UNIVERSITY OF CINCINNATI

DATE: January 10, 2006

I, Alice H. Smith, hereby submit this part of the requirements for the degree of:

Master of Arts

in:
Audiology

It is entitled:

The Difference Between Subjective and Objective Information Obtained from Adults with Hearing Impairment

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The Difference Between Subjective and Objective Information Obtained from Adults with Hearing Impairment

A thesis submitted to the
Division of Research and Advanced Studies
of the University of Cincinnati

in partial fulfillment
of the requirement for the degree of

MASTER OF ARTS

In the Department of Communication Sciences and Disorders
of the College of Allied Health Sciences

2006

by

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Abstract

The purpose of this study was to determine if a case history form, Client Oriented Scale of Improvement (COSI), and the Hearing Handicap Inventory (HHIA) assessed disabilities and / or handicaps resulting from hearing loss yield qualitatively similar results. If not, does the Wilson Learning Social Styles Inventory (WLSSI), a basic personality inventory, provide any indication to the types of differences that might be expected? Ten subjects who met the inclusion criteria were given four questionnaires (1) the case history form, (2) the COSI, (3) the HHIA and (4) the WLSSI. The results indicated that the COSI and the HHIA gave approximately the same amount of information as to the patient’s self-perception of the disability and / or handicap caused by their hearing loss. The results also showed that there is more agreement between the COSI and the WLSSI than there is between the HHIA and the WLSSI. In addition, a determination could not be made based on personality as to which self-assessment inventory was favorable. The WLSSI was given to the subjects as a self-assessment inventory of their individualistic personality traits and characteristics. Therefore, it is possible that for some of the subjects involved in this study a biased self-perception existed and inhibited the outcome of the hypothesized benefit of the WLSSI.
Acknowledgements

I would like to thank my family and friends for all of their love and support, especially my husband and son for being so patient with the amount of time that I put into doing my research. I would also like to thank my mom, sister and grandparents for the support invested in helping me to complete my education. I am also extremely greatful to Dr. Doug Martin for guiding me through the process of developing, researching and completing my study. My sincere appreciation goes to Dr. John Greer Clark for his assistance in making my research unique and interesting. A special thanks goes to Barb Mackey, her participation and guidance was instrumental in the gathering of data for my study. I learned more from her about clinical Audiology than she will ever know.
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Chapter I

Introduction

The most commonly used tool in the rehabilitation of adults with hearing impairment is fitting of amplification. While studies have shown that amplification can prove to be a very successful intervention technique with many individuals, others often require other intervention techniques beyond the hearing aid. These intervention techniques can include counseling and conversational management training or more analytic techniques such as speechreading or auditory training.

Over the lifespan of the field of audiology, a great deal of research has gone into the development of assessment tools that can help the audiologist determine the quantitative, objective aspects of a patient’s hearing. In recent years, some research efforts have focused on the development of assessment tools that are designed to investigate the patient’s subjective reactions to their hearing loss and resulting communication problems. There exists a school of thought that suggests that these types of tools, which often take the form of self-assessment questionnaires, may be helpful in determining the most appropriate rehabilitation plan (e.g., hearing aids alone or hearing aids plus extensive counseling and communication training) for a given individual. What’s not clear at this point is the extent to which these different assessment tools provide similar or different types of information regarding the disabling and / or handicapping aspects of an individual’s hearing loss.
Purpose

A need exists for determining if different types of self-assessment questionnaires provide qualitatively or quantitatively similar information that would help in predicting the need for and ultimate success of audiologic rehabilitation. As a first step in this process, the purpose of this study is to determine if two commonly used self-assessment tools, namely the Client Oriented Scale of Improvement (COSI) and the Hearing Handicap Inventory for Adults (HHIA) provide different types of information regarding a patient’s hearing disability and/or handicap. Also, this study is designed to determine if distinctive personality traits might influence which self-assessment questionnaire would be beneficial in gaining comparable information about emotional readiness for hearing aids. If personality does dictate which self-assessment inventory will be favorable, then a determination will be made as to a possible prediction of what a subject’s personality is so the most appropriate self-assessment inventory may be used to measure individualistic needs relating to hearing aids and aural rehabilitation.

To accomplish the stated goals for this study, evaluation of first time hearing aid users involves the comparison of information gained with the use of a case history, the COSI, the HHIA and the Wilson Learning Social Styles Inventory (WLSSI). The difference will be based on the quantity versus the quality of information obtained to determine the appropriate measures for hearing aid aural rehabilitation in the future. Based on the data collected from the COSI and the HHIA, the Wilson Learning Social Styles Inventory (WLSSI) will be used to assess dominant personality traits. Once the personality traits are evaluated then this information will be used to determine if personality can dictate which self-assessment questionnaire will be more beneficial for each subject.
The results of the above test will be analyzed against the subjective information gained from the case history interview. The case history will be completed as an unstructured conversational interview. The purpose of this research study is to determine if three different measures of self-assessed disability and/or handicap resulting from hearing loss yield qualitatively similar results. If not, does basic personality type provide any indication to the types of differences that might be expected?
Chapter II

Literature Review Outline

Reasons Affecting the Decision Process of Hearing Aids Purchase

There are several factors that have to be recognized and examined from the beginning stages of evaluating and managing a hearing impairment. It is important that both the audiologist and the individual with the hearing loss have the same goals. When helping adults to deal with hearing loss, several issues of life have to be considered to begin the initial process of hearing loss management. These include the emotional impact of hearing loss, and the quality of life with a hearing impairment.

The motivation for identifying the hearing loss and dealing with future management of hearing impairment needs to be taken into consideration. Wilson and Stephens (2003) suggest that with the majority of individuals, a family member is the primary motivator. Unfortunately, if there is someone else pushing the individual with a hearing loss to pursue help with it then the chances of success may not be very high. Kaplan (1991) states if someone is withdrawn and spends most of their time alone a hearing aid may not be of any useful benefit, however, if an individual that is motivated to purchase and wear a hearing aid is one that has an active social lifestyle. Those individuals with active social lifestyles will be more likely to take control of their hearing loss and be ready to manage it with the future aural rehabilitative capabilities necessary for communication success.

