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## Exploring the Attitudes and Beliefs of Audiology Students About People Who Are Deaf or Hard of Hearing

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EXPLORING THE ATTITUDES AND BELIEFS OF AUDIOLOGY STUDENTS TOWARDS  
PEOPLE WHO ARE DEAF OR HARD OF HEARING

by

Nancy Grosz Sager

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By

Nancy Grosz Sager

## DEDICATION

This dissertation is dedicated in the memory of my first sign language teacher, Bill White.

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## Exploring the Attitudes and Beliefs of Audiology Students Towards People Who Are Deaf or Hard of Hearing

### Abstract

By Nancy Grosz Sager

University of the Pacific  
2019

This study was undertaken to explore and understand the attitudes and beliefs of audiology students about Deaf and Hard of Hearing people. The problem of practice was that some audiologists continue to advise parents not to sign with their Deaf or Hard of Hearing children. This problem was studied using the conceptual framework of General Systems Theory, looking at the problem through the lens of Critical Disability Theory, to determine if audiology students view Deaf and Hard of Hearing people from a medical model or from a social/cultural model. Using a qualitative case study methodology, I interviewed six first-year doctor of audiology (AuD) students at a university on the west coast of the United States to delve deeply into their attitudes and beliefs about Deaf and Hard of Hearing people.

This study found that these audiology students had overall social/cultural attitudes about Deaf people on the Attitudes to Deafness Scale. Yet, in case-study interviews, which provided a more in-depth look at the views of the students, the terminology the students used demonstrated some institutionalized audist attitudes and beliefs. Every student showed a mixture of medical and social/cultural beliefs. The students made a distinction between the words “Deaf” and “Hard of Hearing.” All the students believed that parents of Deaf children should be offered “communication options” – (signed or spoken language). The four students who had studied



American Sign Language (ASL) and Deaf culture were more open to the use of ASL. The two students who had the lowest scores on the Attitudes to Deafness Scale had no experience or background in ASL and demonstrated a preference for amplification technology and spoken language. The students believed that Hard of Hearing children should be raised with spoken language only. The students had a positive attitude about ASL but demonstrated a preference for spoken language. The audiology students understood their role in the medical system, but did not yet understand their part in the Deaf education system. They believed that parent-to-parent support is important but did not understand how audiologists might collaborate with the Deaf community and with teachers of the Deaf as families journey through the process of raising Deaf and Hard of Hearing children.

## TABLE OF CONTENTS

LIST OF TABLES .....	11
LIST OF FIGURES .....	12
CHAPTER	
1. Introduction .....	13
Background .....	14
Research Problem.....	15
Purpose of the Study.....	17
Research Question.....	17
The Significance of This Research.....	18
Conceptual Framework .....	19
Description of the Study.....	24
Delimitations .....	24
Summary .....	25
Definition of Terms .....	27
2. Review of the Literature.....	29
A History of Deaf Education in the United States .....	31
The Risks and Benefits of Sign Language .....	40
Attitudes About People Who Are Deaf.....	45
Measuring Attitudes Towards Deaf People.....	61
Conclusion.....	64
3. Methodology .....	66

Research Design .....	66
Reliability and Validity .....	81
Trustworthiness .....	82
Threats to Validity .....	83
Limitations .....	84
Ethical Considerations .....	84
Conclusion .....	85
4. Findings .....	87
Attitudes to Deafness Scale .....	88
Interviews .....	91
Analysis .....	95
Artifacts .....	129
Limitations of the Study .....	134
Summary .....	134
5. Summary, Conclusions, and Recommendations .....	137
Summary .....	137
Conclusions .....	145
Recommendations .....	156
Researcher's Final Thoughts .....	160
REFERENCES .....	162
APPENDICES	
A. ATTITUDES TO DEAFNESS SCALE .....	179
B. INTERVIEW PROTOCOL .....	182

C.	INFORMED CONSENT FOR STUDY PARTICIPANTS .....	184
D.	INFORMED CONSENT FOR ATTITUDES TO DEAFNESS .....	186
E.	CONFIDENTIALITY AGREEMENT .....	187
F.	SPEECH SOUNDS AUDIOGRAM .....	188

## LIST OF TABLES

## Table

1. Critical Disability Theory: Implications for Deaf and Hard of Hearing  
Education .....51
2. Attitudes to Deafness Scale Scores.....90

## LIST OF FIGURES

## Figure

1. Deaf and Hard of Hearing Educational System.....47
2. Berry's Model .....52

## Chapter 1: Introduction

As long as we have deaf people on earth, we will have signs . . . It is my hope that we will all love and guard our beautiful sign language as the noblest gift God has given to deaf people. (Veditz, 1913, para. 12)

I took my first sign language class at American River College in Sacramento during the summer of 1973. My teacher, Bill White, was a college-educated Deaf man. He introduced me to the Deaf world. He took me to Deaf events and he introduced me to his Deaf friends. I fell in love with the language and culture of Deaf people, and decided I wanted to become a teacher of Deaf and Hard of Hearing children. I began my teacher training program at California State University, Fresno, in 1974. The program did a careful job of balancing clinical information with classes in American Sign Language (ASL). We did our first semester of practice teaching in a mainstream Deaf and Hard of Hearing program. Deaf and Hard of Hearing students were on a campus with hearing students and attended some classes with hearing students, with appropriate support services. We did our second semester of practice teaching at the California School for the Deaf, where many of the teachers were ASL/English bilingual/bicultural adults. I learned a great deal in the program and will always be grateful for the training I received there.

But when I began teaching in 1977, teachers and children were required to use Signing Exact English (S.E.E.), not ASL. All children were required to wear powerful hearing aids, even if those hearing aids did not benefit them. All children were required to use their voices at all times, even if their speech was unintelligible. There were no Deaf people on the staff, because of the concern that a Deaf person could not be a good speech model for Deaf and Hard of Hearing students. The disconnect between the beautiful culture and language I had been introduced to by Bill White and the clinical nature of educational programs for Deaf and Hard of Hearing students was disconcerting to me then, and it is still disconcerting to me.

Professionals in the field of Deaf and Hard of Hearing education have argued since the 1800s about whether Deaf and Hard of Hearing children should be allowed to use sign language or whether they should learn only spoken language. This argument is often called the “100 Years War” but it has been going on much longer than 100 years (Safford & Safford, 2006). To better understand where this argument came from, it is important to know something about the history of Deaf and Hard of Hearing education in the United States.

### **Background**

The first school for the Deaf in the United States opened in Hartford, Connecticut in 1817 (Gannon & Butler, 1981; Marschark, Lang, & Albertini, 2002). The first teacher at that school was Laurent Clerc, a Deaf man from France, who used French Sign Language as the language of instruction, while teaching the Deaf students to read and write in English. Students educated at this school moved to other states and opened other schools for the Deaf. During these years, instruction for Deaf and Hard of Hearing students was through sign language, and the students were taught English as a written language.

In 1864, the first oral (now called Listening and Spoken Language) school for Deaf and Hard of Hearing students in the United States was opened (Gannon & Butler, 1981). At this school, students were not allowed to use sign language; they were required to use only spoken English. In 1880, at the International Congress on Deaf Education in Milan, Italy, the members of the Congress voted that all schools for the Deaf in the world should ban sign language and use only oral methods to teach Deaf and Hard of Hearing students (Traynor, 2016). The vote of the International Congress had no legal authority, but all schools for the Deaf and Hard of Hearing in the United States, except for Gallaudet College in Washington, DC, converted to oral education (Gannon & Butler, 1981).



The National Association of the Deaf (NAD) was founded in 1880, in direct response to the Milan Edict, with the express purpose of preserving the language of signs (Gannon & Butler, 1981; Lane, 1992). In 1910, as soon as motion picture technology was invented, the NAD began a project of filming Deaf adults telling stories in sign language (National Association of the Deaf [NAD], n.d.b). The NAD wanted the movies of Deaf people telling stories in sign language to show to Deaf and Hard of Hearing children in the future, because the NAD was fearful that sign language would disappear. Those films are still in the library at Gallaudet University in Washington, D.C. (Gannon & Butler, 1981).

Thus, began the debate between the proponents of sign language versus the proponents of spoken language in the United States. The details of the 100 Years War are explained in more detail in Chapter 2. The “war” continues to this day, and may, in fact, be growing in intensity.

### **Research Problem**

Current research demonstrates that sign language supports and enhances the development of spoken language and cognition (Acredolo & Goodwyn, 2000; Archbold & Mayer, 2012; Davidson, Lillo-Martin, & Chen Pichler, 2013; Gale, 2010; Marschark & Swanick, 2010; Petitto et al., 2000). However, some audiologists, speech pathologists, and educators of Deaf and Hard of Hearing students have not incorporated this research into their approach with parents of Deaf and Hard of Hearing children (Christiansen & Leigh, 2002). Some practitioners may be unaware of the research; others may not believe the research. Sometimes, professionals warn parents not to use sign language, telling them their child will be confused, delayed, or not learn to speak at all if they sign (Christiansen & Leigh, 2002; Geers, Mitchell, Warner-Czyz, Wang, & Eisenberg, 2017; Mindel & Vernon, 1971).

More than 90% of Deaf and Hard of Hearing children are born to hearing parents (Flexer, 2015; Mitchell & Karchmer, 2002). With the advent of newborn hearing screening programs in the United States, most parents find out their baby is Deaf or Hard of Hearing before the baby is six months old (National Institute of Health [NIH], 2010b). The parents must then decide how to make language accessible to their infant who cannot hear. Basically, they must decide if they will raise their child to be bilingual and bicultural – to acculturate by learning both ASL and spoken and/or written English – or if they will raise their child with only spoken English, with the goal that the child will assimilate into hearing society.

