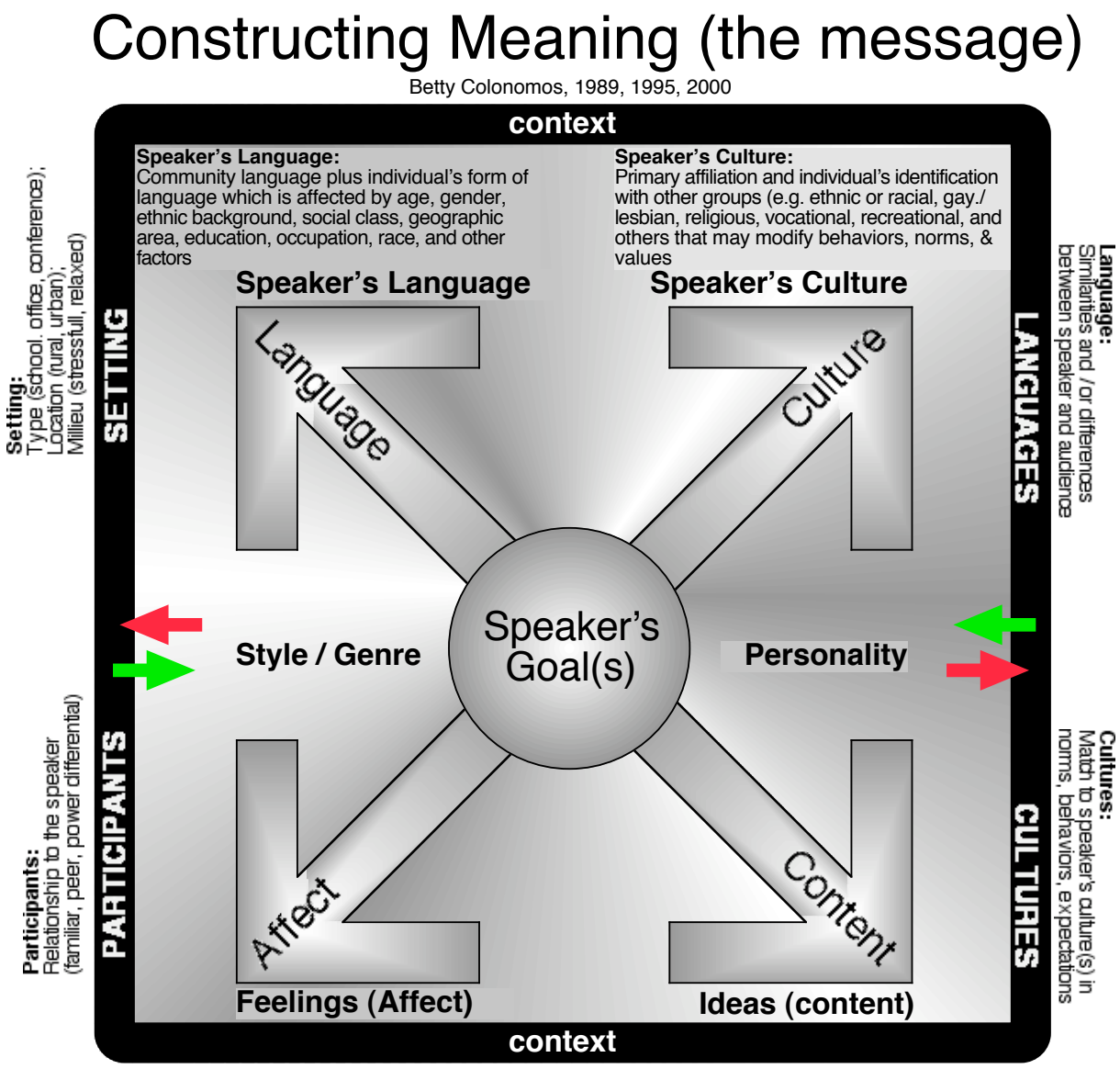

Figure F5.9 – Colonomos' (2000) Model of Meaning Construction

Colonomos then inserts this entire model of meaning construction into a larger frame of explanation for the entire interpreting process. This process includes factors influencing both the analysis of the source text and the production of the target text. These factors include processing skills, process management abilities, competence in each language, general knowledge, specific preparation for the assignment, awareness and knowledge of the environment, and various filters.

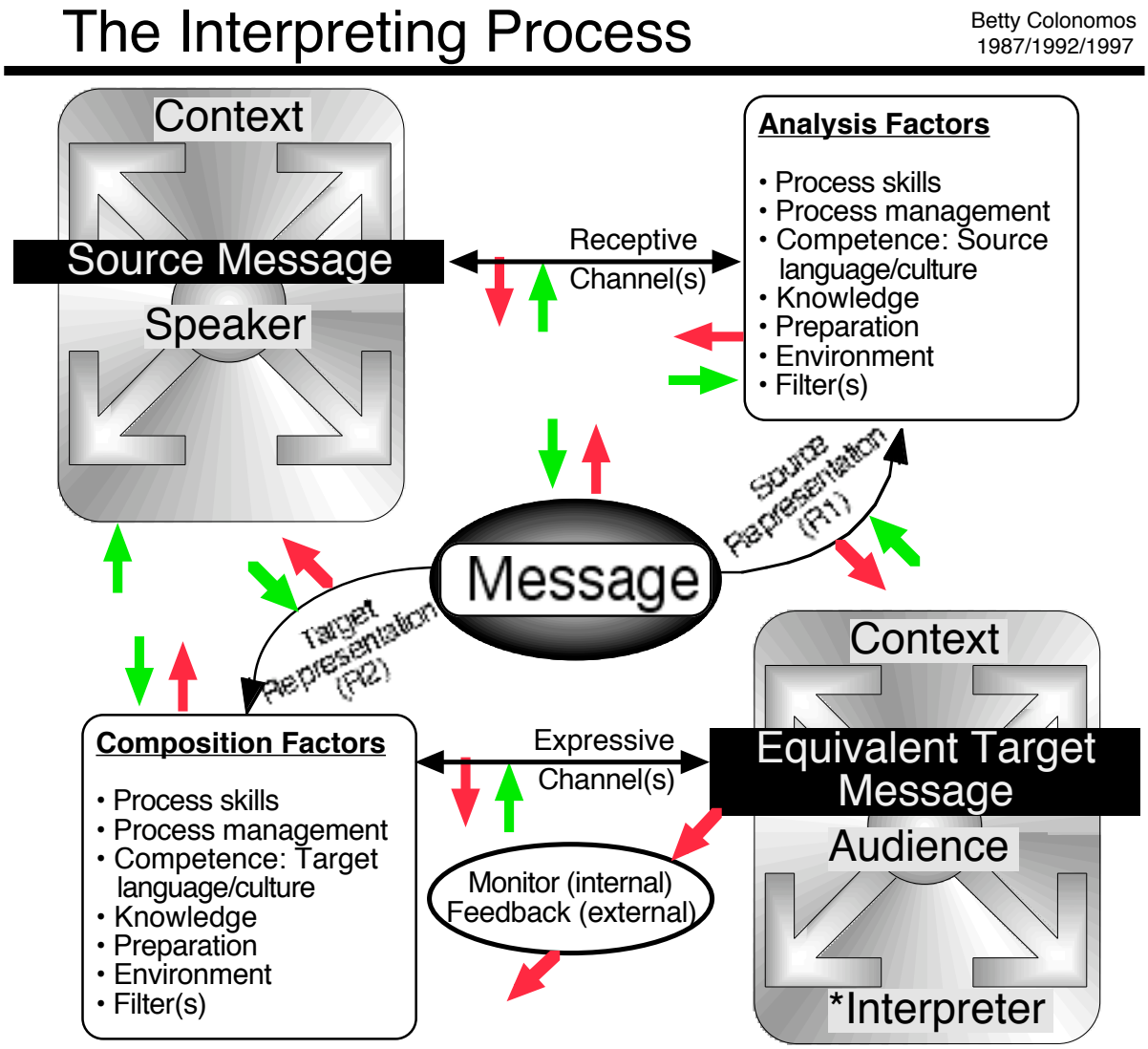

Figure F5.10 – Colonomos' (1997) Model of the Interpreting Process

5.2.7 The Kirchoff Model

All of these models mentioned so far focus on the interpreter as acting on source texts and creating target texts. Aside from the Ingram models and the Colonomos model, above, they consistently overlook the physical contexts and the consumers of the interpreting process. Someone had to create the source text and someone should be attending to the target text. Most of the models of the interpreting process make little mention, if any, of these consumers of the interpreter's services. Kirchoff's (1976) "Three-Party, Two-Language" model of interpreting makes a specific effort to include the consumers. The presenter of the source text is identified as having 1) an inherent nature, 2) a culture (including language), 3) a task to accomplish. The source consumer conceives of a concept or idea to be conveyed (Cs) which the source consumer encodes and expresses. The resulting message is recognized and decoded by the interpreter who then registers the concept (Ci) and then encodes and expresses a new message, which the target consumer recognizes decodes and understands as a Concept Registered (Cr).

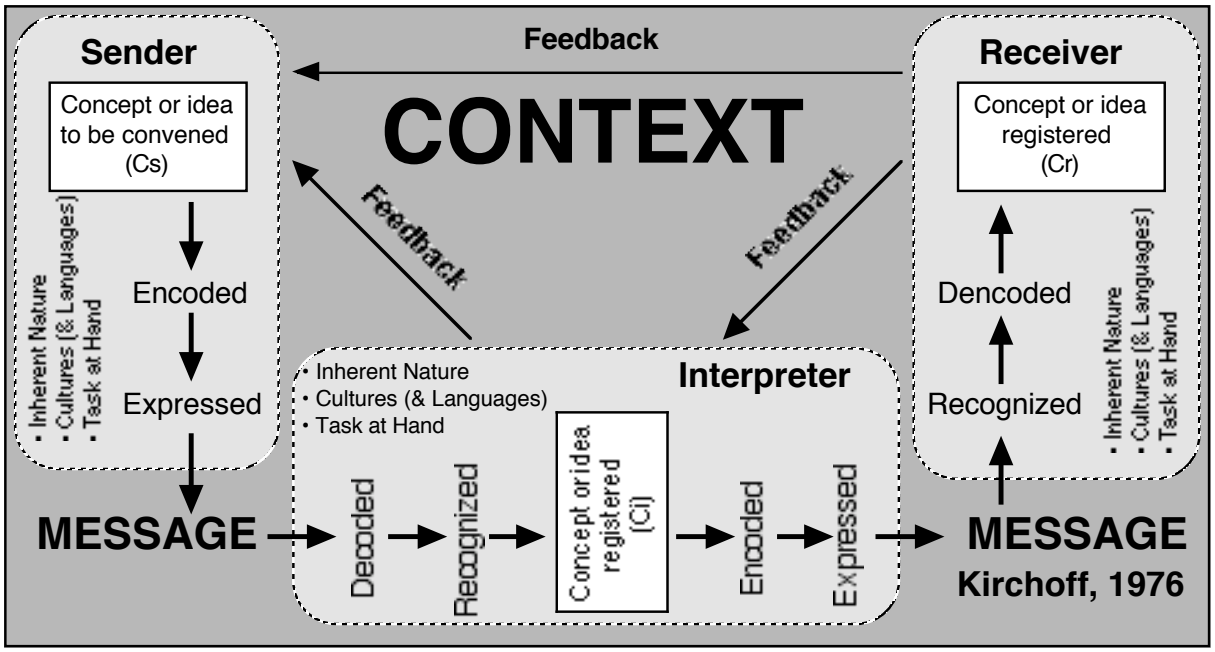

Figure F5.11 – Kirchoff's (1976) Model

Surrounding the interaction of these three participants are three forms of feedback: Target Consumer directly to Source Consumer, Target Consumer to Interpreter, and Interpreter to Source Consumer. It is important to note the first of these, because it is a form of communication which directly links the consumers without including the interpreter. Kirchoff's is the only model to identify this direct link of communication between consumers, independent from the interpreter.

5.3 Models of Literal Interpreting

Betty Colonomos and Peter Llewellan-Jones have both provided models of literal interpreting and models of failed interpreting which may approximate literal interpreting. These are reviewed here to explain the concept of intentional monolingual transcommunication which provides greater clarity and/or access to another person's message.