There is evidence of a growing number of aging adults with hearing loss that are still extremely active in social communities and work environments. There are many dynamics that
need and should be pursued for this population to better understand how to meet their needs concerning aural rehabilitation. There is a reluctance to use hearing aids within the elderly population based on the stigma of being handicapped associated with the use of hearing aids (Backenroth and Ahliner, 2000). This can provide an obstacle to aural rehabilitation. Therefore, when the elderly hearing aid population is more comfortable with the perception of wearing hearing aids then the amount of embarrassment and shame associated with them will start to dissipate and hearing aid use will increase. However, a focus needs to be placed on counseling clients, to help them become more comfortable thereby successful with the usefulness of hearing aids in correlation with communication strategies.

The use of self-assessment, audiologically based questionnaires can assist the audiologist in designing an aural rehabilitation program that meets specific needs in order to help the individual manage their hearing loss.
Measurement Options

How can we, as audiologists, determine if hearing aids are going to be beneficial for each individual who is wearing them? There are several methods used in correlation with aural rehabilitation to help determine the efficiency of hearing aids after the initial hearing aid fitting. Self-assessment questionnaires may be used before the hearing aid fitting to determine the emotional impact hearing loss has on an individual’s life and also how ready somebody is for hearing aids. Dillon, James and Ginis (1997) state there are two ways to determine the benefits of hearing aids and aural rehabilitation. The first is to use speech tests to objectively evaluate the ability to understand speech and the second method is to question the daily benefit that each individual receives using his / her hearing aids. If this process is applied before a hearing aid fitting, information is obtained and it may then be easier to determine the future of an individualized aural rehabilitation plan.

Assessment of Speech Audiometry

When an individual is made aware of the speech cues they are missing in the conversations of their daily lives, they are more likely to have a positive attitude towards the use of hearing aids (Dillon et al., 1997). By using speech tests, there is evidence of speech information that the individual is missing when assessing their ability to understand speech sounds. Speech tests objectively measure a potential increase of speech understanding thereby enhancing the probability of the future use of hearing aids. However the scores obtained when doing speech tests can be affected, primarily depending on the protocol and environment in which the tests are conducted. Therefore, to rely solely on speech tests as an indication of
whether or not an individual with a hearing loss will benefit from hearing aids may be unreliable (Dillon et al., 1997).

**Audiologically Based Self-Assessment Questionnaires**

Predicting the effects of hearing aids and aural rehabilitation for an adult stems from many areas of audiology. Understanding how to apply aural rehabilitation successfully involves several facets of audiology that have to be understood by the potential client. Therefore, self-assessment, audiologically-based questionnaires should be applied to give the audiologist and the client the ability to determine if he / she is ready for hearing aids. By questioning several future aspects of aural rehabilitation, clients can ascertain emotional, physical and financial knowledge of his / her personal hearing loss and hearing aids.

As Kricos and Lesner (2002) imply, it is important for audiologists to perfect the quality of services conveyed to new hearing aid wearers. People seem to have many misconceptions about hearing aids including cost, hearing aid size, internal circuitry, and maintenance. The idea of how efficient hearing aids can be in helping individuals with hearing loss function in the daily routines of the hearing world is often misunderstood (Binzer, 2002). These are issues that would also have to be addressed with potential clients when fitting them with hearing aids. By using self-assessment questionnaires, we, as audiologist, are helping to guide and motivate them to the point where they are ready to address these issues. By understanding their hearing loss and how it affects their individual lives they will then be able to predict or hope for a positive direction of aural rehabilitation (Backenroth and Ahliner, 2000).

Other areas of aural rehabilitation influenced by self-assessment questionnaires lie with possibly being able to predict the effectiveness of hearing aids even before fitting a client with
one. This will also hopefully help with cost effectiveness of hearing aids and efficiency of audiologists’ time and efforts involving aural rehabilitation. The primary notion of effective aural rehabilitation should and can meet these needs completely, if those needs are made apparent and addressed. Thereby using self-assessment questionnaires, individualistic needs are more understood and can be better met. However, when assessing aural rehabilitative needs one thing that needs to be kept in perspective is that “hearing aid[s] should be thought of as a tool in the rehabilitative process” (Palmer & Mueller, p.332). Clients need to understand hearing aids are tools for hearing loss; therefore, the successes of these tools rely on the consistency in which they are worn. If an individual has not come to terms with their hearing impairment then they cannot move forward with the necessary tools of future aural rehabilitation.

Self-assessment questionnaires are a form of surveys and surveys can help audiologists determine the quality of life before and after the introduction of hearing aids into a hearing aid wearer’s life. Kaplan (1991) suggests that the use of a self-assessment questionnaire be used early on to identify attitudes of hearing loss and hearing aids to help decide the potential focus of the individualistic aural rehabilitation counseling. Self-assessment questionnaires or surveys are utilized in the process of determining the future success of hearing aid orientation and can be defined in two domains namely, qualitative and quantitative measures.

Qualitative measures are tools, primarily configured as open-ended questionnaires, that may help clients better accomplish the task of telling the audiologist their frustrations with hearing loss and hearing aids. According to Trochim (2003), qualitative methods focus on and generate information that is very detailed. He states that qualitative measures should identify the individuals who directly experienced the phenomenon in question. These individuals should be interviewed at length, and then the interview should be heavily edited so that they "tell a story"
that is different from what anyone else might tell but still addresses the point of interest

This idea of obtaining qualitative measurements certainly reaches into the realm of
audiology and aural rehabilitation. Each hearing aid client and their needs should be treated
individually. When a hearing loss is recognized and the client is ready to move forward into the
stages of being fitted with hearing aids, qualitative measures can and should be used. The
benefit of these measures will help the process of aural rehabilitation to have a more successful
outcome. By performing a hearing aid evaluation, with the use of the Client Oriented Scale of
Improvement (COSI), in this manner an audiologist can be extremely attentive to the specific
needs of each individual and better organize an aural rehabilitation program that is specific to
individualistic needs, instead of applying the same aural rehabilitation design for every client
(Kricos and Lesner, 2000).