The professional who evaluates and identifies an infant as Deaf or Hard of Hearing is the allied health professional known as an audiologist. Because audiology is an allied health profession, the audiologists' Scopes of Practice (American Academy of Audiology [AAA], 2004; American Speech-Language-Hearing Association [ASHA], 2018) reflect a medical perspective about people who are Deaf or Hard of Hearing. Devlin and Pothier (2006) explain the goals of the medical perspective as the prevention, cure, treatment, or rehabilitation of disability. In its Scope of Practice, the American Academy of Audiology (2004) defines an audiologist as a person who is uniquely qualified to provide “services related to the prevention of hearing loss,” as well as “the treatment of persons with impairment of auditory and vestibular function” (para. 5). According to the audiologists' Scope of Practice, “the audiologist provides counseling regarding the effects of hearing loss on communication and psycho-social status in personal, social, and vocational arenas” (para. 16).

As the person who assesses and first identifies a child as Deaf or Hard of Hearing, the audiologist is the first professional in the system of Deaf and Hard of Hearing education with whom the parents come into contact. The parents rely heavily on the information and

recommendations provided by the audiologist (Li, Bain, & Steinberg, 2003). If the audiologist recommends that the parents use both ASL and spoken English, hearing parents are likely to follow that recommendation.

Consequently, this study focused on the attitudes and beliefs held by audiology students about Deaf and Hard of Hearing people, and whether those audiology students will recommend sign language use to parents of newly identified Deaf and Hard of Hearing infants. I examined the beliefs of audiology students, rather than working audiologists, to study the beliefs of beginning audiologists, who did not yet have firmly established professional opinions.

In searching the literature, I found research about the attitudes and beliefs of various groups of people about Deaf and Hard of Hearing people. Some of those groups included college students, medical students, social workers, nurses, and even Deaf and Hard of Hearing people themselves. I also found research that explored how Deaf people feel about audiologists. However, a search of the literature revealed very little research that discusses the attitudes or beliefs of audiologists about people who are Deaf or Hard of Hearing, or about why a person would choose audiology as a career. This study aims to close that research gap.

### **Purpose of the Study**

The purpose of this study was to explore and understand the cultural attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing.

### **Research Question**

The following qualitative research question was explored in this study: What are the attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing?

A sub-question that was explored is the following: What are the attitudes and beliefs of audiology students about sign language?

A second sub-question emerged from the data collected during the study. That sub-question is the following: What are the attitudes and beliefs of audiology students about their role in the educational system as it relates to Deaf and Hard of Hearing children and their families?

### **The Significance of This Research**

Research has demonstrated that sign language does not interfere with the development of spoken language, but that has not put an end to the 100 Years War in the field of Deaf education (Acredolo & Goodwyn, 2000; Archbold & Mayer, 2012; Davidson et al., 2013; Gale, 2010; Marschark & Swanick, 2010; Petitto et al., 2000). My perspective is that until the underlying, institutionalized cultural attitudes and beliefs behind the arguments are brought out, acknowledged, and openly discussed, the arguments will not end. Parents of newly identified Deaf and Hard of Hearing children are caught in the middle of the argument, which is perpetuated by professionals in the educational system. The results of this study could have an impact on the recommendations that practitioners (audiologists, speech pathologists, and teachers of Deaf and Hard of Hearing pupils) make to parents of newly identified Deaf and Hard of Hearing children. In other words, practitioners may be more likely to recommend sign language use to parents of Deaf and Hard of Hearing children. The results of this study could lead to further studies that result in some change in the way audiology students are trained. Ultimately, the results of this study could lead to an improvement in relationships between practitioners and people who are Deaf or Hard of Hearing. A powerful partnership could be forged between people who are Deaf or Hard of Hearing and professionals in the field of Deaf and Hard of Hearing education that could lead to important policy changes in Deaf and Hard of Hearing education.

## **Conceptual Framework**

In this study, the conceptual framework was General Systems Theory, first introduced in 1928 by Ludwig von Bertalanffy (Weckowicz, 1989). In General Systems Theory, all systems are composed of elements that make up the whole system. In a well-organized system, all the elements share joint responsibility and common goals for the outputs of the system. General Systems Theory looks at dynamic social systems and considers the attitudes and beliefs of the human beings who make up the system. Feedback from the system has an impact on those attitudes and beliefs and can change attitudes and beliefs over time (Caine, 2004; Hayajneh, 2007; Lauffer, 2011; Weckowicz, 1989).

General Systems Theory in the field of education for Deaf and Hard of Hearing students is composed of several complex elements. The major professional elements of this system are the fields of audiology, speech-language-pathology, and education of Deaf and Hard of Hearing students, all of whom have input into the education of Deaf and Hard of Hearing children. Other elements that have inputs into the system of Deaf and Hard of Hearing education include physicians, parent support organizations, Deaf and Hard of Hearing role models, and society in general. The output in this system is the Deaf or Hard of Hearing student, who grows up to become a Deaf or Hard of Hearing adult. The field changes over time, based on input from the system, as will be explained further in Chapter 2.

General Systems Theory was viewed through the lens of Critical Disability Theory, which is intended to both explain the oppression of dominant cultures over subordinate cultures, and to be transformative – to provide an opportunity for those in power to introspect on and perhaps change their beliefs (Hosking, 2008). In this study, the dominant culture is the culture of hearing people; the subordinate culture is the culture of Deaf people. Critical Disability Theory

explores whether the culture of hearing people has been devised to maintain power over Deaf and Hard of Hearing people, and to oppress and marginalize people who are Deaf or Hard of Hearing. The word culture, in this paper, is defined as “a set of practices and beliefs that is shared with members of a particular group and that distinguishes one group from others (Lindsay, Robins, & Terrell, 2003).

This study focused on one element of the system of Deaf and Hard of Hearing education, the field of audiology. Audiology was chosen for this study because audiologists are the professionals who first identify infants as Deaf or Hard of Hearing, and they are the first professionals in the system with whom the parents interact. For this reason, the field of audiology was chosen as a place at which to begin an exploration of the system of Deaf and Hard of Hearing education. The study explored the attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing, by administering the Attitudes to Deafness Scale, and by interviewing chosen audiology students to further examine their beliefs and attitudes about Deaf and Hard of Hearing people.

The conceptual framework for this study assumes that a cultural barrier exists between the proponents of spoken language education and the proponents of ASL/English bilingualism. Most professionals in the field of Deaf and Hard of Hearing education are hearing and, thus, have the perspective of the hearing culture. In general, some hearing people have a cultural belief called audism, that it is better to be hearing than to be Deaf or Hard of Hearing (Lane, 1992; Novic, 2017). A common view in the Deaf community, on the other hand, is that Deaf people are not disabled; rather, they form a cultural and linguistic minority group within the larger hearing society. Many Deaf and Hard of Hearing people seek acceptance as equal to hearing people, and acculturation or integration as equals into hearing society. The conceptual

framework of this study is based on my belief that it is the deep, institutionalized, and subconscious cultural attitudes and beliefs of some professionals about Deaf and Hard of Hearing people that prevent them from accepting the research demonstrating the benefits of ASL/English bilingualism for Deaf and Hard of Hearing children and make it difficult, if not impossible, to accept the research that supports the benefits of ASL.

To help clarify this conceptual framework, the history of the divisiveness of Deaf and Hard of Hearing education was further researched and discussed. It is essential for the reader to have some understanding of the long-standing nature of the divide, the intensity of the division that still exists, and how parents are caught in the middle of it. Understanding the history of Deaf and Hard of Hearing education is foundational to understanding the divide that continues to exist to this day.

Secondly, more research that demonstrates the neurological foundation of language, the impacts of language deprivation, and the impact of signed language on the development of cognition and spoken language in both hearing and Deaf and Hard of Hearing children was explored. It is essential for the readers to have some understanding of how the brain processes language regardless of whether it is signed or spoken, the impact of language deprivation when a child does not have complete access to language, and the positive effects of using sign language with young children. Understanding the research about the neurological foundations of language, the importance of language development, and the benefits of sign language use can clarify the importance of using sign language for all children.

Third, the social/cultural differences between the Deaf culture and the larger hearing culture were further studied and explained. This is a crucial aspect for audiologists, the participants in this study, to explore and introspect on. Learning about the Deaf culture and

about audism and examining their own cultural attitudes and beliefs about Deaf people can clarify for audiology students how to advise parents of newly identified Deaf and Hard of Hearing children and may change the attitudes and beliefs they have about Deaf and Hard of Hearing people.

**Researcher bias.** I have worked in the field of Deaf and Hard of Hearing education for more than 40 years. I have been a teacher of Deaf and Hard of Hearing students of all ages, infant through high school. I have completed an interpreter preparation program. I have been a Special Education principal. I have taught an introductory Deaf education course at the community college level and supervised practicing teachers for a California State University. From 1998 until 2017, I was the Deaf and Hard of Hearing Programs Consultant for the California Department of Education. For all this time, I have been deeply disturbed by the divisiveness in the system of education for Deaf and Hard of Hearing students.

I do not believe there is a place for audism (the belief that hearing people are superior to Deaf and Hard of Hearing people) amongst the professionals who work with Deaf and Hard of Hearing children and their parents. My bias is that many of the professionals in Deaf and Hard of Hearing education, including audiologists, speech pathologists, and teachers of the Deaf and Hard of Hearing, are audists, perhaps subconsciously.