5.3.1 The Colonomos Model

Colonomos' models are divided into transcommunicating which is either Product-based or Process-based. Colonomos identifies the product-based efforts as intentional attempts to generate the target text in the forms that are used, either idiomatic ASL, or more linear, English-based productions of ASL or of manual English codes. The Process-based efforts identify two different goals: processing the form (coding) or processing the meaning (interpreting). Colonomos suggests that many attempts at interpreting are thwarted by inadequate competency in the target language and the attempt at interpretation fails to achieve an idiomatic result.

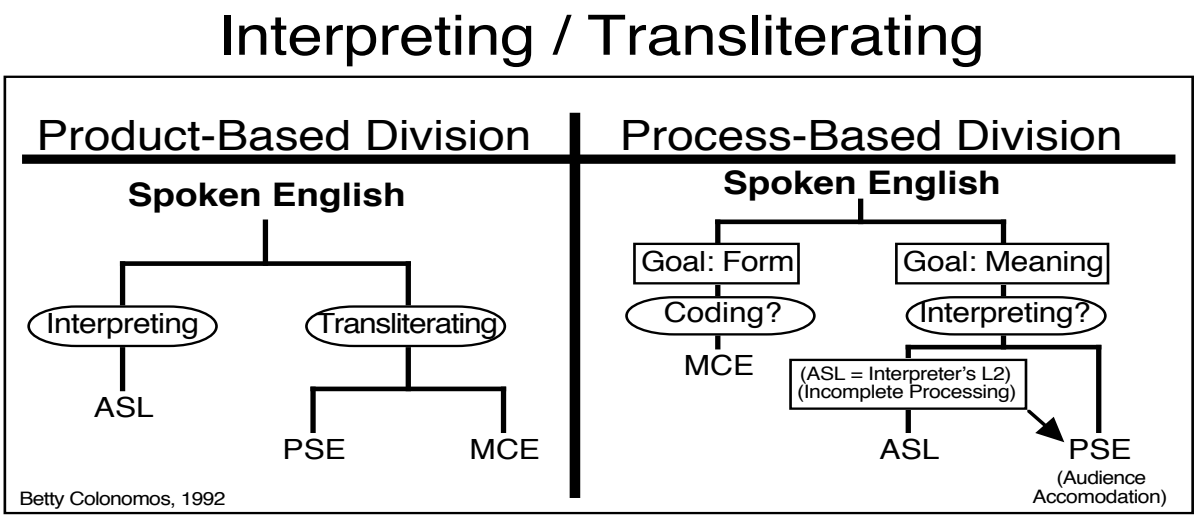

Figure F5.12 – Colonomos' (1992) Model of Literal Interpreting Options

The Colonomos model indicates two main possibilities: a) the interpreter is intentionally processing the message to be a literal interpretation (identified in the graph as "transliterating") or b) the interpreter is attempting to be idiomatic, but is falling short of that goal.

5.3.2 The Llewellan-Jones Models

Llewellan-Jones identifies these same concepts with three distinct representations: a) an intentional effort to provide a literal interpretation, b) an inadequate processing which focuses on the form, rather than the meaning, and c) an unintended literal processing due to lack of target language fluency. Llewellan-Jones specifically identifies the target language as BSL (British Sign Language) but the concepts are not limited to only one signed language.

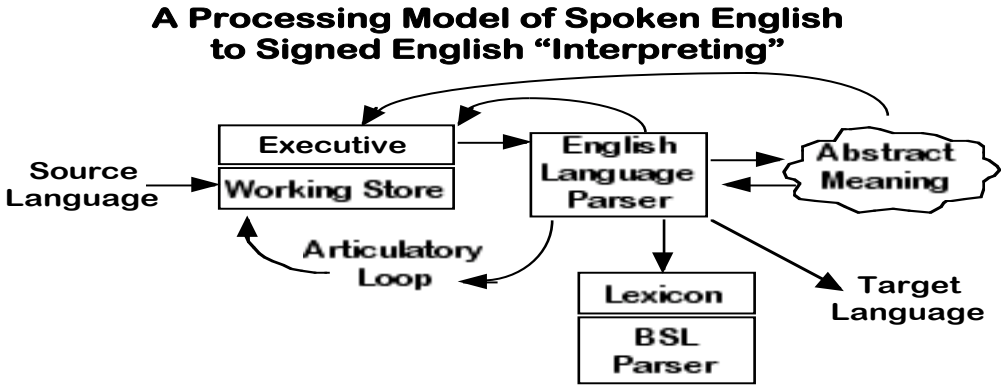

Figure F5.13 – Llewellan-Jones' (1981) Model of Intentional Literal Interpreting

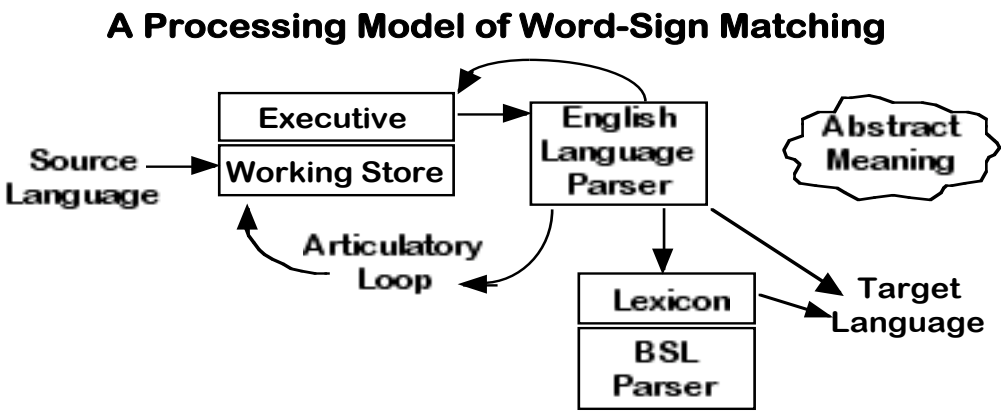

Figure F5.14 – Llewellan-Jones' (1981) Model of Inadequate Processing of Form

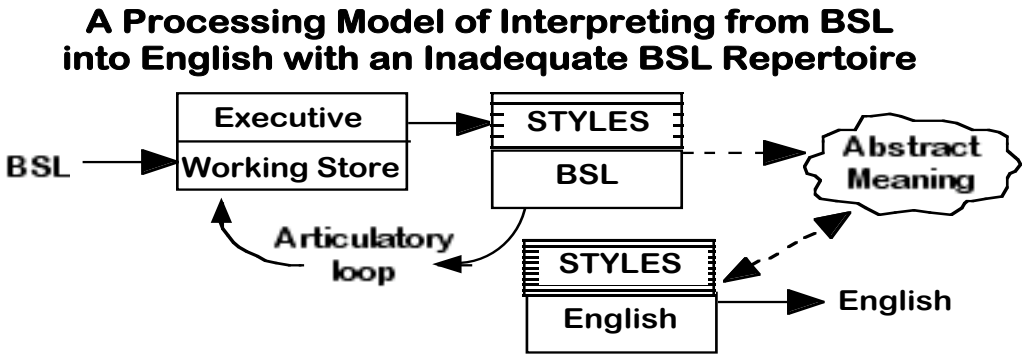

Figure F5.15 – Llewellan-Jones' (1981) Model of Unintentional Literal Interpreting

5.4 Summary of Models

What remains to be acknowledged by any of these models of interpreting is the ability for the target consumer to receive some portion of source text information directly from the source consumer. Kirchoff's (1976) model comes closest by identifying a link of feedback from the consumer to the source presenter, but Kirchoff does not identify the possibility of the target consumer directly perceiving any source text elements, particularly paralinguistic elements such as gestures, facial expressions, or vocal intonations. Another factor not mentioned in any of these models is the familiarity that the source and target consumers have with each other and familiarity that each has with the interpreter, although Colonomos' models come close by addressing the sociolinguistic frames of the consumers and the interpreter. One common consideration in assigning interpreters is to determine whether the consumers have worked with specific interpreters before and if so, for which interpreters each consumer may have a preference. If these variables are so important for the scheduling of interpreters they ought to play some role in the interpreting process itself.

Various models of interpreting have been proposed which present interpreting as a complex cognitive activity (Cokely, 1984; Ford, 1981; Moser-Mercer, 1978, 1983; Gerver, 1976; Ingram, 1974, 1980). Kirchoff (1976) proposed a model of the interpreting process which includes consumers. While these processes and models may be assumed to be relevant, even duplicated, during relayed interpreting, there remains a need for a researched model of relayed interpreting.

Several models of interpreting have considered memory as an integral factor within the interpreting process (Moser-Mercer, Cokely). Gerver (1974) demonstrated that comprehension memory is impeded during simultaneous interpreting as compared to listening without interpreting. Gerver further demonstrated that the

task of shadowing further impeded comprehension memory. Ingram (1992) tested these findings with interpretations from spoken English into ASL. He analyzed the above pattern described by Gerver and also by Lambert (1983) for interpretations from spoken languages to other spoken language as well as shadowing within a spoken language. Ingram found that idiomatic interpretations from spoken English into ASL yielded better semantic memory results than literal interpretations from spoken English into English-like signing. Ingram also discovered that listening alone resulted in lower semantic memory scores than either literal or idiomatic interpretation. Ingram concluded that these results indicate that literal interpreting (identified as "transliteration" in his research) is not merely an act of shadowing: there is a deeper level of language processing going on during "transliteration" than during shadowing.

Within the models previously presented this difference is explained by recognizing the different levels of linguistic processing required for each task. The task of shadowing conversational speech need not be processed beyond the syntactic level, and perhaps can be accomplished at the morphological level. While it is possible to shadow phonemes in new languages, the level of accuracy at conversational speeds is likely to depend upon one's ability to predict patterns of sounds through word recognition and even recognition of sentence patterns. Yet, at no point is it necessary for semantics to enter into the shadowing task.

Literal Interpretation, in order to be accurate, requires at least processing to the semantic level. Llewellen-Jones (1981) found some of the interpreters in his study of "transliteration" were processing the information while others were not. He explained that this was measurable due to the paraphrasing of information in the processed "interpretations" and by the word-for-word shadowing of the non-processed "interpretations." This evidence suggests that there is a difference based on the level of linguistic analysis applied to both the comprehension of the source text and the production of the target text. In order to remain accurate in extended discourse, literal interpretations should also be processed to the discourse and stylistic levels as well. Literal interpretations which are not processed to the discourse level are likely to be less than fully comprehensible to the consumer. Llewellen-Jones' examples of the non-processed literal interpretations fall short of processing at the semantic level.

Llewellen-Jones (1981) also found that limited knowledge of the target language will (logically) reduce the accuracy of the interpretation. This is to say that although an interpreter might understand a message beyond the semantic level, the resulting interpretation can not be produced at a level beyond the interpreters knowledge of the target language. The converse is true as well – inadequacies in knowing the source language will limit an interpreter's ability to produce a coherent target text:

> Much information is likely to be lost during this circuitous route through the processing system, and an interpreter intent on making sense of the original message may resort to filling in the gaps by guessing what is being missed. If the interpreter knows the deaf person and the topic well enough, his guesswork might be quite inspired and reasonably accurate, but the chances are slim.
>
> More often, the interpreter will give up trying to determine the meaning and produce instead a word for sign rendering of the incomplete message, so leaving the target audience to sort out the meaning for themselves. the result is an incomplete spoken gloss of the source message. (Llewellen-Jones, 1981; p 57).

Cokely (1992) demonstrated that processing time impacts upon the accuracy of interpretation in such a way that longer periods of processing time yield more accurate interpretations. Cokely attributes this improvement to the interpreter having a better comprehension of the message.

Simultaneous interpreting and consecutive interpreting are most obviously different in the amounts of time and overlap that occur within them. Simultaneous interpreting requires that both the processes of understanding the source text and producing the target text happen more or less at the same time. Consecutive interpreting separates these two processes and allows greater time for either one to occur.