However, it can be argued that qualitative tools may not necessarily be the best
measurements used for gathering information from clients. There are those individuals that may
not be able to initiate or express their concerns, expectations and / or frustrations of hearing loss
before being fitted with hearing aids. Also, the same individuals are probably not going to be
able to express the areas of satisfaction or even dissatisfaction when it comes to the success or
the use of hearing aids. In these instances, quantitative tools would be better employed to collect
the necessary information for continuing a more effective aural rehabilitation program.

The use of quantitative measurements can help the audiologist and the individual
recognize experiences when a hearing loss is frustrating and trying. Quantitative tools ask
specific questions that are many times resolved with the use of multiple choice, ranked or yes /
An example of quantitative measurements, such as the Hearing Handicap Inventory for Adults (HHIA), are often expressed in surveys as questions that ask individuals with hearing loss to rank situations in which their hearing loss cause a problem for communication.

Description of the Client Oriented Scale of Improvement (COSI), Hearing Handicap Inventory for Adults (HHIA), and the Wilson Learning Social Styles Inventory (WLSSI)

The Client Oriented Scale of Improvement (COSI) enables the subject to indicate the listening situations and the environments which pose the greatest difficulty of communication for them (Weinstein, 2000). It is a structured subjective self-assessment tool that is an open-ended, self-report form for individuals with hearing loss in which they identify five communication problems in different environments (Dillon et al., 1997). The communication problems listed are then ranked by the individual in order from most problematic to least problematic. The COSI may then be used in follow-up visits to determine the success of hearing aids by returning to and assessing the communication problems listed before the use of the hearing aids. However, for this study, the COSI will only be used at the time of the hearing aid evaluation. The Hearing Handicap Inventory for Adults (HHIA) is a structured objective self-assessment measure of the disability that hearing loss is causing in the daily life of an individual with hearing loss and may also be beneficial as an indication of the use of hearing aids after being fitted. However, for the purposes of this study, the HHIA will be used prior to the hearing aid fittings. The hearing aid user is given a scaled answer to rank the degree of problems that exist within different communication situations (Newnan and Jacobson, 1990). The Wilson Learning Social Styles Inventory (WLSSI) is a self-assessed personality inventory that reveals four personality behaviors based on strong personality characteristics. These behaviors are categorized as expressive, driver, amiable, and analytical (Wilson, 2004).
Chapter III

Methods and Materials

This study will entail the effectiveness of the Client Oriented Scale of Improvement (COSI) to help assess the value of qualitative measurements and the Hearing Handicap Inventory for Adults (HHIA) for a quantitative measurement of the impact of hearing loss. The COSI will be used and observed to help predict the efficiency of qualitative tools for the determination of aural rehabilitation needs in correlation with the use of hearing aids. The COSI is an open–ended, self–report form for use with hearing aid users to identify five communication problems in different environments (Dillon et al., 1997). The HHIA will be used to examine the efficacy of quantitative tools as a measurement in predicting aural rehabilitation needs also in correlation with the use of hearing aids. The HHIA is used as a self-assessment of the disability that the hearing loss is causing in the daily life of the hearing aid user and as an indication of how beneficial the use of hearing aids are after being fitted. This study will only assess the problems that an individual’s hearing loss is causing currently. The hearing aid user is given a scaled answer to rank the degree of problems that exist within different communication situations (Newnan and Jacobsen, 1990).

Subjects will give a short history of their hearing loss, when it was diagnosed and the dominating effects that the hearing loss has on each individual’s quality of life.

Audiometric measurements will be obtained to determine degree of hearing loss. The audiometric testing will include otoscopic examination, tympanometry, speech reception thresholds, speech discrimination, and pure tone results (air and bone).
The Client Oriented Scale of Improvement (COSI) (Appendix C)

The COSI will be given as a qualitative tool and assesses the individual’s ability to give five examples when their hearing loss poses a problem. The COSI will be given verbally by the principle investigator and the instructions are as follows:

The purpose of the scale is to identify specific situations in which you’re hearing loss causes you problems in different environments. List five specific situations in which you would like to hear more clearly. Identify the importance of each situation by assigning a number from one through five with one being the biggest problem and five being the least problematic listening situation.

The Hearing Handicap Inventory for Adults (Appendix D)

The HHIA will be given as a quantitative tool and consists of 25 “yes” / “sometimes” / “no” questions assessing the subject’s emotional and physical abilities to hear in different situations. The HHIA will be given verbally by the principle investigator and the instructions are as follows:

The purpose of the scale is to identify the problems your hearing loss may be causing you. Answer Yes, Sometimes, or No for each question. All of the questions must be answered and no question will be skipped even if you avoid a situation because of a hearing problem.

The Wilson Learning Social Styles Inventory (WLSSI) (Appendix E)

The Wilson Learning Social Styles Inventory (WLSSI) will be given to assess the subject’s dominating personality types. The WLSSI will be given verbally by the clinical advisor and will not be viewed by the principle investigator until after all of the research has been gathered and evaluated. The instructions for the WLSSI are as follows:

The purpose of the inventory is to determine strong personality traits that may reflect communication needs when counseling on the use of hearing aids. The instructions and the assessment will be given by one of my clinical supervisors, Barb Mackey or Carla Kurtz. The function of this inventory is to determine your primary and secondary social styles. Rank each row from most to least as most characteristic of you in a given
situation. Moving from left to right assign a “4” for most characteristic down to a “1” for the least characteristic modifier of your personality.
Chapter IV

Results and Discussion

In order to answer the research question posed by this study, the relationship among the many variables had to be analyzed. Therefore, upon completing the data collection of this study, the information obtained from the COSI and the case history form were compared, the information from the HHIA and the case history were compared, the WLSSI was evaluated in order to determine personality behaviors and interpersonal social styles, the personality behaviors revealed by the WLSSI and the information obtained from the COSI were compared, and the personality behaviors revealed by the WLSSI were compared to the questions answered in the HHIA. The results of this study are displayed in table 1. This table, for each subject, includes their subject number; gender and age; the results of the COSI in comparison to the case history; the results of the HHIA in comparison to the case history; the primary, secondary and interpersonal social styles for the WLSSI; the WLSSI in comparison to the COSI; and the WLSSI in comparison to the HHIA.
Comparison of the COSI and the case history

Five out of the ten subjects showed consistency in the amount of information given for the COSI when compared to the amount of information obtained for the case history form. This means that the situations listed in the case history and the situations expressed on the COSI were very similar, if not identical.