I do not believe that all audiologists are audists; nor do I believe that audiologists are the only professionals in the field of Deaf and Hard of Hearing education with audist beliefs. I chose to focus this study on the field of audiology, because audiologists are the first professionals with whom parents of Deaf and Hard of Hearing infants come into contact. I have had experiences that have caused me to believe that some audiologists have audist beliefs. The following are a few examples of those experiences:



- At a national conference, I attended a session that dealt with compassionate care in audiology. Presenting were parents of a recently identified nine-month old and their audiologist. The parents told the story of how their audiologist was crying as she informed them that their daughter was Deaf, so they knew it was devastating to be Deaf.
- A panel of parents at another national conference were discussing their experiences. All the parents had chosen the Listening and Spoken Language (LSL) approach and did not use ASL. When an audience member asked them if they had been told about other language opportunities, they said yes, but the audiologists had told them to raise their children orally and not to use sign language.
- A young Deaf woman at my place of work at the California Department of Education informed me that her newborn daughter had been identified as Deaf. She told me the audiologist had recommended that she enroll her daughter in an oral (LSL) program and not use sign language, even though the Deaf mother was a signer. When I told two other Deaf colleagues this story, they told me they had the same experience when their child was identified as Deaf.
- Two young hearing parents told me their audiologists had not specifically told them not to use sign language, but they did tell them that they did not need to learn sign language. One parent has raised her two Hard of Hearing children successfully without sign language; the other parent's daughter is now dependent on signs, and the parents have regrets that they did not begin to use sign language earlier.
- One parent told me she had learned sign language in college, and when she had an infant identified with unilateral hearing, she wanted to raise her daughter bilingually with ASL and spoken English. Her audiologist told her that ASL would harm her child's speech and language development. She told the mother her daughter would not learn to read past a third-grade level, would be socially ostracized, and would drop out of school if the mother used sign language with her child.

Although I was not able to find peer reviewed research on the attitudes of audiologists, it seems clear that in some cases, bias has occurred. I hope the results of this study will begin to cause the audiology students involved in the study to begin to reflect on their attitudes and beliefs about people who are Deaf or Hard of Hearing. Ultimately, I hope the study can be replicated with audiology students at other universities, with audiologists in the field, and with other professionals in the field of Deaf and Hard of Hearing education. Improving the relationship between Deaf and Hard of Hearing people and the professionals who serve them can

potentially result in less tension between audiologists and the Deaf community. As a result of this and future studies, I hope that audiologists and other professionals will provide more information about ASL and Deaf culture to hearing parents of newly identified Deaf and Hard of Hearing infants. It is possible that this and future studies can result in more audiologists respecting and recommending sign language, as well as spoken language, for Deaf and Hard of Hearing children. The ultimate goal of these studies is to improve educational and social outcomes for Deaf and Hard of Hearing children.

### **Description of the Study**

This study used a qualitative case study approach. Creswell (2015) defines qualitative research as a method that is used to explore, understand, and describe a particular situation—in this case, the attitudes and beliefs of audiology students about Deaf and Hard of Hearing people, and their attitudes and beliefs about sign language. Furthermore, Creswell (2015) defines a case study as research that provides an in-depth look at a particular situation within a bounded system. In this case, the bounded system is a cohort of 19 first-year audiology students at a university in the western United States. Qualitative data were collected through interviews with six students from the audiology program. These interviews provided in-depth information about the attitudes and beliefs of these audiology students. The study is explained in detail in Chapter 3.

### **Delimitations**

This study focused on a particular population—audiology students at a university on the west coast of the United States. The reason this group was chosen as study participants is because audiologists are typically the first professionals to inform parents that their child is Deaf or Hard of Hearing. Audiology students were chosen, rather than working clinical audiologists, because the study is dependent on having audiologists who do not yet have firmly developed

professional opinions. It is not known if the results of a study that involves only students at this particular university can be generalized to audiology students at other institutions, or to working audiologists in clinics or hospitals around the state or nation.

### **Summary**

Professionals in the field of Deaf and Hard of Hearing education have been arguing for more than 100 years about whether Deaf and Hard of Hearing children should learn spoken language only, or whether they should also learn sign language. Multiple research studies have demonstrated the benefits of using sign language with all children. Despite the research evidence that suggests that sign language supports and enhances the development of spoken language, professionals continue to argue about whether Deaf and Hard of Hearing children should sign.

Chapter 2 of this study provides a review of the literature that contributes to this study. Four streams of literature specifically contributed to this study. The first stream of literature provides more information about the history of the rift between proponents of the oral approach and the proponents of sign language in Deaf and Hard of Hearing education. A second stream of literature investigates research into the use of sign language with hearing children and with Deaf and Hard of Hearing children, and the risks and benefits of the use of sign language with all children. This stream includes research on the neurological basis of language. Third, research about audism and the role it has played in Deaf and Hard of Hearing education and in the Deaf community is provided. Last, research on the attitudes and beliefs of hearing people about Deaf and Hard of Hearing people, of Deaf people about hearing people, and of Deaf people about audiologists is explored.

Chapter 3 explains the qualitative research design and methodology for this study. The procedures for the study are explained. The participants and the site selection are further described. Methods and tools for data collection are provided, including the Attitudes to Deafness Scale, the in-depth semi-structured interviews of six students, and the artifacts that were chosen for analysis. An explanation of how the data was analyzed is provided. Trustworthiness, reliability and validity, and threats to the validity of the study are examined.

In Chapter 4, the findings of the study are described. The scores of the 19 students in this cohort of audiology students on the Attitudes to Deafness Scale are provided. The procedures for choosing six students to be interviewed are described in detail. The interview participants are described. To protect the confidentiality of the participants, each participant was assigned a gender-neutral pseudonym. Each interview was analyzed first using a “within-case” methodology, and then using a “cross-case” methodology. The “within-case” analysis provided a comprehensive look at each individual’s beliefs and attitudes, and whether those beliefs were medical or social/cultural. Then, the interviews were analyzed using a “cross-case” methodology, to discover themes that emerged from the interview transcripts. Additionally, five artifacts were analyzed, using the same qualitative methods. Three of the artifacts were articles that had been assigned to the students during their summer course in Deaf culture. Two of the artifacts were the Scopes of Practice of both the AAA (2004) and the ASHA (2018). In Chapter 5, I summarize the study and my conclusions about the interview data. I make seven recommendations for the audiology students and for the audiology program. Last, I make five recommendations for future research.

## **Definitions of Terms**

### *Acculturation*

Cultural modification of an individual, group, or people by adapting to or borrowing traits from another culture as a result of prolonged contact, while maintaining identification with the native culture (National Center for Cultural Competence, n.d.)

### *American Sign Language*

American Sign Language (ASL) is a visual language. With signing, the brain processes linguistic information through the eyes. The shape, placement, and movement of the hands, as well as facial expressions and body movements, all play important parts in conveying information (NAD, n.d.a)

### *Audism*

“Discrimination or prejudice against individuals who are deaf or hard of hearing”  
(Audism, n.d., para. 1).

### *Assimilation*

To assume the cultural traditions of a given people or group; that is, to blend in and become like the given people or group (National Center for Cultural Competence, n.d.).

### *Auditory deprivation*

A condition that occurs in individuals suffering from hearing loss where their brain loses the ability to interpret words due to a lack of stimulation over an extended period of time (Page, 2014).

### *Bilingual education*

An approach to the education of Deaf children which uses both the sign language of the Deaf community and the written/spoken language of the hearing community (Gregory, 1998)

*Culture*

A set of practices and beliefs that is shared with members of a particular group and that distinguishes one group from others (Lindsey et al., 2003).

*Deaf*

A hearing level that is so severe or profound that it impedes the processing of spoken linguistic information through hearing, and adversely affects educational performance (Individuals with Disabilities Education Act, 2004).

*Hard of Hearing*

A reduced level of hearing, whether permanent or fluctuating, that adversely affects a child's academic performance, but is not included under the definition of deafness (Individuals with Disabilities Education Act, 2004).

*Language deprivation*

A condition that occurs when there is a lack of full access to a natural language during the critical period of language acquisition (Hall, 2017).

*Oral education*

An approach that teaches a Deaf child to use spoken language, using some visual cues, but without the use of sign language (Stone, 1997).

*Signing Exact English (S.E.E.)*

A sign system that matches signs with the English language (Gustason, Pfetzling, & Zawolkow, 1972).

## Chapter 2: Review of the Literature

The field of Deaf and Hard of Hearing education has long been divided between those professionals who support teaching Deaf and Hard of Hearing children to be bilingual and bicultural, learning the dual languages of ASL and English, and those professionals who advocate for only spoken language (Gannon & Butler, 1981; Humphries et al., 2013; Jacobs, 1989; Lane, 1992). In the bilingual/bicultural approach, Deaf and Hard of Hearing children in the United States are taught both ASL and English. Deaf and Hard of Hearing children and their parents are introduced to the customs and values of Deaf culture. Children are raised to be proud of their heritage as Deaf people. At the same time, they are taught English, as well as all the skills they will need to acculturate and to be successful within the larger hearing culture (Baker & Baker, 1997).