APPENDIX F6 – FOUR ADDITIONAL MODELS

6.1 The Need for Another Model of Interpreting

As we have just seen in the previous section, several models of the interpreting process have popped up since the 1970's. Most of these models have approached interpreting from a psycholinguistic view and attempt to get at the underlying processes which happen in the brain during the interpreting process; but models should also provide some amount of guidance for training and improvement of interpreters. The next section presents several models of various transcommunication processes in an effort to further our understanding and organize our efforts in teaching the interpreting process.

These models are not offered as a replacement for the models already presented in this section, but rather as further extensions of our understanding of a very complex process. In other words, consider the models you are about to see as containing every element presented in the models that have already been reviewed. The point of these additional models is to focus on even more elements that play a role in the interpreting process.

The focus of these models is language competence, following Llewellan-Jones' observations that many problems with ineffective interpreting could be tied to insufficient fluency in one or both languages being interpreted. Because language has value primarily in social contexts, these models require acknowledgement of real people within real settings attempting to communicate with each other. With this basis, these models can be categorized as *sociolinguistic* models of transcommunication.

Four related models are presented here. They are not based on the linguistic tasks (monolingual, bilingual, or even extralingual) but rather on the processing and participants in each kind of transcommunication. Specifically these models attempt to represent key components of 1) Translation, 2) Consecutive Interpreting, 3) Simultaneous Interpreting, and 4) Relayed Interpreting. All four models share a majority of their components. These components have been previously identified in greater detail, but are briefly reviewed here.

6.2 Review of Communication and Language

Communication begins with the intentions to communicate. This requires intelligence and therefore a brain, or mind, capable of thought and knowledge. In order to communicate that mind must have knowledge of how to communicate, what can be communicated, others who might be able to understand the communication, and how the physical environment will permit the communication to take place. The mind must have some idea or notion to be communicated, whether conscious or unconscious.

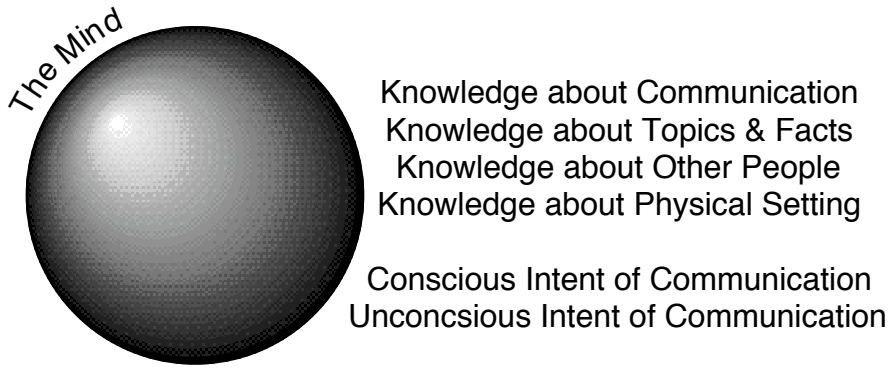

Figure F6.1 – The Mind

Next the mind must have avenues of expressing and perceiving the communication. Communication expression requires muscle movements. Communication perception requires actively functioning senses.

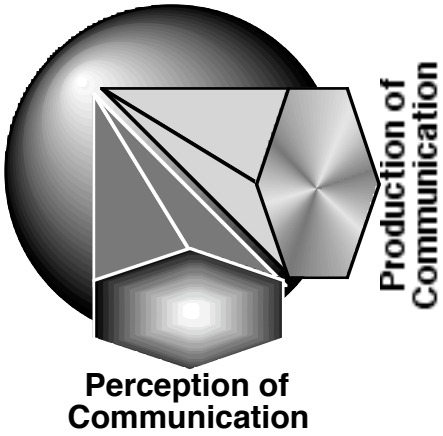

Figure F6.2 – The Communicating Mind

Finally, there must be another mind to perceive the communication productions and perhaps produce a communication response. Both communicators should be able to perceive (monitor) their own communication production as well as the physical environment surrounding the communication.

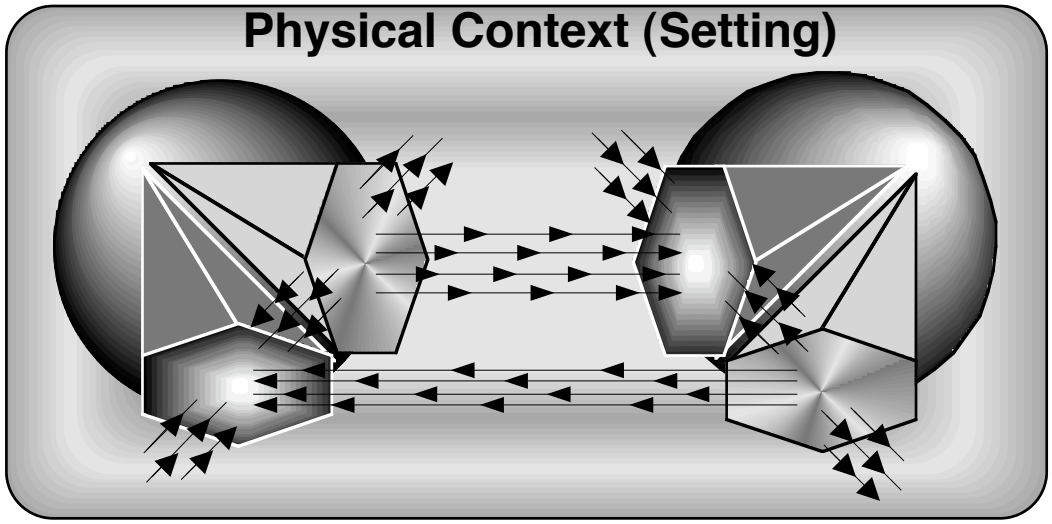

Figure F6.3 –Communicating Minds Within a Shared Physical Setting

6.3 Review of the Linguistic Pyramid

Language is the use of symbols to convey information between members of a community in which the system is rule-governed, has infinite production possibilities, is intergenerational, and changes over time. Language has a series of levels which overlap and build one upon another. At the bottom-most, basic level is *phonetics*, which identify the basic building blocks of language. The rules that guide how the building blocks are put together is the realm of *phonology*. The study of the smallest units of meaning and how they combine to make words is *morphology.* The rules of word order are called *syntax*. These basic levels of language are essential building blocks but they are insufficient when talking about language fluency and the interpreting process.

Semantics is the contextual meaning of words and sentences. We need *discourse* and *pragmatics* to know how our consumers are using the words they use; and we need to know the appropriate ways to say those kinds of things in the target language. Knowing these things about language also helps us to make predictions about what

someone is leading to, what the real point is, and why they want to tell us about it. This is where real interpreting takes place.

There is one more level toward perfection: *stylistics*. When we understand the message well enough not only to adequately predict where it is going; but we also understand the person creating the message well enough to know her purpose, her tendencies, her idiosyncrasies of language use; then we have entered a stylistic understanding of the source text. If we are further able to reproduce equivalents of these individual linguistic tendencies in the target language, then we are being about as accurate and perfect as we can ever be when we interpret.

Reaching across all of these levels of linguistic ability is the concept of *register variation* which accounts for how we modify our language use based on the participants, settings, topics and methods of communication.

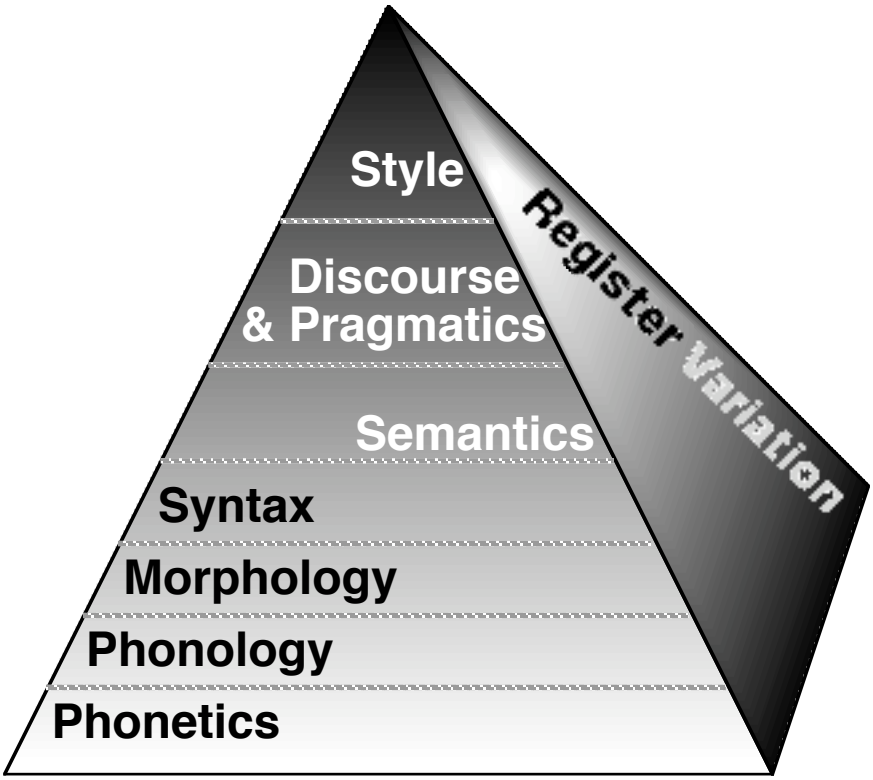

Figure F6.4 - The Linguistic Pyramid

6.4 Review of Language as a Subset of Communication

With all of the layers of the Linguistic Pyramid in place we should also recognize that language, as a specific subset of communication, includes both production and perception. Phonetics (the most basic layer of the Linguistic Pyramid) is the production of all language elements. Every other layer of the Linguistic Pyramid is built on that base for both production of language and the perception of language. The production of a message depends upon muscles moving anatomy. If these movements (or they're resulting evidence, such as writing) are then perceived, the perceiving mind begins with only the result of muscle movement. The mind can then reconstruct the message by applying successive layers of the Linguistic Pyramid to the incoming pieces.

Additional elements of communication will generally accompany the use of language, such as gestures, intonations patterns, facial expressions, etc. The graphic below places the linguistic pyramid within the previous representation of communication.

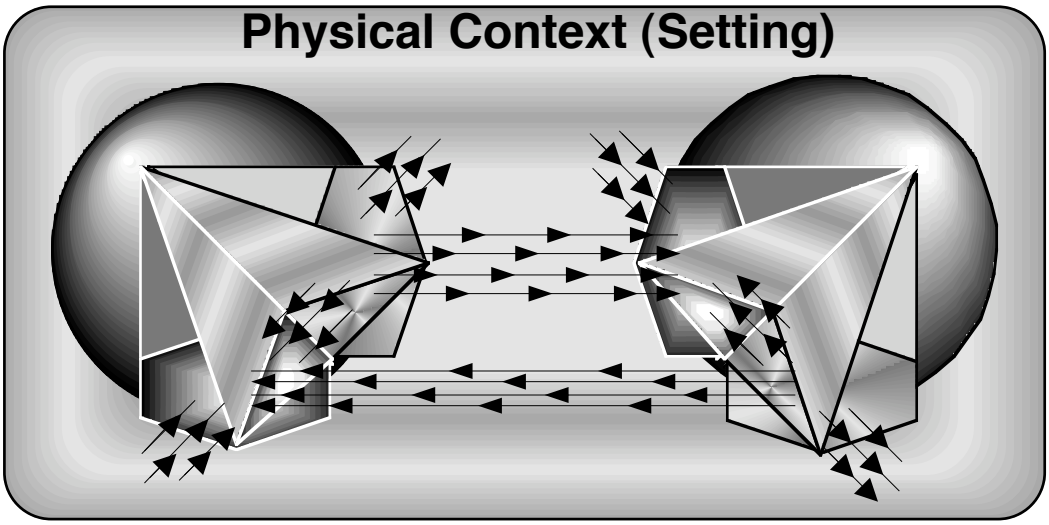

Figure F6.5 - Linguistic Communication Within a Physical Setting

The physical setting influences the clarity of the communication. Both participants generate movement which may be part of communication or may add to the visual or auditory noise in the environment. Each participant also has some ability to monitor their own production of communication, language, and noise. The process of self-monitoring can reinforce the communication or interfere with a person's own communication.