Three out of the ten subjects showed partial consistency for the information gathered from both the COSI and the case history form. This indicates that there were some similarities between the situations listed on the case history and the situations expressed on the COSI. For
example, on the COSI, subject 3 listed social events with background noise, distinguishing voices at work, and the television along with the car radio as being problematic listening areas. He stated that the TV volume is turned up too loud for the rest of his family members in order for him to hear the television and also stated that the volume for the car radio has to be “really loud” for him to be able to hear it. In the case history form, he did indicate large groups and work as being problematic listening environments but he did not check television or radio. Therefore, due to the variation of the information given for the COSI and the case history, the comparison was determined to be partially consistent.

The remaining two subjects showed greater degrees of inconsistency within the information given for the COSI and the case history. This means that the subjects showed no agreement between the problematic hearing situations listed on the case history form and the situations expressed by the subject on the COSI. Subject 5 checked none of the situations listed in the case history. However in contrast, for the COSI, she listed church, telephone, children, small groups, and listening in the car as being problematic areas for communicating. There is no correlation between the comparison of the information obtained for the case history and the information given on the COSI; therefore, there is no consistency.

Comparison of the HHIA and the case history

Six out of the ten subjects showed consistency between the information given in the case history and the situational questions addressed in the HHIA. This indicates that the situations listed in the case history correlated with the situational questions (a "yes" answer) of the HHIA.

Only one subject out of the ten test subjects showed partial consistency between the information given in the case history and the questions answered for the HHIA. This means that
there were some similarities for the information obtained between the case history and the HHIA. For example; on the case history form, subject 6 listed that she had problems hearing on the phone, in large groups and when listening to the television and the radio. However when asked about hearing problems with similar situations on the HHIA, only a few questions were checked with a "yes" answer. The rest were "sometimes" or "no" answers. Therefore, there was some evidence of agreement but not enough to be completely consistent.

The three remaining subjects showed no consistency between the situations given on the case history form and the situational questions answered in the HHIA. For example; on the case history form, subject 9 listed that she had problems hearing on the phone, in large groups and when listening to the television and the radio. However when asked about hearing problems in similar situations on the HHIA, she answered “no” to the majority of the questions. Therefore, there was no agreement between the information obtained on the case history form and the questions answered on the HHIA.

The majority of the ten subjects did show complete consistency or some consistency (50% consistent, 30% partially consistent) when comparing information given on the COSI to the information obtained within the case history. The majority of the subject group also showed complete consistency (60% consistent, 10% partially consistent) when comparing the questions answered in the HHIA to the case history form.

Behavior Identification of the WLSSI

The WLSSI is a self-assessment inventory that is used to help identify four different personality behaviors based on strong personality characteristics (table 2). The identifying behaviors include amiable, analytical, driver and expressive. The WLSSI revealed that eight of
the ten subjects have a primary personality trait of amiable behavior. The characteristics for this behavior listed on the self-assessment include steady, deliberate, predictable, patient, stable, protective, accommodating, modest, easy-going, and sincere. These characteristics indicate that individuals with this personality behavior would be willing to honestly discuss their hearing loss and the impact it is having on their life. They would more than likely purchase hearing aids but may not give the time necessary to get optimal use from the aids. However, this population is also the most likely to indicate any problems they are having with the aids. The WLSSI revealed that one person out of the ten subjects has a primary personality trait of analytical behavior. The characteristics for this behavior include cautious, restrained, logical, disective, precise, doubtful, concur, tactful, consistent, and a perfectionist. The characteristics for this personality indicate that this individual may have a harder time discussing their hearing loss due to embarrassment and dependent on where she is in the spectrum of dealing with her hearing loss. However, it also means that she should be able to give specific instances and information on the frustrations of dealing with her hearing loss. The downfall to an analytical personality behavior in dealing with management of hearing loss is the "perfectionist" trait. For example, an analytic may not be happy with hearing aids because they do not have the capability to restore the hearing to what it was before the hearing loss became an evident problem. Therefore, this individual may not attempt to wear hearing aids or if hearing aids are purchased she may return them. The WLSSI revealed the last subject has a primary personality trait of expressive behavior. The characteristics for this behavior include influencing, optimistic, enthusiastic, open, impulsive, emotional, persuading, talkative, charming, and sensitive. These characteristics indicate that this individual will have a high emotional effect from his hearing loss on his social life. Therefore, he will be ready to quickly advance to the management stage of his hearing loss. However, he
may purchase hearing aids, become frustrated with them and discontinue wearing them without giving his auditory cortex the chance to adjust to the hearing aids.

The WLSSI revealed that four out of the ten subjects have a secondary trait of expressive behavior. Those characteristics are the same characteristics identified as being the primary personality trait of expressive given in the information above. The WLSSI revealed that three out of the ten subjects have a secondary trait of analytical behavior. Those characteristics are the same characteristics identified as being the primary personality trait of analytical given in the paragraph above. The WLSSI revealed that one individual out of the ten subjects has a secondary trait of amiable behavior. Those characteristics are the same characteristics identified as being the primary personality trait of amiable given in the information above. The WLSSI revealed the remaining subject as having a secondary trait of driver behavior. The characteristics for this behavior include directing, self-assured, adventurous, decisive, daring, restless, competitive, assertive, experimenting, and forceful. These characteristics indicate that an individual with this type of behavior would probably be the best to fit with hearing aids. A driver is usually active and therefore wants to be able to hear and function as normally as possible within the hearing world.