The spoken language only philosophy is often called oral education or Listening and Spoken Language (LSL). In this approach, children are taught to make the best possible use of their residual hearing, and to speak as clearly as possible. Deaf and Hard of Hearing children are not taught sign language. Deaf and Hard of Hearing children are raised to be as much like hearing people as possible, and to assimilate, or blend, into hearing society (Harrison & Hutsell, n.d.; Stone, 1997).

The purpose of this chapter is to review the literature that explains the disconnect and divisiveness between the proponents of the bilingual/bicultural approach and the proponents of LSL for Deaf and Hard of Hearing children. This chapter begins with a review of historical information about Deaf and Hard of Hearing education in America, because history explains how the rift between bilingual/bicultural proponents and LSL proponents began, developed over time, and continues to this day. Next, this literature review discusses research about the risks and

benefits of the two approaches to Deaf and Hard of Hearing education, including research about the neurological basis of language. This review then highlights research that introduces the concept of “audism,” the “discrimination or prejudice against individuals who are deaf or hard of hearing” (Audism, n.d., para. 1). The conceptual framework of General Systems Theory, looking through a lens of Critical Disability Theory, is explained. Finally, research about the attitudes of hearing people about Deaf and Hard of Hearing people is reviewed.

The problem of practice is that many audiologists do not recommend sign language use to the parents of newly identified Deaf and Hard of Hearing infants (Geers et al., 2017; Tyler, 1993). This problem may be rooted in the historical ideological rift between the proponents of oral education and the proponents of bilingual education, even though modern research evidence shows that sign language supports and enhances the development of spoken language. It is important to explore and understand the social and cultural beliefs and attitudes that audiology students have about people who are Deaf or Hard of Hearing, as well as their attitudes and beliefs about sign language.

This research study poses the following qualitative research question, which is interpretive in nature – What are the attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing? A sub-question of the main research question is – What are the attitudes and beliefs of audiology students about sign language? A second sub-question that emerged from the research is – What are the attitudes and beliefs of audiology students about their role in the educational system as it relates to Deaf and Hard of Hearing children and their families?



## **A History of Deaf Education in the United States**

Professionals have argued since the 1800s about whether Deaf and Hard of Hearing children should be allowed to use sign language, or whether they should only learn to speak. This argument is often called the “100 Years War,” but it has been going on much longer than 100 years (Gannon & Butler, 1981). Although the argument began as an ideological disagreement about how to educate Deaf and Hard of Hearing children, modern research, as shall be discussed later in this chapter, has made the argument unnecessary. Yet, the argument persists today. To better understand where this argument came from, it is important to know something about the history of Deaf and Hard of Hearing education in our country.

**The Golden Age.** The first school for the Deaf and Hard of Hearing in the United States opened in Hartford, Connecticut, in 1817. A wealthy man named Mason Cogswell had a Deaf daughter named Alice. Cogswell hired a young preacher, Thomas Gallaudet, to go to Europe, learn how to teach Deaf children, and come back and start a school for the Deaf. When Gallaudet returned, he brought a Deaf teacher from France, Laurent Clerc, who used French Sign Language as the language of instruction at this school, but taught students to read and write in English. Students educated at this school moved to other states and opened other schools. During these years, instruction for Deaf and Hard of Hearing students was through sign language, and English was taught as a written language. These years are often referred to as “The Golden Age” of Deaf education, because during this time, schools were operated by people who were Deaf themselves (Gannon & Butler, 1981; Lane, 1992).

**The Milan Edict.** In 1864, the first oral (spoken language) school for Deaf and Hard of Hearing students in the United States was opened. At this school, students were not allowed to use sign; they were required to use only spoken English (Gannon & Butler, 1981). In 1880, at

the International Congress on Deaf Education in Milan, Italy, the members of the Congress voted that all schools for Deaf students in the world should ban sign language and use only oral methods. The International Congress is a professional organization, and its decisions have no legal authority. Regardless, teachers of the Deaf around the world felt bound by the vote taken at the meeting of the Congress. According to the National Institute for Cognitive Sciences and Technologies (2015), the following resolution, which is known in Deaf and Hard of Hearing education as The Milan Edict (Traynor, 2016), was agreed to by all the congressional delegates, except for the four delegates from the United States:

The Congress, considering the incontestable superiority of articulation over signs in restoring the deaf-mute to society and giving him a fuller knowledge of language, declares that the oral method should be preferred to that of signs in the education and instruction of deaf-mutes. The Congress, considering that the simultaneous use of speech and signs has the disadvantage of injuring articulation and lip-reading and the precision of ideas, declares that the pure oral method should be preferred. (Traynor, 2016, para. 7)

Although the four representatives from the United States voted against the ban on sign language, they felt compelled to follow the international vote. Although the vote of the Congress had no legal authority, all schools for Deaf and Hard of Hearing students in the United States, except for Gallaudet College in Washington, DC, converted to oral education. Deaf teachers were fired, because they could not be spoken language models for Deaf students (Gannon & Butler, 1981). Alexander Graham Bell, who is best known as the inventor of the telephone, was a proponent of the oral method of Deaf and Hard of Hearing education. In *Upon the Formation of a Deaf Variety of the Human Race* (1883), he proposed that residential schools for Deaf students be abolished, and that Deaf people be discouraged from marrying each other, believing that was how genetic deafness could be eliminated.

**The National Association of the Deaf.** In 1880, the NAD was founded by Deaf leaders, because of their strong belief in the right of Deaf and Hard of Hearing people to use sign language and to be involved in issues that impacted them (NAD, n.d.b). In 1907, NAD President George Veditz said of Alexander Graham Bell, “he comes in the guise of a friend, and therefore, (he is) the most to be feared enemy of the American deaf, past or present” (Newman, 2006, p. 96). In 1910, as soon as motion picture technology was invented, the NAD began a project of filming Deaf adults telling stories in sign language. The NAD was fearful that sign language would disappear (NAD, n.d.b). Because there is no written form of ASL, Deaf culture is passed on from generation to generation through sign language. Eliminating ASL would mean the elimination of Deaf culture, as well as the elimination of the language, just as had happened with many native American cultures in the United States (Library of Congress, n.d.). The films of Deaf adults telling stories in sign language are still available in the library at Gallaudet University in Washington, DC (NAD, n.d.b). Thus, the ongoing war between the proponents of oral education and the proponents of sign language began.

**The Babbidge Report.** In 1965, the United States Department of Health, Education & Welfare commissioned the Babbidge Report to investigate the academic achievement of Deaf students in the United States (Babbidge and others, 1965). The report stated the following:

The programs of education for the deaf, by and large, are not succeeding. The test performance of deaf students at all grade levels is disappointingly low. Despite sincere and determined efforts by students and teachers alike, the achievement of most deaf students remains markedly inferior to that of hearing students. (p. 25)

The report blamed the poor academic performance of Deaf students on low expectations and poor curriculum and instruction. However, the report did not blame the failure of the system

on oral education. The recommendation of the report was that oral education continue as the preferred method of education for Deaf and Hard of Hearing students.

**Total communication.** In reaction to the Babbidge Report, there was an angry outcry from the Deaf community to allow Deaf and Hard of Hearing children to use sign language (Holcomb, 2010; Jacobs, 1989). Even though the report did not blame the academic failure of Deaf and Hard of Hearing children on the oral education system, many Deaf people did. In the 1960s, Roy Holcomb, a Deaf man and an educator, coined the term “total communication” or “total approach.” While Holcomb never published a definition of the terms, his son did publish a definition, based on undated personal papers left by his father. Tom Holcomb (2010) described his father’s vision of total communication as a philosophy that would allow a child who is Deaf or Hard of Hearing to communicate in whatever way was most efficient for that child. In the total approach, “the communication method employed by teachers should be flexible and eclectic enough to meet the needs of their students” (p. 473).

In his book, *A Deaf Adult Speaks Out* (1989), Leo Jacobs also calls for the use of total communication in Deaf and Hard of Hearing education. Jacobs says, “When the doctrine of total communication is followed, *every restraint is removed* from the communication media that are used by Deaf children” (p. 51). In his definition, Deaf and Hard of Hearing children may use any and every means of communication that is most comfortable for them.

Teachers of the Deaf and Hard of Hearing embraced the philosophy of total communication. However, putting the philosophy into practice was confusing. It was unclear how to communicate in a way that met the unique needs of each child. In its explanation of total communication, Hands & Voices, a national organization for parents of Deaf and Hard of Hearing children, explains that the flexibility that is at the core of the total communication

philosophy has sometimes resulted in an “anything goes” approach to Deaf and Hard of Hearing education (Hands & Voices, 2014). In many places, total communication evolved into simultaneous communication, a practice of using signs and speaking English at the same time (Hawkins & Brawner, 1997). Various formal signed English systems were developed. The most commonly adopted system was Signing Exact English, or the S.E.E. sign system (Gustason et al., 1972). Research by William Stokoe (1976) subsequently proved that ASL is a true language, but it had also shown that the semantics, syntax, morphology, and rules of pragmatics of ASL are different from spoken English. Educators were fearful that if ASL were used in classrooms, Deaf and Hard of Hearing children would not learn English. In S.E.E. and other signed English systems, ASL and some invented signs are used in English word order. Every English root word is signed, along with invented signs for English suffixes and prefixes. The idea is to make English visual, to make it easier for Deaf and Hard of Hearing children to learn English vocabulary, syntax, and morphology (Gustason et al., 1972).