The visual elements of a source text play a significant role in the production of the target texts and in the feedback given to the source presenter by the audience. Regulations of the International Association of Conference Interpreters require unobstructed view of the speaker and audience (Buhler, 1987). Jumplet (1987) explains the need as follows:

> Interpreting includes the perception of events that are accessible only visually, such as the interplay of gestures between speaker and listeners, certain events taking place in the hall that are reflected in the speaker's response, request for the floor through the raising of hands, and visual aids (overhead projectors, graphs) that "speak for themselves" but without which the speaker cannot be understood even in his original language. (Jumplet, 1987: 84).

Viaggio (1997) indicates that producing gestures as part of the target text can be important, even if the audience does not see your efforts:

> Intonation and gestures are bound to be coherent (in spontaneous speech, words can easily be wrong, but, in normal circumstances, there is no such thing as the wrong intonation or the wrong gesture)...they follow the stream of thought and thus create their own inertia: The interpreter who catches himself in the midst of the wrong gesture or intonation, knows for sure that he is not saying what he should. (Viaggio, 1997: 290).

Perception of communication does not ensure comprehension of that communication. It is important to note that whatever comprehension does take place, it is unique to each mind engaged in the communication. One mind might focus on the words used, another mind may give more emphasis to the manner in which the message was performed. This is how a variety of witnesses can see the same event and yet report different information about what they saw. It is essential to understanding the interpreting process that the interpreter has a mind of their own, unique and different from both the source text presenter's mind and also different from the target text perceiver's mind. The four previously mentioned variables of knowledge (of background information, of how to communicate, of other people involved in the communication, and of how that communication has evolved) can bring greater similarity or greater distance in how each person's mind is engaged in the communication process.

Interpretation requires at least three participants. It facilitates their mutual communication if they share the same physical environment, have enough background knowledge to understand each others' likely topics of discussion, have at least some experience communicating with members of each others' language communities, and are able to keep track of the conversation as it takes place. As fewer of these variables are present then the task of interpreting their communication will be progressively harder.

The level of concentration, or attention to the text generated by another mind can be categorized by the levels of the linguistic pyramid. If the message is comprehended only at the phonological level, then it is being processed sub-lexically. Morphological comprehension equals lexical processing, and so on through the levels of the linguistic pyramid, with the greatest level of comprehension being at the stylistic level. These are imperfect descriptions of reality, but they are offered here as a means of attempting to organize and describe essential elements of the interpreting process.

The level of comprehension and its associated processing level is relevant to the interpreting process because it provides insight to how a person's focus on a source text will directly impact their production of a target text. A message processed at lower levels cannot be intentionally accurate[57] at any higher level in the target language. The next figure reviews these relationships.

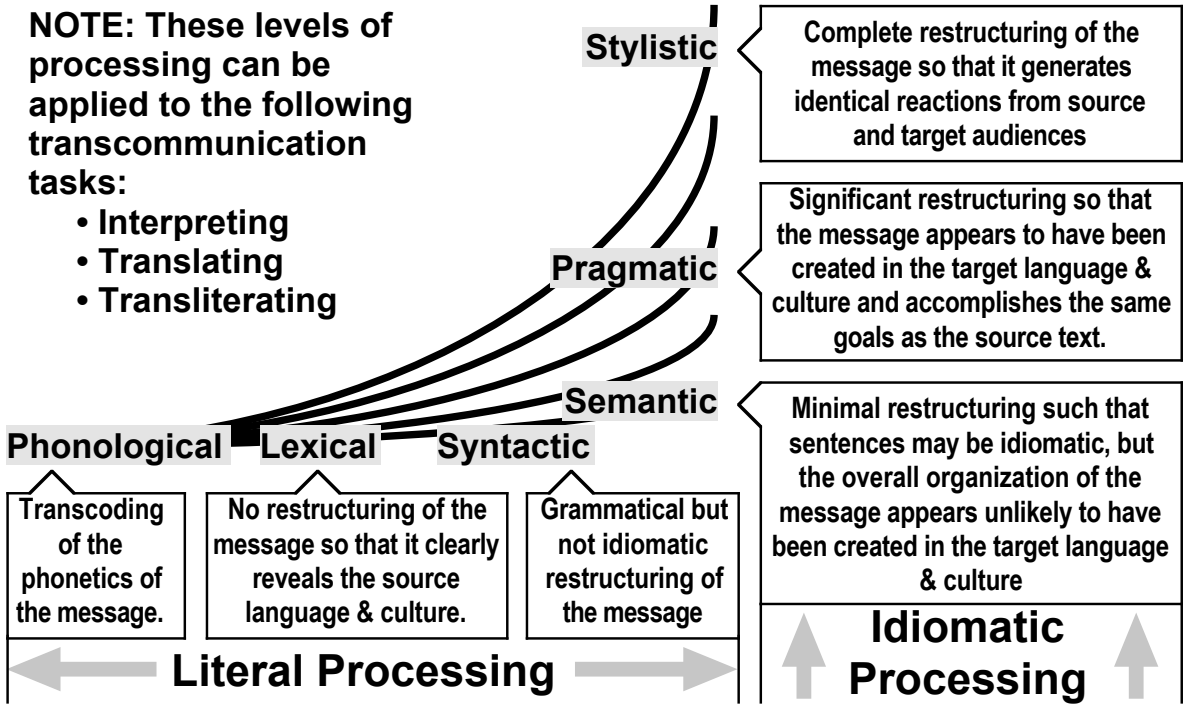

Figure F6.6 - Processing Levels Between Source and Target Texts

6.5 From the Mind to a Text

In addition to the seven levels of the Linguistic Pyramid are a set of factors called the *Sociolinguistic Frame*, which is primarily composed of the *Culture, Setting, Participants,* and *Background* information. All communication both reflects and influences the Sociolinguistic Frame. The sociolinguistic frame influences the linguistic choices a person makes. It is the stimulus that the mind responds to by creating register variation.

[57] It is certainly possible that a person can be accidentally accurate, but this does not fall in the realm of being a professional.

As the mind works to create a text it may rehearse sections of it or be relatively spontaneous. The mind then begins to direct muscles to move to generate communication. Some of this movement may be linguistic, but all of it is semiotic. Semiotics is the study of signaling systems, or symbols. A smile, a wave of the hand, rapid breathing, clenched teeth, or a person's posture all have the potential of communicating some information even though they are not linguistic. *Productive Semiotics* is the movement of muscles that in any way relate to communication, conscious or unconscious.

The mind is also aware of the movement that it makes. This self-awareness is called *monitor* and can vary from a heightened sense of self-awareness to very low levels. Monitor allows a person to catch their own misproductions and correct them or to adjust volume for the noise level in a room. High self-awareness can also cause interference in communication if the mind is focused too much on its own production and not on the communication and feedback coming from others.

There may be *errors* in the text because the body may have physical limitations responding to the mind's directions, or the body may respond correctly to incorrect instructions. All of the movement made – whether accurate or inaccurate, intentional or unintentional, linguistic or extra-linguistic – becomes part of the semiotic message generated by the body in response to the stimulus of the mind. The semiotic message will occur within a physical setting, social context, and history of communication topics prior to it. These factors are part of a person's *Semiotic Productions*.

If language is part of this message then it is interwoven with all of the other elements in the semiotic productions of the text. The resulting *Linguistic Text* will have at least eight distinct qualities to it which can be documented or recorded to various extents: 1) its Channel (spoken language, written language, signed language) 2) its Clarity of articulation (phonemics and phonology) 3) its pace or rate of information, 4) its lexical content or vocabulary, 5) its grammatical accuracy, 6) its cohesion across the duration of the text, 7) the confidence of it creator and 8) various cultural factors regarding values and beliefs. The figure below attempts to represent all of these elements:

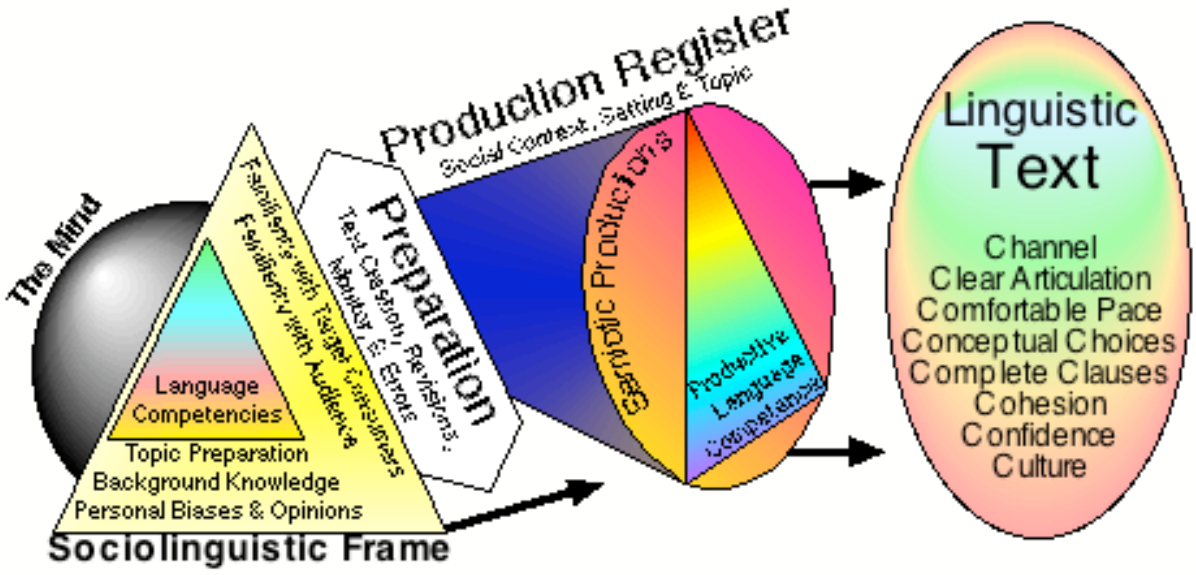

Figure F6.7 – Moving Communication from the Mind to a Linguistic Text

The concept of a Linguistic Text is actually a step removed from the act of communication. It is not possible to document or permanently record all of the factors surrounding communication. A video recording may capture more elements of the communication than a written transcript can, but the participants, setting, and especially the

time of the communication will no longer be the same. Direct interpersonal communication does not require the concept of a text, but linguists have adopted the concept of text as a helpful tool for linguistic analysis of monologues and dialogues. Likewise interpreters and interpreter educators will talk about Source Texts and Target Texts because a documented text is more concrete and definable than the immediate act of interpersonal communication.

6.6 From a Text to the Mind

From the semiotic productions of the first person's mind we can document a linguistic text. Whether the second person engaged in communication is reading a text or directly perceiving the first person's communication, that person must begin by concentrating, or attending to that communication. The physical environment (such as the amount of lighting or the amount of auditory noise) can enhance or interfere with concentration and the perception of the message. The physical and mental ability to perceive all of the semiotic information *(Semitoc Perception)* is individual to the mind doing the perceiving and the physical abilities of the body housing that mind. In other words, hearing loss, vision loss, and other conditions both mental and physical (including stress and emotional state) can enhance or interfere with different kinds of perception.