<table>
<thead>
<tr>
<th>WLSSI Individual Social Styles</th>
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<tbody>
<tr>
<td><strong>Analytical</strong></td>
<td></td>
</tr>
<tr>
<td>Focuses on facts and logic</td>
<td></td>
</tr>
<tr>
<td>Acts when payoff is clear</td>
<td></td>
</tr>
<tr>
<td>Careful not to commit too quickly</td>
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</tr>
<tr>
<td><strong>Driver</strong></td>
<td></td>
</tr>
<tr>
<td>Focuses on results</td>
<td></td>
</tr>
<tr>
<td>Takes charge</td>
<td></td>
</tr>
<tr>
<td>Makes quick decisions</td>
<td></td>
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<tr>
<td><strong>Amiable</strong></td>
<td></td>
</tr>
<tr>
<td>Cooperates to gain agreement</td>
<td></td>
</tr>
<tr>
<td>Provides support</td>
<td></td>
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<tr>
<td>Communicates trust and confidence</td>
<td></td>
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<tr>
<td><strong>Expressive</strong></td>
<td></td>
</tr>
<tr>
<td>Creates excitement &amp; involvement</td>
<td></td>
</tr>
<tr>
<td>Shares ideas, dreams &amp; enthusiasm</td>
<td></td>
</tr>
<tr>
<td>Motivates, inspires &amp; persuades</td>
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</tbody>
</table>

*Table 2. Strong characteristics for individual behaviors of the WLSSI. Wilson Learning Library, 2004.*
WLSSI Interpersonal Social Styles

The WLSSI interpersonal social styles are indications of how an individual interacts and communicates with other people. These social styles are dependent on the combination of the primary and secondary behaviors. There are four types of interpersonal social styles; ask-directed assertiveness, tell-directed assertiveness, task directed responsiveness, and people-directed responsiveness. The communication strategies entailed by these social styles are displayed in *table 3*. Five out of the ten subjects were determined, based on their primary and secondary personality behavior, to have an interpersonal social style of ask-directed assertiveness. Assertiveness describes the way that an individual tries to influence the thoughts and actions of others (Wilson, 2004). For example, an individual with an interpersonal social style of ask-directed assertiveness will exhibit the following characteristics while in conversation: subtly asks questions, suggests ideas, talks more slowly, allows pauses, are calm, composed and in a relaxed leaning back position (Wilson, 2004). This means that when communicating with others, these individuals tend to be casual with their communication (Wilson, 2004).

One subject was determined as having an interpersonal social style of tell-directed assertiveness. For example, an individual with an interpersonal social style of tell-directed assertiveness will exhibit the following characteristics while in conversation: rapid speech, interrupts while the other person is talking, and keeps conversation moving (Wilson, 2004). This means that when communicating with others, this individual will tend to be more direct, forceful and demonstrative when asking questions or making statements (Wilson, 2004).

Four out of the ten subjects were determined as having an interpersonal social style of people-directed responsiveness. Responsiveness, as a social style, means that when
communicating with others, these individuals tend to express emotions and identify with feelings when communicating (Wilson, 2004). For example, an individual with an interpersonal social style of people-directed responsiveness will demonstrate the following characteristics while in conversation: use of broad and various gestures, more facial expressions, use of voice inflection, and will develop personal relationships to help insure the success of the immediate task by focusing on feelings and relationships (Wilson, 2004).

There was an approximately even distribution of ask-directed assertiveness (50%) and people-directed responsiveness (40%) interpersonal social styles within the subject group.

<table>
<thead>
<tr>
<th>WLSSI Interpersonal Social Styles</th>
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<tbody>
<tr>
<td><strong>Assertiveness</strong> - The way in which we are perceived as trying to influence the thoughts and actions of others.</td>
</tr>
<tr>
<td><strong>Ask-Directed Assertiveness</strong></td>
</tr>
<tr>
<td>Speaks deliberately, often pausing</td>
</tr>
<tr>
<td>Seldom interrupts others</td>
</tr>
<tr>
<td>Seldom uses voice for emphasis</td>
</tr>
<tr>
<td>Makes many conditional statements</td>
</tr>
<tr>
<td>Stature - Tends to lean back in conversations</td>
</tr>
<tr>
<td><strong>Responsiveness</strong> - The way in which we are perceived when expressing our feelings when relating to others.</td>
</tr>
<tr>
<td><strong>Task-Directed Responsiveness</strong></td>
</tr>
<tr>
<td>Talks more about tasks and facts</td>
</tr>
<tr>
<td>Uses minimal body gestures</td>
</tr>
<tr>
<td>Shows narrow range of personal feelings to others</td>
</tr>
<tr>
<td>Uses limited facial expressions</td>
</tr>
</tbody>
</table>


Comparison of the WLSSI and the COSI

Five out of the ten subjects showed consistency when comparing the COSI to the behaviors identified in the WLSSI. For example, subject 1 is categorized as having an amiable dominant personality trait with a secondary trait categorized as analytical behavior. The traits
for amiable consist of cooperating to gain agreement, provides support and communicates with trust and confidence (Wilson, 2004). The analytical traits consist of focusing on facts and logic, acting when payoff is clear, and is not too careful to commit too quickly (Wilson, 2004). Subject 1 has a bilateral mild to moderately-severe sensorineural hearing loss. Therefore with these traits in mind in correlation with her hearing loss, this subject should be able to give clear, concise answers to the COSI. She listed four situations and/or environments in which her hearing was a problem. When asked to give a 5th example she stated she did not have another situation, she had given us all of the problem areas that involved communicating with her hearing impairment. She was also very cautious when it came to the time to talk about purchasing hearing aids. She read every line of the contract carefully and asked very thorough questions. In the end, she did purchase hearing aids but returned them because she felt like they were not making a huge difference in her ability to understand speech. She was very polite but it did not matter what was said about the hearing aids, her mind was made up. Her behavior is indicative of the personality styles recognized by the WLSSI. Therefore, for subject 1, the comparison between the COSI and the WLSSI was consistent.

Two of the five subjects showed partial consistency with the COSI and the WLSSI. For example, subject 5 is characterized as having an amiable primary behavior with a secondary trait as expressive. The traits for amiable consist of cooperating to gain agreement, provides support and communicates with trust and confidence (Wilson, 2004). The traits for expressive consist of creating excitement and involvement; sharing ideas, dreams and enthusiasm; motivates, inspires and persuades (Wilson, 2004). Subject 5 has normal hearing through 500 Hz with a mild sloping to a severe sensorineural hearing loss bilaterally. It is expected that she would have an abundance of information of when her hearing loss causes communication problems. It is also
expected she should be able to give specific instances of her communication problems caused by the hearing loss due to the emotional affect the hearing impairment is having on her social life. On the COSI, she does give five problematic areas; however, she cannot give any details and is very vague about the types of problems she is having within these environments. Therefore for subject 5, the amount of information given on the COSI is partially consistent with her personality traits.