**Commission on Education of the Deaf.** In 1988, the Commission on Education of the Deaf published *Toward Equality: A Report to the President and the Congress of the United States* (Bowe et al.). In the report, the Commission stated, “The present status of education for persons who are deaf in the United States, is unsatisfactory. Unacceptably so” (p. viii). The Commission recognized ASL as a true language and recommended that ASL be used in all schools and programs for Deaf and Hard of Hearing children. The Commission also recognized the importance of Deaf culture and encouraged school programs to include Deaf adults in programming, to ensure that Deaf and Hard of Hearing children learn about their heritage as Deaf people. Additionally, the Commission recognized the Deaf community as a marginalized minority group and called upon schools and programs for Deaf and Hard of Hearing students to

improve their understanding of Deaf culture and of the language learning process. After the publication of this report, Deaf leaders began calling for bilingual education for Deaf and Hard of Hearing children – a practice defined at that time as teaching Deaf and Hard of Hearing children ASL as a first language and written English as a second language when the children reached school age (Bernstein & Finneran, 1983; Wilbur, 2000).

**Cochlear implants.** In 1990, the federal Food and Drug Administration (FDA) approved a new medical technology, cochlear implantation (CI), for Deaf children 12 years old and above (National Institute of Health [NIH], 2010a). A CI is very different from a traditional hearing aid, which amplifies sound acoustically so that people with damaged inner ears can detect the sound but may not be able to understand what they are hearing. A CI bypasses damaged portions of the inner ear, and directly stimulates the auditory nerve electronically. During CI surgery, electrodes are implanted in the cochlea (inner ear) of a Deaf person, providing an electronic stimulation of sound for a Deaf person who has irreparable damage to the inner ear (NIH, 2017). In 2017, the AAA established a task force of seven professionals to review and report on 16 research studies about CIs. The task force concluded that for children who are too Deaf to benefit from traditional hearing aids, CIs do result in improved auditory perception and discrimination and improved speech production (Osberger et al., 2017). Thus, CIs gave new hope that children who are born Deaf can become oral. The task force did caution, however, that not all children who receive CIs have improved auditory and speech outcomes, and that audiologists are not yet able to predict which children will and will not have those improved outcomes (Osberger et al., 2017). CIs are now approved by the FDA for children as young as 12 months of age (NIH, 2010a).

So, just as the Commission on Education of the Deaf (Bowe et al., 1988) gave impetus to the promoters of ASL, bilingual education, and the importance of the Deaf “voice” in Deaf and Hard of Hearing education, the approval of the CI by the FDA in 1990 gave strength to the promoters of the oral method of Deaf and Hard of Hearing education. There are arguments for using ASL, even if a child has a CI (Conference of Educational Administrators of Schools and Programs for the Deaf [CEASD], n.d.; Humphries et al., 2013; NAD, n.d.c; Mellon et al., 2015). Since research has demonstrated that the use of sign language does not prevent the development of speech, providing all Deaf and Hard of Hearing children with ASL from the very beginning will ensure that children who do not develop spoken language skills will have a usable language (Archbold & Mayer, 2012; Humphries & Humphries, 2010).

**Deaf Children’s Bill of Rights.** In 1994, Section 56000.5 was added to the California Education Code (FindLaw, n.d.). In this section, commonly known as the Deaf Children’s Bill of Rights (DCBR), the California State Legislature recognized the essential need for children who are Deaf or Hard of Hearing to receive direct instruction from teachers and other staff who are knowledgeable about their unique needs and who can communicate directly with them, and to be educated in a placement with a sufficient number of language mode peers. The DCBR was authored by Assemblymember Delaine Eastin and sponsored by the Deaf Education Coalition, a group of 21 organizations that supported the rights and needs of Deaf and Hard of Hearing children, regardless of whether they use signed or spoken language, or both. The language of the DCBR is intent language; regardless, the DCBR has been cited by adjudicators in deciding due process cases.

**Special Factors section of the Individuals with Disabilities Education Act.** In 1975, the federal Education for All Handicapped Children act was passed, requiring that all children

with disabilities have a right to a Free and Appropriate Public Education (FAPE) in the Least Restrictive Environment (LRE). The term LRE was widely interpreted to mean the general education classroom. The law was reauthorized in 1990 and renamed the Individuals with Disabilities Education Act (IDEA). When the IDEA was again reauthorized in 2004, Section 300.324, Consideration of Special Factors, was added to the federal law, specifically to assist local school teams to understand LRE as it relates to Deaf and Hard of Hearing children. Part (iv) of the Special Factors section requires the Individualized Educational Program (IEP) team, in the case that a child is Deaf or Hard of Hearing, to consider the child's need for direct communication with peers and with staff, and for direct instruction in the child's language and communication mode.

**Newborn hearing screening.** In 1998, landmark research was published that showed that if children who are Deaf or Hard of Hearing are identified by three months of age and enrolled in appropriate early involvement programs by six months of age, they can acquire language skills, spoken and/or signed, at the same rate as their hearing peers (Moeller, 2000; Yoshinaga-Itano, Sedey, Coulter, & Mehl, 1998). This research, which showed that early identification and family involvement could prevent the academic failure that had long been the bane of Deaf and Hard of Hearing students, was the impetus behind a national movement to establish newborn hearing screening programs. The California Newborn Hearing Screening Program (NHSP) was established in 1998 by Assembly Bill 2780, requiring all California Children's Services authorized hospitals to offer screening to parents of all newborn infants. In 2006, the law was amended by Assembly Bill 2651 to require that all birthing facilities in California perform newborn hearing screening unless the parents object (National Center for Hearing Assessment and Management [NCHAM], n.d.). In Oregon, House Bill 3246 required



all hospitals and birthing centers with more than 200 births per year to perform newborn hearing screening unless the parents object (NCHAM, n.d.). Washington state does not have state legislation requiring newborn hearing screening, but more than 60 hospitals, birthing centers, and midwives participate in voluntary newborn hearing screening programs (Washington State Department of Health, n.d.).

Newborn hearing screening offered great hope for children born Deaf or Hard of Hearing to acquire age appropriate language skills. Yet, newborn hearing screening programs have magnified the war between the proponents of oral education and the proponents of bilingual education. Parents tend to rely heavily on the recommendations of audiologists (Li et al., 2003), and if those audiologists recommend LSL and warn parents that sign language may deter spoken language development, parents tend to follow that route. The philosophy of LSL is widely promoted by the A.G. Bell Association. In this approach, sign language is not used, although natural gestures may be allowed. The goal is that Deaf and Hard of Hearing children will be fully included in general education classrooms (Harrison & Hutsell, n.d.). On the other hand, the advent of newborn hearing screening has also resulted in a growing number of professionals and Deaf community members calling for a new simultaneous or parallel bilingual approach—one that allows a Deaf or Hard of Hearing child to acquire ASL and spoken English at the same time (Humphries et al., 2013; Mellon et al., 2015; Petitto et al., 2000). Bilingualism is not the same as total communication. In bilingual programs, ASL and English are recognized as separate languages, just as any two spoken languages, with different lexicons and grammars; therefore, it is not possible to sign ASL and speak English at the same time. Both languages are taught, and both are considered of equal value (Baker & Baker, 1997).

## **The Risks and Benefits of Sign Language**

For many years, Deaf and Hard of Hearing educators, audiologists, and speech pathologists have told parents that if they sign, their Deaf or Hard of Hearing children will not learn to speak (Christiansen & Leigh, 2005; Geers et al., 2017). Yet, research does not support the common belief that sign language prevents the development of spoken language. The National Institute of Health commissioned a study, *Impact of Symbolic Gesturing on Early Language Development* (Acredolo & Goodwyn, 2000) to determine if sign language delayed spoken language. The research, involving 103 hearing children, showed that children whose parents signed to them spoke earlier than children whose parents did not sign. Additionally, the signing children showed an advantage in both expressive and receptive language skills. Consequently, many preschool programs for hearing children encourage sign language use, both at school and at home (Patterson & Thomas, 2010).

Research involving Deaf and Hard of Hearing children has repeatedly shown the same results (Archbold & Mayer, 2012; Davidson et al., 2013; Marschark & Swanwick, 2010; Petitto et al., 2000). Petitto et al. (2000) showed that Deaf and Hard of Hearing children who are exposed to both spoken and signed languages in early childhood often produce words and signs at almost the same time; this simultaneous production of words (signs) in two languages is similar to the production of spoken words in hearing bilingual children who are acquiring two spoken languages. Davidson et al. (2013) studied Deaf children who had CIs and also had Deaf signing parents. These children acquired spoken English skills at the same rate as hearing children. These authors concluded that natural sign language (ASL) did not slow down the development of spoken English for these children; additionally, because these children were exposed to ASL from birth, they did not suffer from language deprivation pre-implant.

Very recently, one study of elementary school aged children with CIs demonstrated that children who were raised orally showed superior spoken language to children who signed (Geers et al., 2017). The study did not, however, compare children raised orally to children raised bilingually with ASL and English; the study compared children raised orally to children who used any form of sign. The authors noted that most hearing parents used some form of signed English and simultaneous communication. The authors also noted that a CI did not guarantee that a child would acquire intelligible spoken English. In this study, 70% of the children with CIs and were educated without signs were reported to have intelligible speech three years post-implant, as opposed to 50% of the children whose parents used signs. Thirty percent (30%) of the children with CIs who were educated orally, without signs, did not acquire intelligible spoken language three years after implantation.