If there is direct interaction between the communication participants then clarification requests can also be generated back to the first communication partner, which may generate additional feedback. Knowledge of the social context, awareness of the setting and the topic all can enhance the perception of the message. Potential errors include misrepresentation of those ideas, miscomprehensions, and failure to remember some elements of the communication.[58] The understanding of the message will further depend on the language competencies of the receiving mind (housed within the sociolinguistic frame of the person) along with familiarity with the other person, familiarity with the topics being discussed, general background knowledge, and personal biases. The figure below attempts to represent all of these elements:

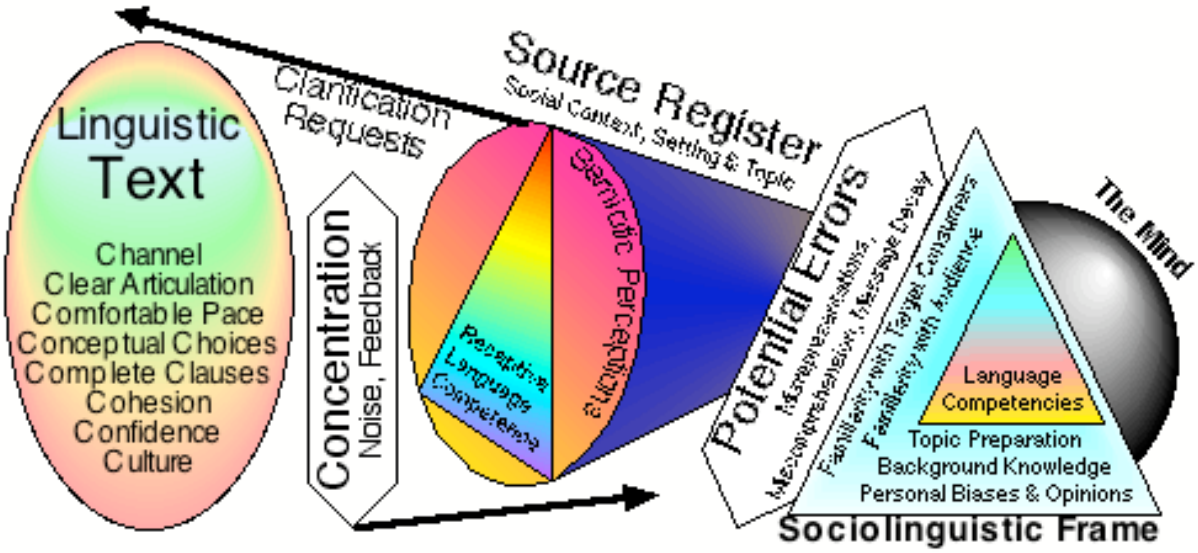

Figure F6.8 – Moving Communication from a Linguistic Text to the Mind

For the remainder of this chapter these complex concepts will be represented in a much more compact graphic in order to present other key concepts without using very small print. The ability for a single mind to both produce and perceive communication is also included in these compact graphics. Lines of communication connect minds

[58] An example of misrepresentation would be correctly understanding a word (e.g. "boat"), but creating incorrect images in your mind ("speedboat" as opposed to "ocean cruiser"). Miscomprehension, or misunderstanding, is a replacement of correct concepts with incorrect concepts, such as "moat" for "boat".

to each other and to the physical environment. Bands (multiple lines) of communication will represent linguistic communication between texts and/or human minds.

6.7 Proposed Models of Translation

The first models put forth are for translation. Translation is the regeneration of a fixed text into a language other than that of its origin. Fixed texts can be written or other recordings of a performance, such as videotape. Translation has several significant advantages over interpreting because the text can be previewed multiple times, the pressure of time is reduced, multiple advisors or team members can be brought into the task, and draft translations can be reviewed and revised before target consumers ever see them. Some major disadvantages with translation involve the fact that the source text is not interactive with its audience. Translations are typically monologic in nature, meaning that the work is from one language to another, not vice versa.[59]

The creation of a linguistic text requires at least one mind and some physical effort. Translators (or members of a translation team) begin the translation process as direct readers (perceivers) of the text in the source language. They must then work to regenerate the message in the target language. It is important to note that this text regeneration is a creative process, controlled by the translator and not by the original author. The figure below provides a sample sequence of the author creating the source text which then becomes the stimulus for a single translator to create a target text::

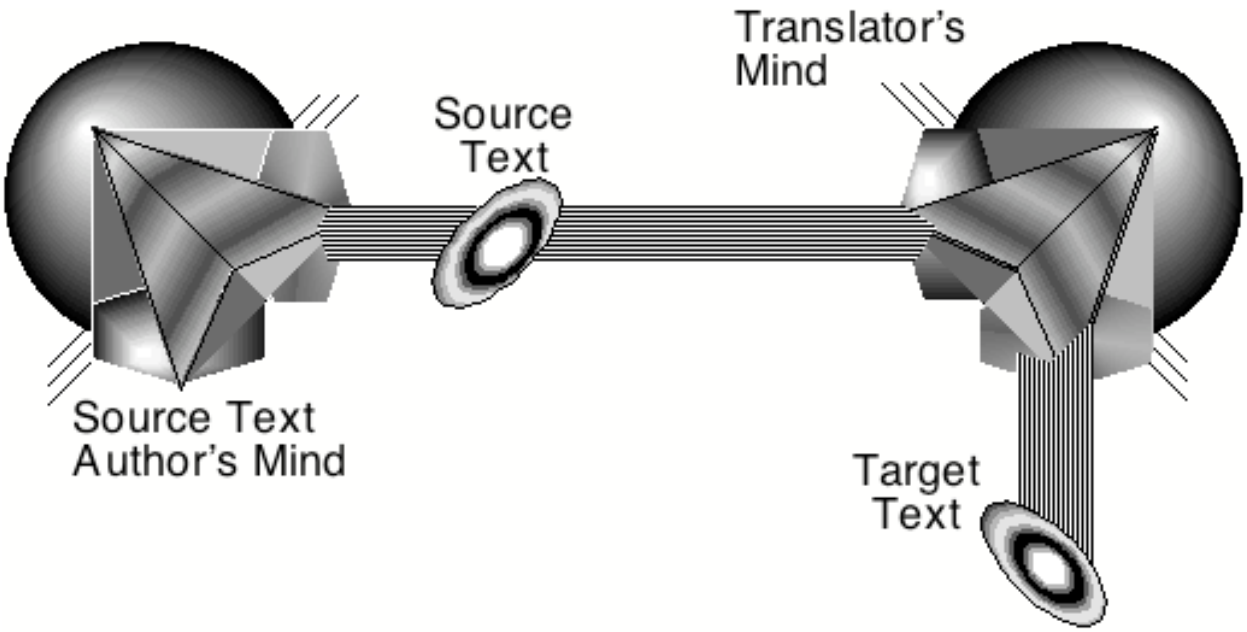

Figure F6.9 – A Sample Model of Translation

Although the figure above may seem fairly simplistic, please remember the complexity previously discussed regarding the production and perception of communication between minds. All of those elements are implied, but not directly identified in the figure. It is also worth noting that a target consumer's mind is not part of the above sample model. This is because there is technically no requirement for any target language user to read the translated text; but it is a simple matter to include the consumer of a translation, as the next figure shows:

[59] Translations may make use of "back translations" to verify the accuracy of a translation, but back translations are generally only part of the process and are not generated as the final target text for consumers.

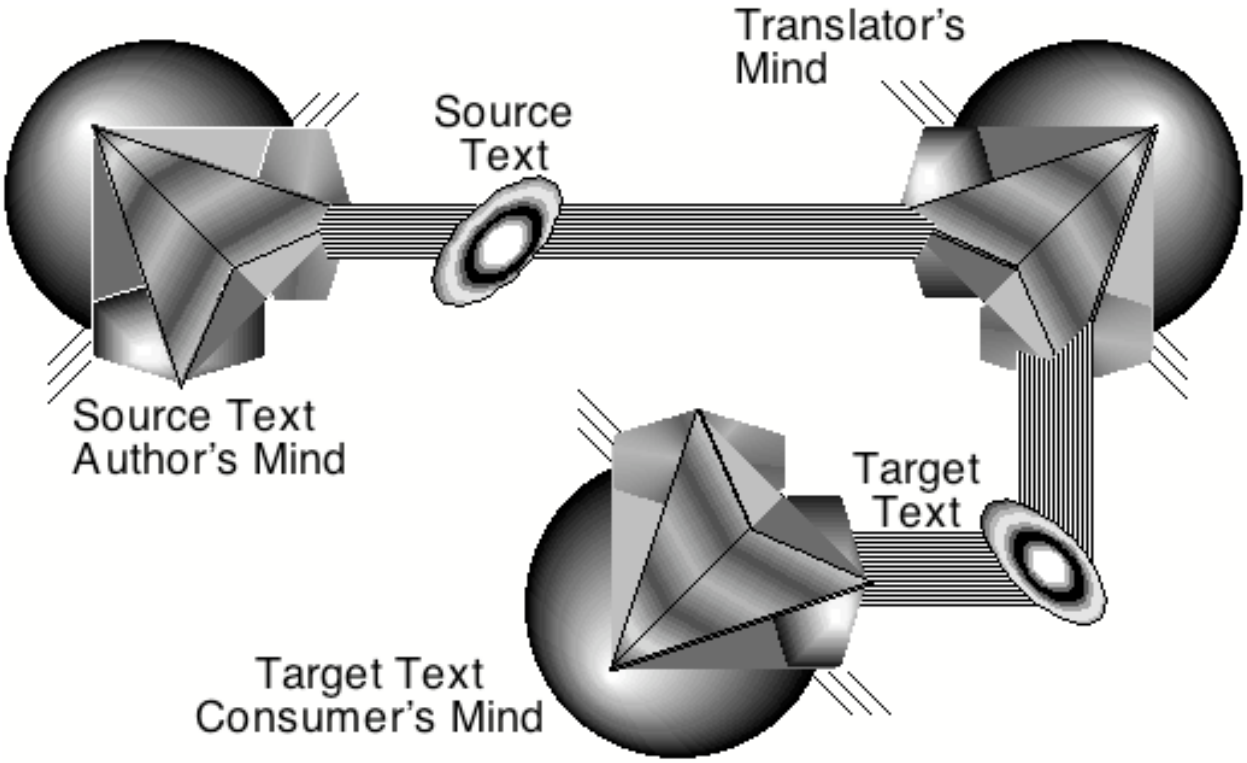

Figure F6.10 – Translation Which Includes the Target Language Consumer

One detail worth noting in these two representations of translation is that there is no direct interactive communication between any of the parties. Each participant in the process is either producing and/or perceiving a linguistic text without feedback or response from any other party. Their impact upon the physical environment and their perceptions of that environment are the only other lines of communication in these models.

6.8 Proposed Model of Consecutive Interpreting

Consecutive interpreting takes place when the source and target messages are performed in alternating, not overlapping, segments. The amount of interactive communication changes greatly once the source and target consumers share the same physical space. Not only is the interpreter able to give and receive feedback to each participant, but the source and target consumers also have access to each other directly, even if not linguistically. One significant advantage to consecutive interpreting is that each consumer's focus shares the same object at any given time. When the source consumer initiates communication both the interpreter and target consumer can attend to that message, even thought the target consumer may not understand much (or any) of the source message. When the interpreter regenerates that message, both the source consumer and target consumer can attend to the interpreter's message. In other words, all of the participants can focus on the communication of each participant separately rather than simultaneously dividing their attention between participants. The following sample model of consecutive interpreting assumes dialogic discourse, but the elements could be rearranged to represent a consecutive interpretation of monologic discourse.