Two of the ten subjects show no consistency with the COSI and the WLSSI. For example, subject 9 is characterized as having an amiable primary personality behavior and a secondary trait as analytical. She has a bilateral mild to severe sensorineural hearing loss. The combination of the behaviors identified for subject 9 is similar to those identified for subject 1 in a previous example. Therefore based on the behaviors identified with the WLSSI and her hearing loss, she should definitely be aware of the communication problems she is having. However, she could only list three problem areas on the COSI. Those areas included the television, talking to children and listening in a crowd. She had a difficult time expressing specifics about the problems she was having with her hearing. Subject 9 has a bilateral mild to severe sensorineural hearing loss that she has dealt with for the past five years. Based on her personality traits and her hearing loss, she should have been able to better identify communication problems that her hearing loss is causing and to provide more information with details.

Comparison of the WLSSI and the HHIA

Seven out of the ten subjects showed consistency when comparing the behaviors of the WLSSI to the emotions expressed in the HHIA. For example, subject 3 is categorized as having
an expressive dominant personality trait with a secondary trait categorized as driver behavior. The traits for expressive consists of creating excitement and involvement; sharing ideas, dreams and enthusiasm; and motivates, inspires and persuades (Wilson, 2004). The driver traits consist of focusing on results, taking charge, and making quick decisions (Wilson, 2004). Subject 3 has a bilateral mild to moderately severe sensorineural hearing loss. Therefore, due to the primary and secondary behaviors in correlation with the hearing loss of this subject, it is expected that information given by him about the emotional aspects of his hearing loss should be candid, thorough and exact. It would also be expected that subject 3 is willing to talk about future options for managing his hearing loss. In fact, this is exactly what subject 3 did. He purchased hearing aids that day, came two weeks later and then was seen again at his two week check. At the time of the follow-up, he reported to be doing well; he was wearing his aids at 8-10 hours a day and could tell an improvement in the way that he was communicating with his family and friends.

One individual out of the ten subjects showed partial consistency when comparing the WLSSI and the COSI. Subject 2 is categorized as having an analytical primary behavior with a secondary trait categorized as amiable behavior. The characteristics of these behaviors have previously been mentioned several times; therefore they will not be reviewed again at this time. Subject 2 has normal sloping to severe sensorineural hearing loss bilaterally. Therefore with these behaviors in mind, it is expected that subject 2 is well aware of the specific problems that her hearing impairment causes and be able to openly explain her communication frustrations with insight and knowledge. However, her results for the emotionally based questions for the HHIA were not similar to each other. Questions E-5, E-8, E-14, E-17, and E-25 focus on the feelings of isolation, frustration and the anger of dealing with a hearing loss; she answered yes to
all of these questions. Questions E-2, E-4, E-10, and E-24 all deal with frustrations and
embarrassment associated with communicating with others; she answered sometimes to these
questions. However, question E-20 asks “do you feel like that any difficulty with you hearing
limits of hampers your personal or social life?” She answered no, it is expected that with the
number of "yes" and "sometimes" answers given to the questions listed above, the answer to this
one questions would be "yes". It is also expected that based on the characteristics of analytical
behavior there would also be very few "sometimes" with more "yes" or "no" answers.

One subject showed inconsistency when comparing the WLSSI and the HHIA. Subject 1
will be used as an example again. She is categorized as having an amiable dominant personality
trait with a secondary trait categorized as analytical behavior. The traits for the combined
personality behaviors have been mentioned previously for this particular subject. With these
traits in mind she should be able to answer the HHIA with honesty and without embarrassment
about her hearing loss. She should also be aware of the impact on quality of life that her hearing
loss is causing. She has a mild to moderate bilateral sensorineural hearing loss. In her case
history she states that she recognized the gradual loss of her hearing approximately 1 year ago.
She states that she has a difficult time especially hearing her husband and also on the telephone.
Due to her hearing loss, she should have some difficulties communicating in social situations.
She checked "no" to every emotional question except for E-25 (“Does a hearing problem cause
you to feel left out when you are with a group of people?”), in which she checked "sometimes".
The results expected for this subject based on this comparison is recognition of partially
consistent. However, she is adamant that she does not have any communication problems and
has issues with admitting the emotional aspects of her hearing loss at this time. Therefore, the
comparison of the WLSSI and the HHIA for subject 1 is inconsistent.
The majority of the subjects did perceive themselves as having an amiable primary behavior (80%) with a secondary trait of an analytical (40%) or an expressive (40%) behavior. The majority of the ten subjects did show complete consistency (80%) between the behaviors recognized in the WLSSI and the emotional aspects of dealing with hearing impairment addressed in the HHIA. A numeric majority of the subject pool did show complete consistency (60%) between the behaviors recognized in the WLSSI and the expected information given on the COSI.

Limitations

The limitations for this study include subject size, variability of subjective analysis of data, and the subject biasness of the WLSSI. The size of the subject pool was small; however, due to the criteria for subject participation there was a limited adult population to pull from. The variability of subjective analysis of the data may cause reservations about the accuracy of the comparisons made among the different tests in order to obtain the results. Also, the subject biasness of the WLSSI was disconcerting even for the principle investigator. However, these test results were not evaluated or assessed until after all other comparisons were made and analyzed.
Chapter V

Conclusion

There was an immense amount of consistency within the assessments compared; however, there was very little consistency within the information obtained with the use of the three assessments for each individual subject. It was expected that each subject would show consistency for the majority of the comparisons made between the self-assessments used in this study. However, this was not the case; therefore it is the opinion of the principle investigator that the case history form, the COSI, and the HHIA do not yield an equal amount of qualitative information. The use of a detailed case history form in correlation with a verbal interview (between the audiologist and the patient) of the information given in the case history form was superior to that of the information obtained from either the COSI or the HHIA or a combination of both self-assessments. However, the process of completing these questionnaires with the subjects lead to a subjective insight for the principle investigator into each subject's emotional spectrum of where they are in terms of dealing with their hearing impairment.