There is evidence that Deaf and Hard of Hearing children who use ASL acquire English literacy more easily and do better academically, even if they have CIs (Archbold & Mayer, 2012; Cummins, 2000). Cummins (2000) argued that ASL is a strong tool for thinking, problem solving, and other cognitive skills, and children with strong ASL skills read and write better than Deaf and Hard of Hearing children who do not know ASL, whether their parents are Deaf or hearing. He stated that there is no empirical evidence that ASL prevents or delays the development of spoken language and challenged those who made the claim that ASL impedes the development of speech to produce the studies to prove it. Archbold and Mayer (2012) showed that despite evidence that children with CIs receiving oral education demonstrated success in learning to read when they were young, those same children exhibited difficulties with literacy as they got older and the language in written passages became more complex. The

students also expressed that, as they got older, they had difficulty with the more complex curricula and with group work in class, and they needed sign language support at that time.

With CIs becoming standard of care in the United States, the face of Deaf and Hard of Hearing education is changing. CIs give children who are born Deaf a better chance of acquiring spoken language skills than they had in the past; at the same time, a CI does not guarantee that a child will acquire listening and spoken language skills (Archbold & Mayer, 2012; Geers et al., 2017; Humphries et al., 2013; Mellon et al., 2015). ASL does not prevent the development of spoken language and research shows that children who use ASL perform better academically.

Proponents of bilingualism believe that all children who are Deaf or Hard of Hearing should be taught ASL, even if they have CIs (CEASD, n.d.; Humphries et al., 2013; Mellon et al., 2015; NAD, n.d.c). Many Deaf children will receive CIs and may eventually acquire spoken language skills. Many of them may also show a preference for oral communication. But providing them with ASL from the very beginning will provide children who cannot hear exposure to language, will activate the language center of the brain before the child has access to sound, and will allow the child to choose his preferred language and mode of communication as he grows. Many young adults with CIs report that they are comfortable switching between ASL and spoken English, and that they view themselves as both Deaf and hearing. They are not only bilingual; they are bicultural (Archbold & Mayer, 2012; Humphries & Humphries, 2009).

**The neurological basis of language.** Some educators of Deaf and Hard of Hearing students, audiologists, and speech pathologists continue to tell parents of Deaf and Hard of Hearing children about the need to stimulate the “auditory” cortex of the brain. They warn parents not to sign, because their child will be confused, delayed, or not learn to speak at all (Christiansen & Leigh, 2005; Geers et al., 2017). The major organization that supports oral Deaf

education, the A.G. Bell Association, continues to promote spoken language only, or LSL, and discourages parents from signing (A.G. Bell, n.d.).

One well-known proponent of LSL is Carol Flexer, professor of audiology at Akron State University. In her presentation at the 2015 Early Hearing Detection and Intervention (EHDI) conference, Flexer noted that 95% of Deaf and Hard of Hearing children are born to hearing parents, who are of the hearing culture and who desire that their Deaf or Hard of Hearing children learn to listen and speak. Flexer noted that we do not hear with the ear. We hear with the brain, specifically the “auditory center” of the brain. She called the ear the “doorway” to the brain. The job of Deaf and Hard of Hearing education and parents of Deaf and Hard of Hearing children is to ensure that the doorway is accessible, by making sure that the Deaf or Hard of Hearing child is wearing a “doorway device” (i.e., a hearing aid or a CI) as much of the time as possible. If the doorway is made accessible, “we can grow a hearing brain.” On the other hand, if a child is not wearing a hearing device, no auditory information is reaching the brain, and the “auditory center” of the brain cannot develop (Flexer, 2015).

However, research has shown that signed languages and spoken languages are processed in the same portions of the brain. Specific portions of the left side of the brain, known as the Brodmann areas, are activated whenever a person receives or sends a spoken or signed message. The activation of the Brodmann areas of the brain when a person is using a signed language has been shown using Positive Emissions Topography (PET) scans (Petitto et al., 2000) and Magnetic Resonance Imaging (MRI) (Xu, Gannon, Emmory, Smith, & Braun, 2009). These studies have shown that, in fact, the Brodmann areas of the brain process linguistic information, whether it is spoken or signed (Nishimura et al., 1999; Petitto et al., 2000; Xu et al., 2009). This information is important, because it has put to rest the fear that the Brodmann areas of the brain

will atrophy and become useless if a child does not receive adequate auditory stimulation during the critical years for language development, from birth to three years of age, if the child is provided with signed language instead.

Common fears that children who are learning two languages at the same time (i.e., ASL and English) will be confused by bilingualism are also unfounded. Children growing up with two languages may mix languages, but they are not confused by the two languages (Cummins, 2000; Petitto et al., 2000). Children who are learning two spoken languages (i.e., French and English) can obviously speak only one language at a time; however, children who are learning a signed language and a spoken language, sometimes sign and speak simultaneously (Petitto et al., 2000). Regardless of whether a child is using two languages sequentially or simultaneously is irrelevant, however; the child is not confusing the languages.

Fears that bilingual children are linguistically delayed are also unfounded. Children who are learning two languages may have fewer vocabulary words in one or both languages than a child learning only one language, but when the words from the two languages are added together, bilingual children have more words than monolingual children (Petitto et al., 2000).

Other research studies have shown that bilingual children have superior cognitive abilities to monolingual children. Cummins (1976) provides numerous examples of studies that have shown that students who are bilingual do better on tests of academic skills and of cognition than do students who are monolingual, and they demonstrate greater cognitive flexibility, including the abilities to transfer conceptual knowledge, pragmatic skills, and phonological awareness from one language to the other. Bialystock, Craik, and Luk (2012) and Woumans and Duyck (2015) report that bilingual people show superiority on tests of executive functioning, including impulse inhibition, selection, switching tasks/transitions, sustaining attention, memory,

and information retrieval. The authors point to MRI studies that have shown that the co-activation required by users of two languages is processed in the frontal lobes of the brain, that are the same areas of the brain that are used for executive functioning tasks.

The history of Deaf and Hard of Hearing education has been, and continues to be, deeply divided between the proponents of oral education and the proponents of bilingual (ASL/English) education for children who are Deaf or Hard of Hearing. This literature review has shown that there is a preponderance of evidence to show that ASL does not delay or prevent the development of spoken language, that the use of ASL pre-implant can prevent language deprivation, and that children who use ASL have better academic skills than children who do not sign. To understand, then, why professionals in the field may continue to recommend against the use of sign language, requires a deeper look at the attitudes and beliefs that hearing people have about people who are Deaf or Hard of Hearing and about sign language.

### **Attitudes About People Who Are Deaf**

In this study, the problem of practice was examined through the conceptual framework of General Systems Theory (Caine, 2004; Hayajneh, 2007; Lauffer, 2011; Weckowicz, 1989), through the lens of Critical Theory (Merriam & Tisdell, 2016), with a particular emphasis on Critical Disability Theory (Asch, 2001; Fine & Asch, 1988; Hosking, 2008; Rocco, 2002; Rocco & Delgado, 2011). The purpose of this study was to explore and understand the underlying social and cultural beliefs and attitudes that audiology students have about Deaf and Hard of Hearing people. Those beliefs may lead some audiologists to continue to warn parents of Deaf and Hard of Hearing children not to sign, even though research supports the positive benefits of using sign language. The research study may uncover ways in which the culture of hearing people and the system of Deaf and Hard of Hearing education have been devised to maintain

power over Deaf and Hard of Hearing people, and to oppress and marginalize people who are Deaf or Hard of Hearing.

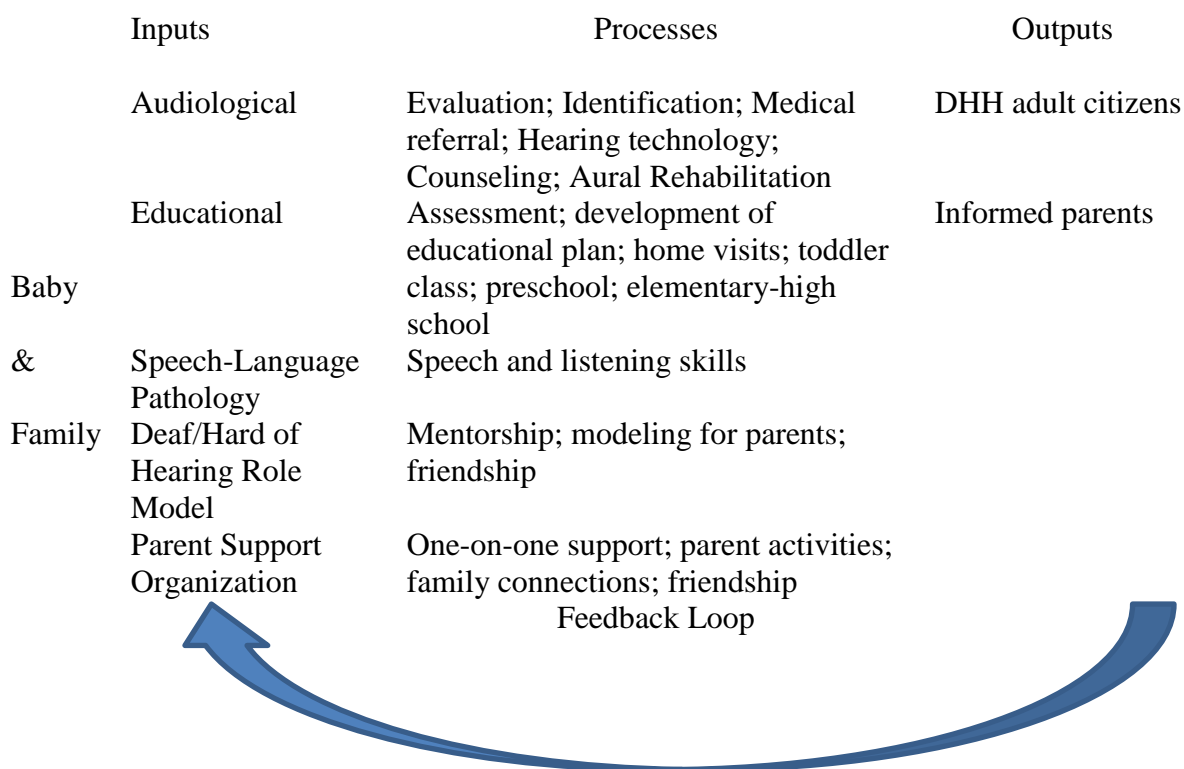
**Systems Theory.** General Systems Theory was first proposed by a biologist, Ludwig von Bertalanffy, who argued for a holistic view of living organisms (von Bertalanffy, 1968; Weckowicz, 1989). That is, that the whole organism is dependent upon the integration of its individual elements, which each has its own characteristics and functions. Systems theory can apply equally to a social system, in which the individual elements, or inputs, are interdependent, and share joint responsibility and common goals for the outputs (Lauffer, 2011). Social systems are dependent upon the interrelationships of the behavior and attitudes of the individual members of the social system (Lauffer, 2011). Systems tend to be synergistic; that is, the whole is greater than its individual parts (Caine, 2004; Weckowicz, 1989).