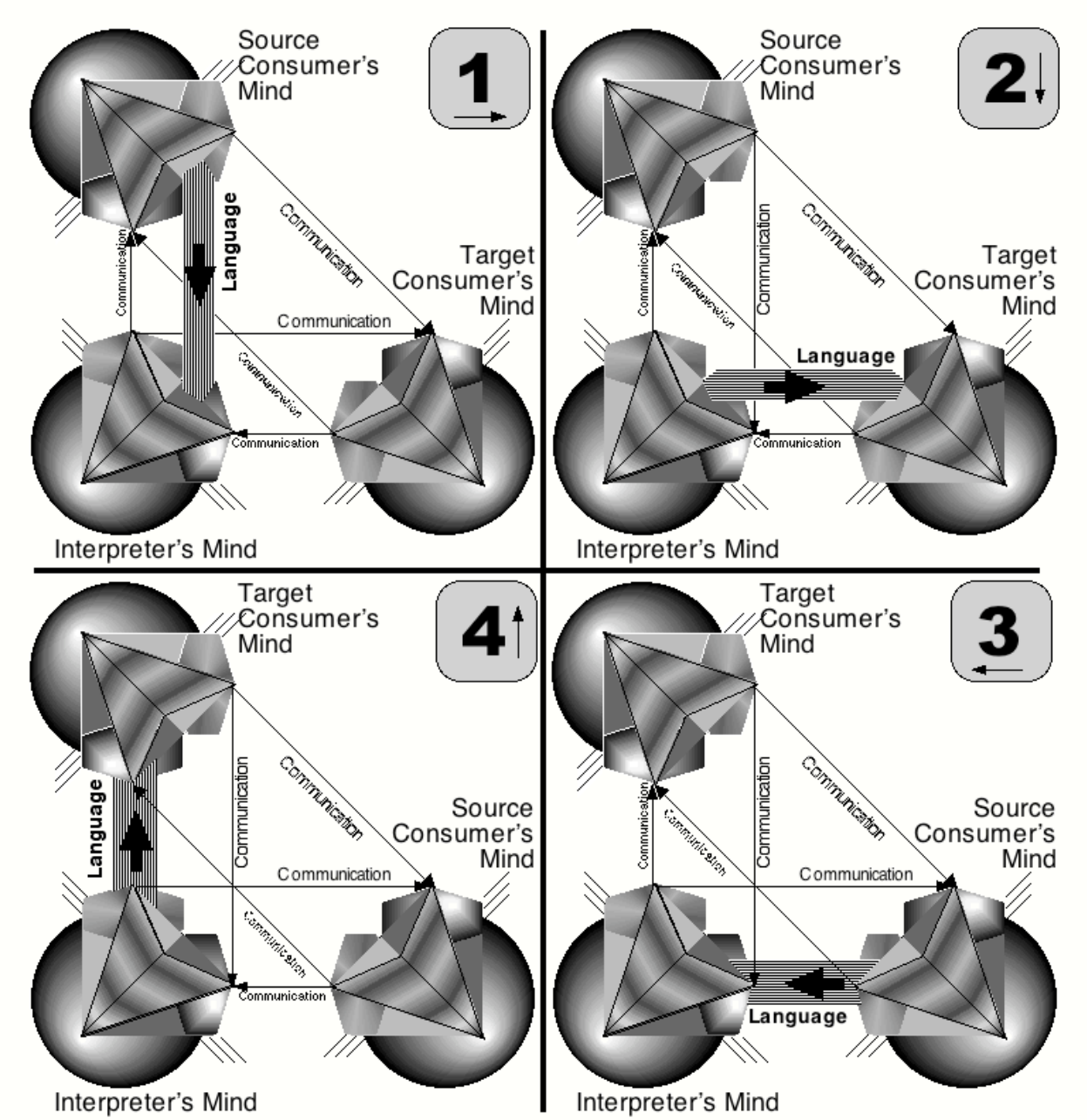

Figure F6.11 – A Model of Consecutive Interpretation of Dialogic Discourse

6.9 Proposed Models of Simultaneous Interpreting

The process becomes more complex when interpreters perceive a source message at the same time that they are generating a target message. The interpreter's mind must concentrate on the source message, overcome interference from auditory and visual noise in the environment, and come to an understanding of the various meanings that have been perceived, both linguistic and extra-linguistic. During the construction of the target message the interpreter must continue to monitor the source text while simultaneously monitoring the production of the target text, provide feedback to the consumers. Ultimately the interpreter will also generate some amount

of auditory and/or visual noise, which has the potential of creating additional interference in monitoring the source text.

The three components of Monitor, Feedback, and Noise function as a first filter in both the comprehension of the Source Text and in the production of the Target Text. Ideally, the source sociolinguistic frame should be the same as the target sociolinguistic frame, but when communicating across cultures, there will be changes between the source and target sociolinguistic frames. In addition to all of the stress of simultaneous processing, it is important to remember that we can never intentionally provide an accurate interpretation that is any better than our understanding of the source text. Figure F6.12, below, is a graphic representation of the key elements in Simultaneous Interpreting of monologic discourse.

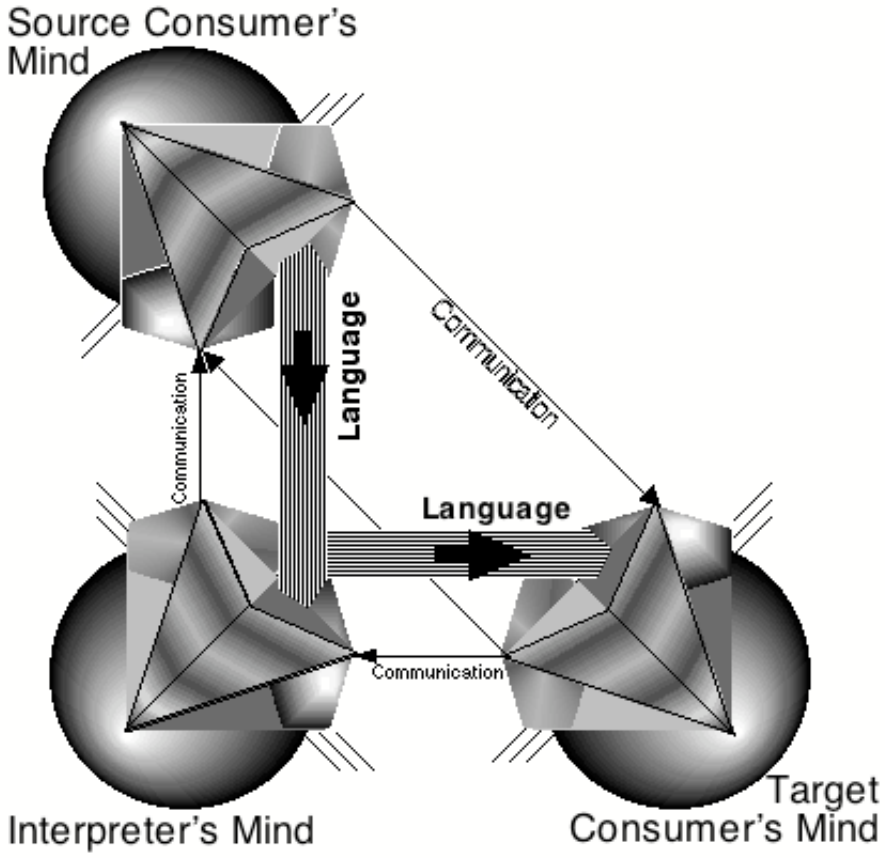

Figure F6.12 – An Overview Model of Monologic Simultaneous Interpreting

Remember that these models are not attempting to define what happens in the brain when we do all of this; the models are guides to let us examine the semiotic and linguistic information which is available, and better understand different interpreting situations. The key difference between consecutive and simultaneous interpreting is the extreme complexity of the process. Different parts of the process between different consumers must take place at the same time. The next figure is provided to remind the reader of the many of the details required in the simultaneous interpreting of monologic discourse.

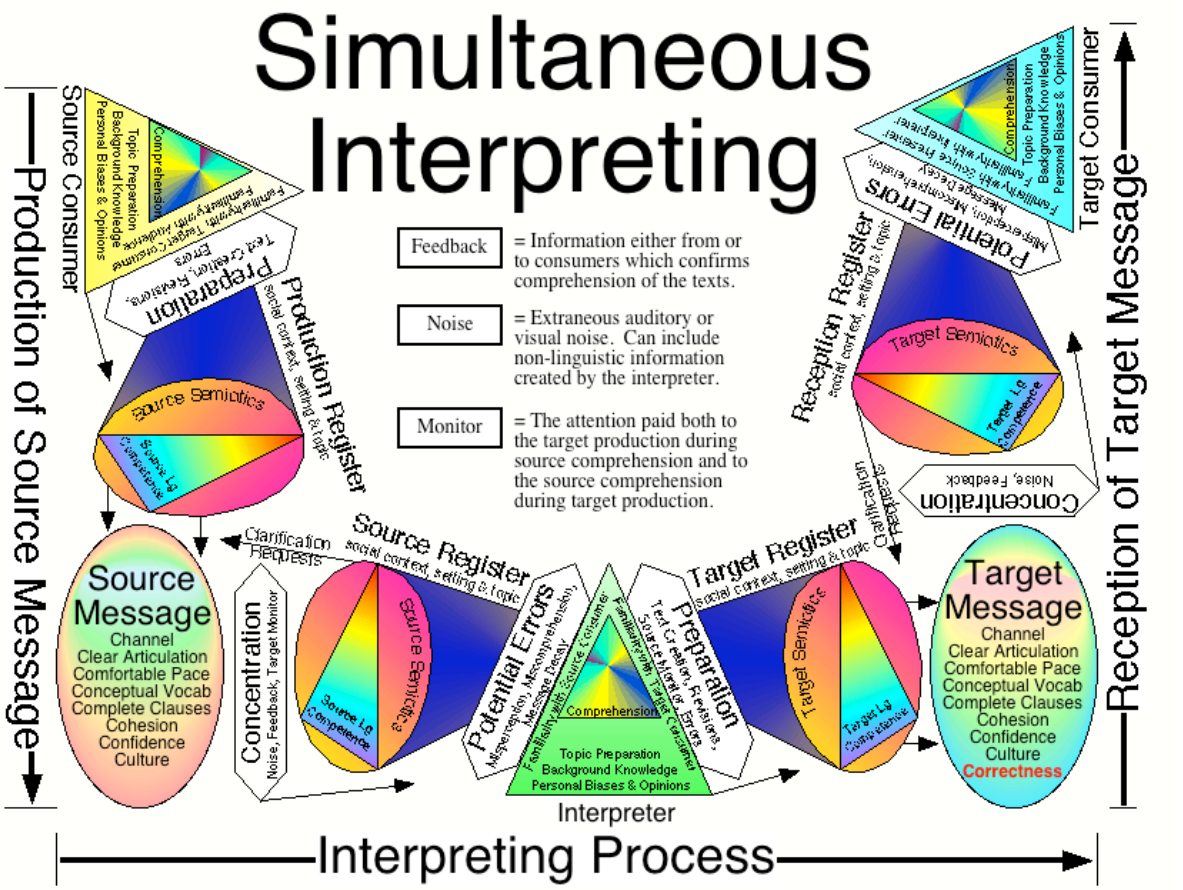

Figure F6.13 - A Detailed Model of Monologic Simultaneous Interpreting

6.10 Comprehension and Production

Notice that there is one additional feature identified in the oval representing the Target Message: Correctness (or accuracy). Although the target message is created by the interpreter, the point of creating that message is to faithfully represent the concepts of the source message and intentions of the source consumer. The first requirement for accuracy is that interpreters must understand a source message if they are to reproduce that message accurately in the target language. If interpreters fail to achieve the highest level of comprehension, then their interpretations can only be accurate to the linguistic level that was comprehended. Different participants, settings, and topics will yield different levels of comprehension. A person may be able to comprehend and produce both languages fully to the stylistic levels in casual conversations, yet be limited to syntactic levels or lower during a business briefing for IBM, a lecture on fusion for graduate physics students, or a briefing on economic trade sanctions at the State Department. The basic premise of these models is that the target text can be accurate only to the level that the source text was comprehended.

6.11 Proposed Model of Relayed Interpreting

The process continues to gain complexity when two interpreters work together to bring a source message into a single target message. One of the key motivations for choosing to do this is to provide a matched set of sociolinguistic frames: The Hearing Interpreter and the Hearing Source Consumer both share significant portions of their sociolinguistic frames. Likewise the Deaf Interpreter and the Deaf Source Consumer will share significant portions of their sociolinguistic frames. Since the sociolinguistic frames are a key filter in how a person understands the communication surrounding them, matching these frames between interpreters and

consumers should provide significant benefit. The model below represents a simultaneous relayed interpretation of monologic discourse.