Also, there was no way to determine if basic personality characteristics provide any indication to the types of differences in information obtained from an individual with hearing impairment. The results of the WLSSI may not be completely accurate based on the fact that it was given to the subjects as a self-assessment inventory of their individualistic personality traits and characteristics. Therefore, it is possible that for some of the subjects involved in this study a biased self-perception exists and may inhibit the outcome of the hypothesized benefit of the WLSSI.

The use of a well designed case history form that asks specific questions on the impact of
hearing loss is the most useful tool for an audiologist to use to gain the appropriate information needed to determine the individualistic aural rehabilitative needs for each client / patient. However, this assumption is based on where the clients / patients are within the emotional spectrum of dealing with their hearing loss. Therefore, if an individual with a hearing loss is not ready to identify or recognize the difficulties of communicating associated with their hearing impairment, then they are not ready to deal with future aural rehabilitation plans. If this is the case, it is in the best interest of the audiologist to explain the process of the hearing evaluation and the specifics of the hearing loss to the client / patient. Therefore, the client / patient is leaving with an understanding of what happened during the hearing evaluation and the results of the evaluation. Thereby, leaving with the knowledge to take future steps towards the management of their hearing loss when they are emotionally ready to recognize and deal with the communication problems a hearing loss has on daily life.
References


Appendix A
University of Cincinnati and St. Elizabeth Medical Center
Informed Consent Statement

You are being asked to take part in a research study. The purpose of this document is to give you information to consider in deciding whether to take part in this research study. Your consent, or agreement to take part in the study, must be based on an understanding of the nature and risks of the treatment, device or procedure. Please ask questions if there is anything you do not understand. Your participation is voluntary and will have no effect on the quality of your medical care if you choose not to participate.

The purposes of the research study are 1) to learn about how adults with hearing loss view their communication ability in everyday life, and 2) to see if adults’ personalities relate to their report about their communication ability in everyday life. You will be asked to answer questions about you and how your hearing loss affects your communication in everyday life using three different short scales: the Client-Oriented Scale of Improvement (Scale-1), the Hearing Handicap Inventory for Adults (Scale-2) and the Wilson Learning Social Styles Inventory (Scale-3). These scales will be given to you after your hearing and medical history is reviewed, and before your hearing test. In a quiet, private room, Scale-1 and Scale-2 will be given by a University of Cincinnati audiology-doctoral student, Alice Smith, and Scale-3 will be given by an audiologist from St. Elizabeth Medical Center. The three scales will take about 25 minutes to complete. You will then have your scheduled hearing test in a sound-treated booth in the standard way, and some of these test results will also be used in the research report (for example, degree of hearing loss, your ability to understand and repeat words).

There are no known physical or emotional risks to you in completing Scales-1, 2, and 3. You may benefit from this study by gaining a better understanding of how your hearing loss affects you.

There is no cost to you to take part in this study (completing Scales-1, 2, 3).

Your research information from this study will be kept confidential, in agreement with federal law, state law and the Authorization to Disclose Health Information form you signed as a patient of St. Elizabeth Medical Center. All of the tests about your hearing will be kept confidential in your medical (hearing) record chart. Your research information may be disclosed to St. Elizabeth Medical Center research review staff, University of Cincinnati, or the U. S. Food and Drug Administration. St. Elizabeth Medical Center must obey legal requirements that order disclosure in unusual situations. Your research information from this study will be disguised or unidentified in any research publication.

A follow-up study may be done, and you may be invited for more testing and interviews. Your part in any follow-up studies is voluntary and you do not have to be in the studies.

Your participation in this study is completely voluntary. You can choose to not participate, or stop participating at any time without fear of penalty or loss of medical care.

If you have any questions about this study, you should contact Alice Smith, principle investigator, at (513) 922-2174, Dr. Doug Martin, Associate Professor at the University of Cincinnati at (513) 558-8601, or Dr. Allen Zobay, Chairman of the Institutional Review Board at St. Elizabeth Medical Center at (859) 344-2115.

Signature
I have read this consent form or it has been read to me and I understand what it says. I understand that my participation is voluntary and that I may stop taking part in the study at any time. I will receive a copy of this consent form. By signing below, I agree to take part in this research study.

_________________________________________    __________
Subject          Date

_________________________________________    __________
Alice Smith, Principle Investigator, University of Cincinnati AuD student          Date

_________________________________________    __________
Witness          Date
Appendix B
Case History Form

ST. ELIZABETH MEDICAL CENTER
DEPARTMENT OF AUDIOLOGY AND SPEECH PATHOLOGY
EDGEOOOD, KENTUCKY
(859) 578-5740 FAX:(859) 578-5741

Date__________________

Please fill out this form as completely as possible and bring it with you to your appointment. All information provided is, of course, confidential and is of value in evaluating and planning for your treatment.

ADULT HEARING CASE HISTORY

I. IDENTIFYING INFORMATION

Name:________________________ Date of Birth:______________ Age:__________

Address:___________________________________________________________

City________________________ State_________ Zip__________ Telephone:________________________

Employed by:________________________ Job Descr.:________________________

Reason for referral:__________________________________________________

Referred by:________________________ Physician:________________________

II. HISTORY

1. Do you have a hearing problem? □ Yes □ No Which ear? □ Right □ Left

2. When was the problem first noticed? __________________________________________

3. Was it sudden or gradual in onset? __________________________________________

4. Have you ever had:
   - Chewing/Swallowing Problems? □ Yes □ No Explain:________________________
   - Unintentional Wt. Loss/Gain? □ Yes □ No Explain:________________________
   - Head Injury? □ Yes □ No Explain:________________________
   - Ear Infections? □ Yes □ No Ear Drainage? □ Yes □ No
   - Ear Surgery? □ Yes □ No Explain:________________________
   - Dizzy Spells? □ Yes □ No Describe:______________________________________
   - Frequent Headaches? □ Yes □ No
   - Allergies? □ Yes □ No Sinus problems? □ Yes □ No
   - Stuffy Ears? □ Yes □ No
   - Ear Pain? □ Yes □ No If yes, please rate: Low Moderate High
   - Joint Pain? □ Yes □ No Please Describe:________________________
   - Other Pain? □ Yes □ No Please Describe:________________________
   - Difficulty with ADL’s? □ Yes □ No Please Describe:________________________