In the educational system for Deaf and Hard of Hearing children, three professional groups (audiologists, speech-language pathologists, and educators of Deaf and Hard of Hearing students) play equally important roles; each has an influence on parents of Deaf and Hard of Hearing infants, and on Deaf and Hard of Hearing children as they grow and develop. Deaf and Hard of Hearing mentors and parent support groups also play important roles in the system. These five elements create the inputs into the educational system. They share common goals through the processes of identification, assessment, and education—informed parents and the growth and development of healthy Deaf and Hard of Hearing citizens. As those Deaf and Hard of Hearing people and their parents, the outputs of this system, provide feedback to the system, the dynamic system responds, changes, and grows.

This study focused on one element or input—audiological—because the audiologist is the first professional with whom parents of Deaf and Hard of Hearing infants come into contact.



Parents tend to rely heavily on the recommendations of the audiologist (Li et al., 2003), so the recommendations made by the audiologist are extremely critical. The audiologist may set the stage for the parents' beliefs about Deaf and Hard of Hearing people in general, and about their own child in particular.



*Figure 1: Deaf and Hard of Hearing educational system.*

Derived from Hayajneh's (2007) model of the system within a hospital, Figure 1 demonstrates a model of the Deaf and Hard of Hearing educational system. In this model, input from audiologists, educators, speech-language pathologists, Deaf mentors, and parent support

organizations lead to the processes within the system that result in the system outputs of informed parents and, ultimately, Deaf and Hard of Hearing adult citizens.

**Critical Theory.** Research based on critical theory is based on power relationships – specifically the relationship of a powerful majority group (in this case, hearing society) over a minority group (in this case, the Deaf community). The researcher does not attempt to maintain a neutral position; the researcher’s stance is that the group in power discriminates against the minority group. The purpose of the research is to effect a change in the power relationship (Merriam & Tisdell, 2016).

**Critical Disability Theory.** Critical Disability Theory distinguishes the traditional medical model of disability from a newer social model of disability (Asch, 2001; Hosking, 2008; Rocco, 2002; Rocco & Delgado, 2011). In the medical model, disability is viewed as something to be prevented, cured, or treated. In the social model, disability is viewed as a social construct. In the Critical Disability Theory model, the environment disables the individual; if universal accommodations are in place, all individuals can navigate the environment (Hosking, 2008; Rocco, 2002; Rocco & Delgado, 2011). In the Critical Disability Theory model, the person with the disability should not have to blend in, or assimilate, with non-disabled society; rather, society at large should honor the diversity created by welcoming disabled individuals (Hosking, 2008).

Rocco (2002) contends that discrimination against disabled people is institutionalized; it is so common that it is invisible, and most non-disabled people are totally unaware of their discriminatory feelings. Thus, the discrimination against Deaf and Hard of Hearing people by the larger hearing society is institutionalized and invisible. Audiologists, and other hearing professionals in the field of Deaf and Hard of Hearing education, unknowingly discriminate against Deaf and Hard of Hearing people, and maintain hearing power over Deaf and Hard of

Hearing people. However, discriminatory attitudes and beliefs can be revealed by the words and phrases non-disabled people use when talking about people who are disabled (Hosking, 2008).

The goal of Critical Disability Theory is to stop the relationship of the power group (the non-disabled) over the disabled, and to give voice to the group of people who are disabled (Hosking, 2008).

Assimilation, mentioned above as a goal of the medical model, occurs when a nondominant group (in this case, the Deaf community) identifies with the dominant group. Individuals of the non-dominant group become members of the dominant group (in this case, the larger hearing community); they absorb the culture of the dominant group. Assimilation occurs when members of the nondominant group become like members of the dominant group and give up their identity as a separate culture. Assimilation always occurs in the direction of the dominant group (Teske & Nelson, 1974).

Teske and Nelson (1974) compare the process of assimilation with the process of acculturation. In acculturation, one group is dominant, but the degree of dominance may vary. Acculturation occurs when the two cultural groups have mutual respect for each other, and there is no forced acceptance of cultural ways imposed on either group (Teske & Nelson, 1974). Lauffer (2011), a systems theorist, says that some systems believe in acculturation, respecting and honoring the traditions and culture of minority groups. In Critical Disability Theory, acculturation of Deaf people would fit into the social model.

Benedict (2010) contends that for Deaf people, the social model should be called the social/cultural model. Deaf people have a unique language and culture, which separates them from other people in the disability community. Culturally Deaf people highly value their language, ASL, as well as their culture, which incorporates language, customs, storytelling, art,

and all other aspects of culture. Deaf people cherish both day schools and residential schools which are specifically for Deaf children. The NAD defines an appropriate educational placement for a Deaf or Hard of Hearing child as the placement in which the child has direct access to teachers and peers who are fluent in ASL.

This study focused on one element of the Deaf and Hard of Hearing education system – audiologists—looking through the lens of Critical Disability Theory. Table 1 shows the differences between the medical model and the social/cultural model for Deaf and Hard of Hearing children and the implications for Deaf and Hard of Hearing education. It is possible to believe that spoken language is the most natural way for people to communicate, and also believe that sign language is the most natural way for Deaf and Hard of Hearing people to communicate. These two beliefs are not mutually exclusive. Because there is ample research evidence that sign language use supports the development of spoken language, it is also possible to believe that every Deaf or Hard of Hearing child deserves the right to learn spoken language and also believe that every Deaf or Hard of Hearing child deserves the right to learn to sign. These two beliefs are also not mutually exclusive. People who believe that Deaf and Hard of Hearing people are disabled may also believe that Deaf people form a cultural and linguistic minority group, although they may not value the language and culture of Deaf people. However, the remaining three rows in the table illustrate beliefs that are mutually exclusive. It is not possible to believe that it is better to be hearing than to be Deaf or Hard of Hearing, and also believe that hearing people and Deaf people are equals. It is not possible to believe that the goal of Deaf and Hard of Hearing education is to teach Deaf and Hard of Hearing children to speak only, so that they can assimilate (blend into) hearing society, and also believe that the goal of Deaf education is to raise children to be bilingual and bicultural – to sign and speak, and to be

members of both the Deaf and hearing cultures. It is not possible to believe that a successful Deaf or Hard of Hearing adult uses only spoken language and assimilates into hearing society, and also believe that a successful Deaf adult uses both ASL and English and is comfortable in both Deaf and hearing societies.

Table 1

*Critical Disability Theory: Implications for Deaf and Hard of Hearing Education*

Medical Model	Social/Cultural Model (In this model, the term “Deaf” is inclusive of individuals with hearing levels from mild-profound)
Spoken language is the most natural way for human beings to communicate.	Sign language is the most natural way for Deaf people to communicate.
Every Deaf and Hard of Hearing child deserves the right to learn spoken language.	Every Deaf child deserves the right to use sign language.
Deaf and Hard of Hearing people are disabled.	Deaf people are not disabled. Deaf people form a linguistic and cultural minority group within the larger hearing society.
It is better to be hearing than to be Deaf or Hard of Hearing.	Deaf people are different than hearing people, but they are not “less than.” Deaf people and hearing people are equal.
The goal of Deaf and Hard of Hearing education is to teach Deaf and Hard of Hearing children to speak without using sign language, like hearing children do.	The goal of Deaf education is to teach Deaf children to use both sign and spoken language, and to learn about both Deaf and hearing cultures.
A successful Deaf or Hard of Hearing adult uses spoken language and assimilates into hearing society.	A successful Deaf adult knows both signed and spoken (written) language and is comfortable in both Deaf and hearing societies.

Deaf Websites (n.d.) actually proposes three models for Deaf and Hard of Hearing people—medical, social, and cultural. In the cultural model, people who are Deaf may value the language and culture of Deaf people to such an extent that they do not wish to be involved with the hearing culture at all. In other words, Benedict’s social/cultural model is proposed as two separate models.