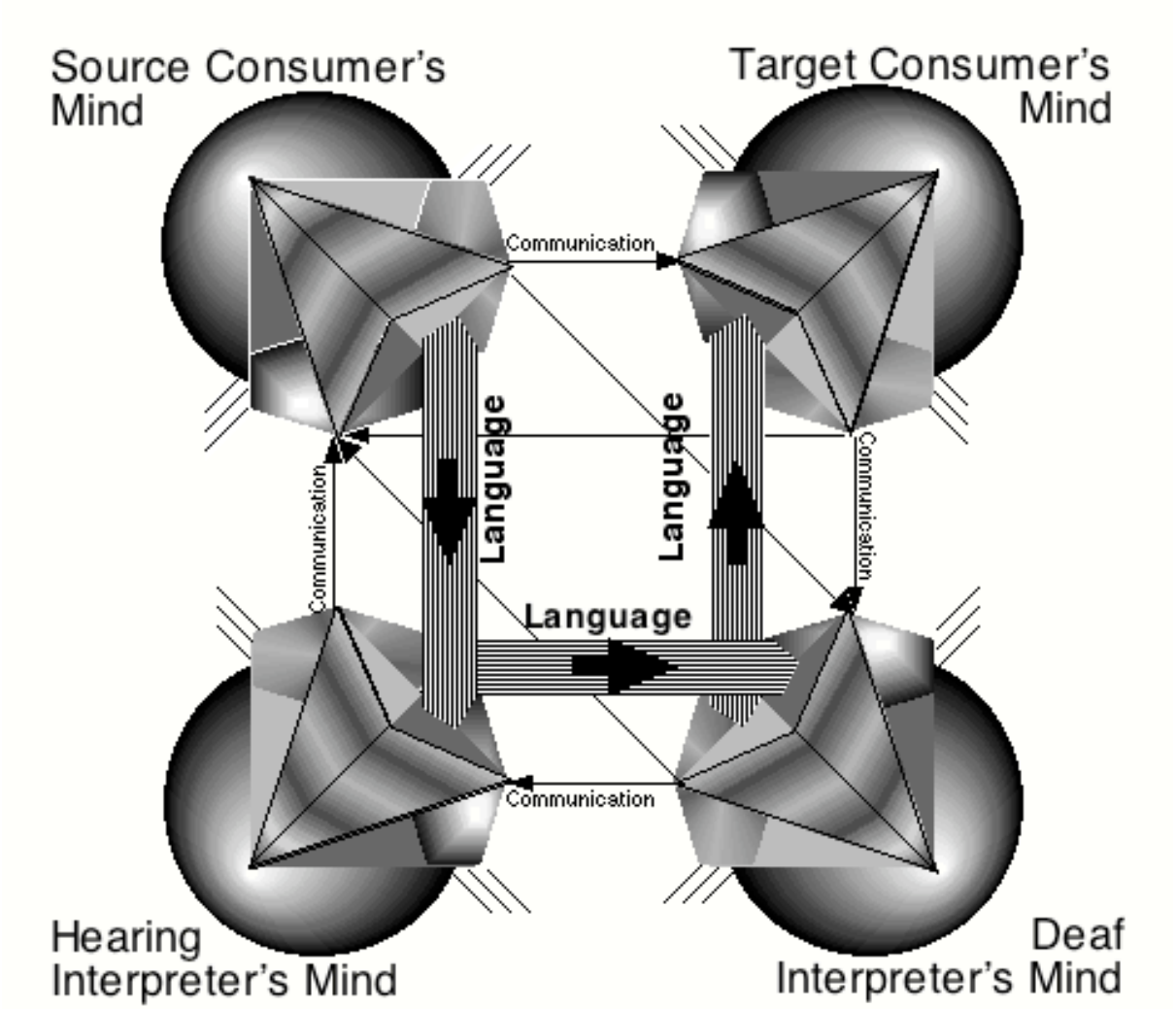

Figure F6.14 – Relayed Simultaneous Interpreting of Monologic Discourse

Notice that the lines of communication remain intact between all of the participants except for two: the Hearing Interpreter and the Target Consumer. The break in this link of communication is deliberate because the alternative would be distraction and excessive noise. The arrangement depicted in Figure F6.14 specifically depends upon different channels of language operating simultaneously. The source presenter in the arrangement depicted above is using spoken language to generate the source message, which the Hearing Interpreter regenerates using a signed language. The channels of spoken and signed languages do not cause significant mutual noise.[60] The Deaf Interpreter maintains the channel of signed language. If the target consumer were able to view both the Hearing Interpreter's message and the Deaf Interpreter's message then the result would be

[60] This is not to say that consumers will not be distracted by visual elements of a spoken message or auditory elements of a signed message. The point is that there is no inherent conflict in the one person's physical production of a spoken message and another person's physical production of a signed message occurring simultaneously.

competing messages in the same channel: signed language. In order to eliminate this form of visual noise, the Hearing Interpreter should be located out of the perceptual range of the target consumer.

6.12 Linguistic Processing Within the Models

As stated previously, the intentional accuracy of interpreters is limited to the linguistic level that they comprehend the source message. Other factors can also contribute to diminished accuracy, but weaknesses in language fluency cannot be otherwise counterbalanced. The six processing levels, identified previously in Chapter two and again at the beginning of this chapter are as follows: 1) Sub-lexical (phonological), 2) Lexical (morphological), 3) Syntactic, 4) Semantic, 5) Pragmatic and 6) Stylistic (whole-text). Here are some hypothetical examples.

Suppose we are interpreting for a dear old friend giving a lecture. We know every thing about his lecture topic, his lecture style, the phrases he tends to use, the kinds of jokes he tells, everything. Assuming that we have the skills necessary to convey this kind of information in the target language (and having such skills is not a trivial point) then we can expect to be able to produce a target-language text which is just as stylistically rich as the original text. This doesn't guarantee that the interpretation will be perfect; it only means that given the interpreter's level of source language comprehension and the interpreter's ability to produce messages in the target language, the interpreter has every possibility of reproducing that message the same way it was intended, but in a different language.

Every possibility exists except for one problem. Assuming that the task is a simultaneous interpretation and that the information in the source message is not old news to the interpreter, then the act of interpreting may be mentally taxing enough to prevent the interpreter from reaching the stylistic level of target text construction. In other words, the process of monitoring the ongoing interpretation as well as monitoring the ongoing source message is enough to keep the interpreter's best level of production at least one level below the highest comprehension level, which in this case is the pragmatic level. In other words, the mental processing prohibits consistent access to an equal level of processing between the source and target texts.

Here is another hypothetical example, continuing with the assumption that the interpreter has complete linguistic ability all the way to the stylistic level in both of the languages in the interpreting situation. A person is giving a lecture on some topic which is somewhat familiar to the interpreter, but the lecture contains mostly new information. At the beginning of this task, the interpreter can make no predictions about the lecturer's style; but the interpreter can make some predictions about what kinds of things are likely to come up in the lecture. We can now set the highest level of comprehension at the pragmatic level. This may increase to the stylistic level over time as the interpreter becomes familiar with the speaker's style, but for now the highest level of comprehension is at the pragmatic level.

Because this interpreting event is a simultaneous task, it will require a certain level of simultaneous attention to both the source and target texts. This level of interference is likely to bring the interpreter's overall interpretation down at least one step into the semantic level. This does not mean that the interpreter will not have short bursts (or even extended periods) of accuracy to the pragmatic level during target text productions. It only means that the best level of accurate interpretation that can be consistently expected is at the semantic level. Once the interpreter can begin to make predictions about the speaker's style, then we can increase our expectations of consistent accuracy in the interpretation to the pragmatic level.

Suppose we have an interpreter who is native in one language but is still facing some fluency problems with a second language. Let's say that this interpreter is able to consistently produce semantically accurate messages in the second language but only occasionally maintains pragmatic accuracy. If this interpreter is working in the "dear old friend" scenario that we described above, then what predictions can we make about the overall accuracy of the resulting interpretation?

We can begin by predicting that the target text can be accurate only to the semantic level simply because the interpreter cannot consistently produce texts which are accurate beyond that level, even in casual conversation. So even though the interpreter comprehends the message to the stylistic level, it is still impossible for that

interpreter to intentionally achieve an interpretation consistently accurate to any more than the semantic level, which in this case is two levels below the level of comprehension.

It gets worse because the interpreter is performing a simultaneous task which involves new information and the interpreter must therefore devote attention to both the target and source texts, we must reduce the expected accuracy of the resulting interpretation to being no better than at the syntactic level. This means that the interpreter is no longer interpreting. All the work that the interpreter is going through will only be useful if the consumers of the interpretation have enough skill in the source language to reconstruct the original source message. And that means the consumers are at best gaining access to the source text while doing a lot of the actual interpreting themselves.

One last example using the same interpreter we just talked about who has a full ability to be stylistically accurate in the interpreter's native language but is only consistently accurate at the semantic level of the second language. Let's put this interpreter into a situation where the source language is the interpreter's second language and the target language is the interpreter's native language. Since the consistent level of comprehension accuracy is only at the semantic level, it will be impossible for the interpreter to produce a target text accurate to the pragmatic level. The semantic level would be the best we could expect; but the task of monitoring both the source and target texts reduce the expectation back down to the syntactic level. This interpreter, however, appears to be producing fluid interpretation at the pragmatic level. How can this be? The answer is that the interpreter is no longer accurate. This does not mean that the interpreter is making it all up; only that we can not depend 100% on the accuracy of the information conveyed in the target language. Bits and pieces of accuracy may pop up now and again, but when the target-text production level exceeds the source-text comprehension level then the resulting interpretation can not be trusted to be accurate. Even if the resulting interpretation was consistent and fluid (ie. Cohesive) at the semantic level, we would be forced to conclude that it will not be consistently accurate because the act of monitoring both the source and target texts should drag the interpretation accuracy down to no better than the syntactic level.

Suppose the interpreter has different levels of comprehension and production of the same language – let's say of the interpreter's second language – then what? The answer depends on which task the language skills are applied to. If the interpreter has better comprehension than production in a second language, then the interpreter will have better results interpreting from that language to the native language. If for some reason the interpreter has better second-language production than comprehension, then the interpreter will find better results moving from the native language to the second language.

Note: the above examples focus on simultaneous interpretations. If the interpreting task is not simultaneous, but is instead a consecutive task, then the burden of the monitor is reduced and it should be possible to accurately render the target text at the same level that it was understood. Likewise translation work can exceed the separate fluency limitations of the various team members involved.

6.13 Applications of the Models

How are the concepts presented here useful? Let's start with evaluating an interpreted performance, whether for personal improvement, educational assessment, or certification purposes. Because this model focuses on the parts of interpreting which are to some extent measurable, it allows us to combine the explanations made possible by the model with actual performance measurements and provide recommendations for improvement or decisions of acceptable performance.

First, it is worth knowing to what level an interpreter can both comprehend and produce any given language. To that end we can develop tests which measure the semantics, pragmatics, and to the extent possible, the stylistics of both the production and comprehension of each language an interpreter intends to work with. We already have a great tool which helps us to get at some of these issues in comprehension: the cloze test. In the cloze test we (generally) take an actual text, taken from some real-life situation, and methodically remove elements from it. We then see if the person being tested can replace those gaps with the same bits we took away, or at least with reasonable substitutes.

On the other side of the interpreting process we can measure directly the accuracy and cohesion of the target text production. Keeping the goal of a 100% accurate target text in mind, we can see that to be stylistically accurate, the interpretation must be accurate to at least the pragmatic level, which means it must also be semantically accurate and so on. An interpreter can be less than 100% stylistically accurate (and this probably happens most of the time) and still demonstrate wonderfully long stretches of accuracy at pragmatic, semantic, and syntactic levels. But any errors in a lower level will negatively influence our accuracy at all higher levels.

When we attempt to measure our production accuracy it might well be worth investigating areas such as syntax and morphology in addition to the semantic, pragmatic and stylistic levels. Since the task of simultaneous interpretation nearly precludes the ability to produce stylistically accurate target texts, it might be more fruitful to delete the stylistic level from target-text analysis and use it only when analyzing consecutive interpretations. We can analyze target texts by examining the syntax, by comparing the propositional[61] content with the propositions within the source text, and by examining the register to ensure it matches the register of the source text.

When we are discussing interpreting, we must at least be able to deal with language at the semantic level. Anything less than that and we are no longer talking about interpreting, merely language ability. Interpreting begins where the meaning conveyed by a language can be understood and used to reconstruct that meaning within the target language. To this extent, the model helps us know when a training program can start to move beyond teaching language and can begin to teach interpreting. Specifically, we can see that if we only want minimal interpreting then we should only teach and/or verify language skills up to the semantic level. But if we want interpreters to have the opportunity to reach 100% accuracy then we must teach and/or verify skills all the way through the stylistic level. We can also see that it is inappropriate to begin instruction in interpreting until the student exhibits at least semantic abilities in both languages. It is probably best to teach interpreting to people who command both languages fully to the stylistic level, but it is perhaps more likely that we will have students who exhibit a mixture of skills between the semantic and stylistic levels. The model suggests that there is value in teaching the art of interpreting to such students, but that language fluency still needs to be developed.