5. Is your hearing stable from day to day?________________________

6. Do you know what caused your hearing problem?__________ Explain:________________________

7. Do you consider your hearing: Good?__________ Fair?__________ Poor?__________
8. Do you have trouble understanding speech? ______ Certain voices? ______
   Explain:__________________________

9. Do you have trouble hearing:
   On the telephone? ______ At work? ______
   In large groups? ______ At religious services? ______
   The radio? ______ TV? ______

10. Are or were you exposed to loud noises: At work? ______
    In military? ______
    At home? ______

11. Do or did you shoot weapons (trap, skeet, hunt, etc.?) ______

12. Have you worn ear protection? ______

13. Do you wear, or have you ever worn a hearing aid? ______
   What kind? ________________________ When did you get it? ________________________
   Where did you get it? ________________________ Did it help? ________________________
   Significantly? ________________________

14. Have you ever had a hearing test? ______ When? ______

15. Have you been to the doctor about your ears specifically? ______
   Explain:__________________________

16. Are you receiving any medication? ________________________
   Please list medications and dosage ________________________
   ________________________
   ________________________

17. Is there a history of hearing loss in your family? ______
   Explain:__________________________

Form completed by: ________________________ Date: ________________________

Relationship to client: ________________________

*Thank You.*
COSI (The NAL Client-Oriented Scale of Improvement)

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Addressee</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>1. Need established</td>
<td></td>
</tr>
<tr>
<td>2. Outcome assessed</td>
<td></td>
</tr>
</tbody>
</table>

### Degree of Change

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<tr>
<th>Score</th>
<th>No Difference</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
<th>Much</th>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>3</td>
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<tr>
<td>4</td>
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</table>

### Final Ability (with hearing instrument)

<table>
<thead>
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<th>Score</th>
<th>First Time</th>
<th>First 5%</th>
<th>First 15%</th>
<th>First 25%</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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</tr>
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<td>2</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

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Appendix C
Client Oriented Scale of Improvement (COSI)
### Appendix D

**Hearing Handicap Inventory for Adults (HHIA)**

*Instructions:* The purpose of the scale is to identify the problems your hearing loss may be causing you. Check Yes, Sometimes, or No for each question. Do not skip a question if you avoid a situation because of a hearing problem.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes (4)</th>
<th>Sometimes (2)</th>
<th>No (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1. Does a hearing problem cause you to use the phone less often than you would like?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-2.* Does a hearing problem cause you to feel embarrassed when meeting new people?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-3. Does a hearing problem cause you to avoid groups of people?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-4. Does a hearing problem make you irritable?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-5.* Does a hearing problem cause you to feel frustrated when talking to members of your family?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-6. Does a hearing problem cause you difficulty when attending a party?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-7.* Does a hearing problem cause you difficulty hearing/understanding coworkers, clients, or customers?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-8.* Do you feel handicapped by a hearing problem?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-9.* Does a hearing problem cause you difficulty when visiting friends, relatives, or neighbors?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-10. Does a hearing problem cause you to feel frustrated when talking to coworkers, clients, or customers?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-11. Does a hearing problem cause you difficulty in the movies or theater?</td>
<td></td>
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</tr>
<tr>
<td>E-12. Does a hearing problem cause you to be nervous?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-13. Does a hearing problem cause you to visit friends, relatives, or neighbors less often than you would like?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-14.* Does a hearing problem cause you to have arguments with family members?</td>
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<td>Question</td>
<td>Yes (4)</td>
<td>Sometimes (0)</td>
<td>No (2)</td>
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<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
<td>---------------</td>
<td>--------</td>
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<tr>
<td>S-15.* Does a hearing problem cause you difficulty when listening to TV or radio?</td>
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<td></td>
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<tr>
<td>S-16. Does a hearing problem cause you to go shopping less often than you would like?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>E-17. Does any problem or difficulty with your hearing upset you at all?</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>E-18. Does any problem cause you to want to be by yourself?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>S-19. Does a hearing problem cause you to talk to family members less often than you would like?</td>
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<td></td>
<td></td>
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<tr>
<td>E-20.* Do you feel like that any difficulty with your hearing limits or hampers your personal or social life?</td>
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<tr>
<td>S-21.* Does a hearing problem cause you difficulty when in a restaurant with relatives or friends?</td>
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<tr>
<td>E-22. Does a hearing problem cause you to feel depressed?</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>S-23. Does a hearing problem cause you to listen to TV or radio less often than you would like?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-24. Does a hearing problem cause you to feel uncomfortable when talking to friends?</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>E-25. Does a hearing problem cause you to feel left out when you are with a group of people?</td>
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* Items comprising the HHIA-S
Appendix E
Wilson Learning Social Styles Inventory (WLSSI)

*Instructions:* In the space to the left of the modifiers, rank each row from most to least as most characteristic of you in a given situation. Moving from left to right assign a “4” for most characteristic down to a “1” for the least characteristic modifier.

<table>
<thead>
<tr>
<th></th>
<th>Directing</th>
<th>Influencing</th>
<th></th>
<th>Steady</th>
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<td>Self-assured</td>
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<td></td>
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<tr>
<td></td>
<td>Daring</td>
<td>Impulsive</td>
<td></td>
<td>Stabilizing</td>
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<td>Precise</td>
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<tr>
<td></td>
<td>Restless</td>
<td>Emotional</td>
<td></td>
<td>Protective</td>
<td></td>
<td>Doubting</td>
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<tr>
<td></td>
<td>Competitive</td>
<td>Persuading</td>
<td></td>
<td>Accommodating</td>
<td></td>
<td>Concur</td>
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<tr>
<td></td>
<td>Assertive</td>
<td>Talkative</td>
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<td>Modest</td>
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<td>Tactful</td>
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<tr>
<td></td>
<td>Experimenting</td>
<td>Charming</td>
<td></td>
<td>Easy-Going</td>
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<td>Consistent</td>
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<tr>
<td></td>
<td>Forceful</td>
<td>Sensitive</td>
<td></td>
<td>Sincere</td>
<td></td>
<td>Perfectionist</td>
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</table>

|   | Total |   | Total |   | Total |   | Total |

36