Not every interpreting assignment is a communication event which requires interpreting at the stylistic level. The most obvious places which would require stylistic interpretations are dramatic performances and political campaigns. But an interpretation at the pragmatic level may be fine for a performance review with the boss. A semantic interpretation may even suffice within certain highly predictable situations.

6.13.1 Boundaries

There are many boundaries that may exist within a communication event. With the different levels of interpretation described above, an interpreter will rarely stick to just one level all the way through, never wavering, as though the interpreter were a well tuned automobile running down an empty highway and set on cruise control. Very few communication events are this easy all the time. It is far more likely that the interpreter will be shifting between levels depending upon a variety of factors. The boundaries within and between levels help us to predict where some shifting is likely to occur.

The most obvious boundary is the speaker. When the speaker changes the stylistics of the source message also change. When Mr. Smith finishes his announcements and Ms. Jones begins her keynote address, we have a change in the speaker, and therefore a change in the stylistics of the source message. This is one boundary and the notion of the boundary can help us to analyze the effectiveness of an interpretation at various points within the interpreting process. Suppose that Smith mumbles and produces other noise to the source message such as rustling papers or creating a number of false starts or partial repairs. Jones on the other hand may be one of the best speakers ever to hit the lecture circuit. The task of interpreting the source texts produced by these two people is going to be very different and the results are likely to be better for Jones' message than for Smith's.

This expectation could be reversed if Smith's message was highly predictable by the interpreter and Jones' message made little sense at all. What makes interpreting such a complicated process to describe is the multitude of simultaneous possibilities within any given message. Smith may be dull, inarticulate and clumsy,

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[61] Propositions are the combinations of concepts with events or states and are further described elsewhere in this work.

but Smith's message may still be understood and reproduced at the stylistic level. Jones may be interesting, articulate, and precise, but Jones' message may challenge those who are totally unfamiliar with the topic of, say, quantum mechanics, and leave the interpreter struggling to construct a target text at even the semantic level.

But suppose that Jones did both the announcements and the lecture on quantum mechanics and that Jones was interesting, articulate and precise throughout the entire communication event. So within the same speaker we could see a clear discourse boundary due to the topic. The target text construction of the first part may be stylistically accurate while the target text construction of the second part may be merely semantically accurate.

Beyond these obvious boundaries, other factors may influence differences in potential interpretations such as changes in the physical environment, changes in register, and changes in discourse strategies. These are all areas within pragmatics. But what of the lower levels? Are there semantic boundaries in communication events? I would offer that boundaries only exist at the pragmatic and stylistic levels. At the semantic level we are focusing primarily on words. If we start setting up boundaries every time the interpreter encounters an ambiguous word, we will have so many subdivisions in the source text that we'll have to hire a zoning clerk to make sense of it all.

The value of the boundary concept is that it allows us to break up the communication event and determine the general level that an interpretation is at within certain boundaries. The notion that an interpretation will be at a stylistic level, for example, is theoretical in nature. In other words, we may see an interpretation at the stylistic level which still is less than perfect. The imperfections that enter into the interpretation might only be occasional glitches or they could be absolute drops in the interpretation level.

Let's say that Jones is on stage giving the keynote address to the International Quantum Mechanics Association and we are providing interpretation services for this communication event. Let's also assume that we have the same level of general knowledge about quantum mechanics as most audience members. Jones is making her third primary point in the keynote address and we misunderstand some small piece of information, the name of a physicist, for example. We produce the information in our target text but we remain unaware that we misunderstood it in the first place. This is a glitch within the interpretation. This disruption to the interpretation is at the semantic level, but it alone does not prevent us from producing an overall stylistic interpretation.

Now let's suppose that while Jones is lecturing someone begins to cough violently for a few moments, interrupting our ability to understand the source message. Here we have a discourse boundary within the communication event. The physical environment has been temporarily altered with a burst of noise and with that noise has come two new boundaries: the onset of that noise and the conclusion of that noise. The noise segment between these two boundaries may still be interpreted at the stylistic level or perhaps it is not interpreted at all. The point is that this piece of the communication event is different from other pieces of the same communication event. Any differences in interpreting level that takes place between these boundaries should be considered separate from interpreting outside of those boundaries. This way of dividing a communication event can help us understand what factors have the strongest influences on any given interpreter's work.

With this model of interpreting to provide guidance, we should be able to better describe where an interpretation succeeds, where it falls short, and provide suggestions for how to make improvements. We can make predictions about a given interpreter's likely success in specific contexts and appropriately match interpreters of different skills to a variety of interpreting situations.

6.13.2 Four Predictions

Here are four proposed predictions about an interpretation based on knowledge about the source text comprehension level and the target text production level:

1) Target text construction at levels beyond source text comprehension will cause fabrications (logical extensions or outright errors).

2) Attempting to produce a target text at the same level as source text comprehension, in a simultaneous interpretation, is likely to co-occur with enough stress to cause production errors in the lower regions of

language production (phonological errors, morphological errors, and syntactic errors). The resulting non-linguistic noise may be sufficient to make the target text incomprehensible to the target language consumers.

3) Attempting to produce a target text at one level below the level of source text comprehension, in a simultaneous interpretation, is likely to reduce the stress enough to allow a consistent interpretation without production errors in the lower regions of language production (phonological errors, morphological errors, and syntactic errors).

4) A consecutive interpretation will not have the same stress factors as simultaneous interpretations and therefore target text construction can better be generated at the same level as source text comprehension (ie. consecutive interpretations will yield better results than simultaneous interpretations).

From the last two of these predictions, let's paint a possible scenario for a consistent simultaneous interpretation at the pragmatic level (this is called "armchair linguistics". Real data would be much more valuable). Let's have Mr. Smith be an articulate, well-organized speaker who will be making a presentation about the impact of the latest Government budget upon the cost of living in our region. The interpreters have pre-conferenced with Smith and have begun to know his conversational style and also understand the introductory information which will be at the opening of the presentation. As the interpretation begins it functions nearly as a consecutive task because all of the information in the opening remarks is already known to the interpreters. Yet the interpreters do need to get used to Smith's lecture style, and therefore they are only comprehending Smith's message to the pragmatic level. Following prediction number four it is possible that as long as the interpreters continue to comprehend Smith's message to the pragmatic level, they have every possibility of accurately constructing target texts that are also at the pragmatic level, since the content of the message is entirely old information. As Smith continues to lecture, the interpreters become familiar with Smith's lecture style. Although the interpreters are now encountering new information in Smith's message, they are now understanding the message at the stylistic level. Following prediction number three, the interpreters have every possibility of comfortably interpreting at one level below their level of comprehension. In this case, they could still produce an interpretation at the pragmatic level.

We must remember that these are predictions about the best possible consistent level of interpretation. There may be bursts of stylistic interpretation. There may be glitches, fatigue, distractions, and any number of other factors which will prevent the interpreter from producing a target text consistently at the predicted level. The point of the predictions is to provide a target level of reasonable expectation when we analyze our own work or the work of other interpreters. It also helps interpreter trainers to narrow their focus of instruction on the elements that can be more immediately "fixed", rather than stressing the interpreting student with feelings of inadequacy. It is where an interpretation deviates from the predicted level that we find areas of interest for further study.

6.13.3 Errors

Production errors are accounted for in this model as primarily due to stress. Stress is expected when production occurs at the same time and at the same level as source text processing. Without the monitor being fully able to analyze whether the interpretation is accurate, the interpreter will feel as though he or she is barely able to keep up. Production errors are likely to go uncorrected, and most likely, unnoticed by the interpreter[62].

Errors of inaccurate additions or substitutions (fabrications) are likely to occur when production levels exceed levels of source processing. A sense of overconfidence may prevail in the interpreter and technical production errors are likely to be few. The interpreter will look believable but the interpretation will not be true to the source message.

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[62] But errors can be more readily caught and corrected if an interpreter is working with a team member who is providing an external monitor of both the source and target texts. A team member providing this extra support provides the advantage not only of capturing un-intended errors, but also can provide repetitions and/or clarifications of portions of the source text, thus allowing the source presenter to continue without interruption while the interpreting team maintains higher levels of accuracy in simultaneous interpreting.

Errors of mismatch between the source message and the target production will always be present unless the consumer producing the source message is processing the language to the same level as the interpreter AND the interpreter is producing the target message at one level below the processed level. In non-simultaneous interpreting (which includes both consecutive interpreting and rehearsed interpreting) then the target production can be relatively error free at the same level as the source processing. Errors of mismatch will be greater as the source processing differs from the source message and also as the source processing differs from the target production.

An interesting problem (especially for mental health interpreting) is when the interpreter processes the source language to deeper levels than the speaker intended or than is fully possible from what was produced. In other words it would be a problem if a consumer's language production was only coherent at the morphological or syntactic level but the interpreter imposes meaning on it to deeper levels and produces a target text beyond the source production levels, which ends up appearing to be coherent. In psychotherapy these alterations in meaning might have serious implications about the person's future, the form of treatment that will be prescribed, perhaps even whether the person should be incarcerated or even put to death. In such serious situations the most obvious solution would be to eliminate the interpreter from the situation by finding a psychotherapist skilled in the source language of the consumer. Since this is not always possible, an alternative might be to video tape the interview and review the tape with the therapist in private in order to reveal those areas where meaning was imposed upon the source message.

6.13.4 Measuring Performance

Choosing a level of analysis should be guided by the purpose of the evaluation. Admission to a general interpreting program or basic certification of an interpreter should require consistent accuracy at the semantic level.[63] For graduation from an interpreting program or for certification within specific realms of interpreting, consistent accuracy at the pragmatic level is a good goal. A stylistic analysis of source and target texts may help someone who is already a very good interpreter become an excellent interpreter, or even determine which of two or three candidates is best for a long-term interpreting assignment for a government diplomat or business executive. This document makes no attempt to define the actual means of assessing semantic, pragmatic, and/or stylistic levels of processing. Indeed, assessments may need to vary based on the content areas which are of value (general educational topics, medical topics, legal topics, etc.)

One significant part of evaluation remains to be defined: just what is meant by the words "consistent accuracy." Consistent should mean no less than 50% of the interpretation should fall within the level of analysis. If the analysis is indeed being done statistically, then this measure can be achieved with some degree of objectivity. We may wish to tie the percentage to the level which most consumers would be willing to accept within certain contexts. While the interpretation of non-critical community events might be acceptable when 60% of the message is reproduced with semantic accuracy, the expectations in a legal situation might be for the pragmatic level to be at 90% (or beyond).

Why not go for 100%? That is the understood goal of all interpreting. The model suggests that when we comprehend information at higher levels, then the production in the lower levels can be more accurate. If we can comprehend the source text to a stylistic level, we should experience less stress in the production of the target text. Therefore we should be able to reduce the number of errors we make while we construct our target text. The problem of creating an interpretation that is 100% error free is that 1) there must be no ambiguities in the source text, 2) we must be able to find exact counterparts of meaning for every concept between the source and target languages, 3) we must have target language equivalents for every discourse feature that occurs in the source text, and 4) we must be so much like the speaker of the source text that people would think we were the speaker of the source text. I do not believe that we can fulfill all four of these requirements in any simultaneous interpretation task. If we really wanted to be 100% fair to our defendant who is charged with a felony, then we ought to pursue getting a judge and jury who use the defendant's language and forget about the interpreter.

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[63] Remember that this work suggests that processing below the semantic level should not be identified as "interpreting". Therefore the training in interpreting should be withheld until a student has demonstrated bilingual fluency at the semantic level or beyond.

Likewise, if we want to provide 100% access to an educational setting then the teachers, administrators, and peers of a linguistic-minority student should all use that language at the school and leave the interpreter to work elsewhere. Until people demand and require 100% access, these things will not likely happen.

These models are intended to provide some basic guidelines for interpreter training and for establishing testable parameters which should predict current interpreting limits and suggests specific areas of improvement to both interpreters and interpreter trainers. They also offer the potential for providing a more extensive certification system for interpreters both of signed languages and spoken languages. As with all models, these cannot even attempt to be complete and comprehensive explanations of the process, but rather they are offered in the spirit of being a few more perspectives which will be of benefit to some people and not to others. As Marina McIntire once said[64]: "Interpreting is impossible… so get better!"

[64] Personal communication from a 1997 workshop co-presented with Gary Sanderson.