Berry (1997) proposed a model with two important considerations: (a) to what extent does the nondominant culture wish to maintain its cultural identification and (b) to what extent does the nondominant group wish to be involved with the dominant culture? In Berry’s model, *assimilation* occurs when the nondominant group does not want to maintain its cultural identity but seeks interaction with the dominant culture (the medical model). *Integration* occurs when the nondominant group wishes to be involved with the dominant culture, while maintaining its own cultural identity (the social model). *Separation* occurs when the nondominant group maintains its cultural identity but does not seek involvement with the dominant group (the cultural model). Last, *marginalization* occurs when the nondominant group does not maintain its own identity and does not become involved with the dominant group. Figure 2 illustrates Berry’s model.

Does the Nondominant Group Value its Relationship with the Dominant Group?	Does the Nondominant Group Value Maintaining Cultural Identity?	
	YES	NO
YES	Integration	Assimilation
NO	Separation	Marginalization

Figure 2: Berry’s model.

The Deaf Acculturation Scale (DAS), developed by Maxwell-McCaw and Zea (2011), divides Deaf and Hard of Hearing people into these same four categories, although Maxwell-McCaw and Zea use different terminology. In the DAS, Berry's integration is called bicultural identification; assimilation is called hearing identification; separation is called Deaf identity; and marginalization is called marginal identity. This 58-item Likert-type scale survey was administered to 3,070 Deaf people across the United States. The results of this study showed 46.4% were in the category of Deaf identity (cultural model). Only 8.1% were in the hearing identity (medical model) category, and one percent were in the marginalized category. In other words, 90.9% of the Deaf people surveyed showed that they valued the maintenance of their Deaf cultural identity and can be classified as belonging to the social/cultural model.

The DAS was administered by Marschark, Zettler, and Dammeyer (2017) to 168 students at the Rochester Institute of Technology. Of those students, 63 were Deaf with no CIs, 56 were Deaf with CIs, and 49 were hearing. Like Maxwell-McCaw and Zea, the authors found that the majority of Deaf students valued maintenance of Deaf social/cultural identity; 70% of the Deaf students without CIs and 57% of the Deaf students with CIs identified as Deaf or bicultural. Conversely, 94% of the hearing students were categorized in the hearing identity.

The conceptual framework for this study assumes that a social and cultural barrier exists in the educational system between the proponents of LSL and the proponents of ASL/English bilingualism. Most audiologists are hearing and have the medical model perspective of the hearing culture. In general, hearing people have a cultural belief that it is better to be hearing than to be Deaf or Hard of Hearing (audism). A common view in the Deaf community, on the other hand, is that Deaf people are not disabled; they form a cultural and linguistic minority

group within the larger hearing society. Deaf people seek acceptance as equal to hearing people, and acculturation or integration as equals into hearing society.

The proponents of LSL for Deaf and Hard of Hearing children, such as the A.G. Bell Association, believe that spoken language is the most natural way for human beings to communicate; hence, they believe the goal of Deaf and Hard of Hearing education is to teach Deaf and Hard of Hearing children to speak and they do not promote the use of ASL (A.G. Bell, n.d.). Conversely, proponents of ASL/English bilingualism, such as the NAD and the World Federation of the Deaf (WFD), believe that, for children who cannot hear, sign language is the most natural way to communicate, so the goal of Deaf and Hard of Hearing education is to teach children to be bilingual in ASL and English (NAD, n.d.c; WFD, n.d.).

The conceptual framework of this study is based on my belief that it is the deeper social and cultural beliefs and attitudes of audiologists that prevent them from accepting the research that demonstrates the benefits of ASL/English bilingualism for Deaf and Hard of Hearing children. They are allied health professionals, they view being Deaf or Hard of Hearing as a disability, and they are advocates for spoken language. They believe that a successful Deaf or Hard of Hearing adult is one who speaks well and blends easily into society. Therefore, the goal of Deaf and Hard of Hearing education is to raise Deaf and Hard of Hearing children to become as much like hearing people as possible, and to assimilate into the greater hearing society. These beliefs and attitudes are deeply held and make it difficult, if not impossible, to accept the research that supports the benefits of ASL.

More than 90% of Deaf and Hard of Hearing children are born to hearing parents (Flexer, 2015; Mitchell & Karchmer, 2002). With the advent of newborn hearing screening programs in the United States, most parents find out their baby is Deaf or Hard of Hearing before the baby is



six months old. The parents must then decide how to make language accessible to their infant who cannot hear. Basically, they must decide if they want their child to learn both ASL and spoken and/or written English, or if they want their child to learn only spoken English.

Andrew Solomon (2012) is a journalist who noted that most traits in humans are passed down vertically. Genetic traits, such as hair color, eye color, and height are passed vertically from one generation to the next. To a lesser degree, language, religion, and culture are passed down vertically from parents to children. But sometimes parents give birth to a child with an identity the parents do not share. Rather, the child shares an identity with other people who are like the child, but not like the parents. Solomon referred to this kind of identity as a horizontal identity. Hearing parents who give birth to a Deaf or Hard of Hearing child have a child with a horizontal identity—a child who has an identity the parents do not share. The parents must make a choice about what to do—a choice ranging from attempting to ignore the horizontal identity and trying to make the child become like a hearing child or embracing the identity of the child and trying to learn everything they can about it.

Thomas Hehir (2007), formerly with the United States Department of Education, argued there is a pervasive attitude in our society that leads to the common belief that it is better to speak than to sign, rather than accepting that there are different ways to communicate – and no one way is the right way. Societal beliefs are imposed upon parents who have children with disabilities, who tend to respond to their children’s disabilities in one of three ways – they are overprotective, they pretend the disability does not exist, or they attempt to “fix” the disability, usually through some sort of medical treatment (the medical model). Societal beliefs are adopted by professionals, who tend to enter the field to “help” children with disabilities. Hehir believes that the purpose of special education is not to attempt to cure disabilities, but to teach children

the skills they need to live full lives with their disabilities. The goal is not to assimilate, or to become like people who don't have disabilities, but to be accepted with disabilities as equal participants in school and the community.

As defined in Chapter 1, the professional who evaluates and identifies an infant as Deaf or Hard of Hearing is the allied health professional known as an audiologist. According to the audiologists' Scope of Practice, "the audiologist provides counseling regarding the effects of hearing loss on communication and psycho-social status in personal, social, and vocational arenas" (AAA, 2004, para. 16). As the person who assesses and first identifies a child as Deaf or Hard of Hearing, the audiologist is the first professional in the system of Deaf and Hard of Hearing education with whom the parents come into contact. The parents rely heavily on the information and recommendations provided by the audiologist. If the audiologist recommends that the parents use both ASL and spoken English, hearing parents are likely to follow that recommendation. Likewise, if the audiologist recommends against sign language, the parents are likely to follow that recommendation (Li et al., 2003).

As part of this study's lens on Critical Disability Theory, this study considered Berry's framework of assimilation versus integration. The Deaf community, in general, places a high value on maintaining its cultural identity. Deaf and Hard of Hearing adults seek integration with equality in the larger hearing society. Members of the Deaf community may also value separation, in some circumstances. The Deaf community values schools for the Deaf as "safe" places, as described by Hodge and Runswick-Cole (2013). Schools for the Deaf are seen as places where the language and culture of Deaf people are accepted and freely practiced (FindLaw, n.d.; IDEA Special Factors, 2004; Legislative Analyst's Office [LAO], 2016).

Marginalization of Deaf and Hard of Hearing people is not a goal held by audiologists or by the Deaf community, although Deaf and Hard of Hearing people sometimes feel marginalized by hearing society, especially when Deaf or Hard of Hearing people are raised orally, but are not able to blend easily into hearing society and have not been raised in the Deaf culture (Dowd, 2017; Jankowski, 1997). They feel they do not belong to either the hearing culture or the Deaf culture.

Critical Disability Theory, the distinction between the medical model and the social/cultural model formed the lens through which the field of audiology was studied. Do audiology students believe in the medical model and believe that it is better for Deaf and Hard of Hearing people to be assimilated into hearing culture, rather than to maintain their social and cultural identity as Deaf people? Does this cultural belief cause audiologists to recommend against ASL use to parents of newly identified Deaf and Hard of Hearing infants?

**Audism.** Briefly, audism is the belief that it is better to be hearing than to be Deaf or Hard of Hearing. The word “audism” was coined in 1977 by Tom Humphries, a Deaf scholar, in his doctoral dissertation. Numerous references to Humphries’s invention of the word appear on the internet, and some of those references quote Humphries’s definition. When I attempted to find Humphries’s doctoral dissertation on-line, I was able to find only a redacted version of it. While the partial dissertation did contain the word audism, with a promise that the word would be defined later in the document, the part of the dissertation that contains the definition had been redacted. I e-mailed Humphries and asked him if I could use the definition I had found on-line, and he asked me not to. He told me he was a young, unsophisticated scholar at the time he had written the dissertation, and that is why he had withdrawn parts of it from publication. In a personal e-mail, he did give me the following explanation of how he had come up with the word:

Audism, ah. Okay, here's the story . . . I had searched for a cause for the general poor school performance of deaf students . . . I realized it was some kind of ideology that led to certain pedagogical design and execution of teaching practices. Something was causing the non-recognition of signing as a critical part of deaf education, something was causing the low expectations, something was causing the negative interpretation of deaf children's behaviors, and critically, something was causing professionals to ignore the evidence of their own students' preference for visual and peer learning and instead insisting on ways of learning that were heavily teacher centered and audition based. I decided the ideology needed a name. So that's where audism came from. (T. Humphries, personal communication, October 30, 2015)

The word audism still does not appear in *Merriam-Webster's Collegiate Dictionary, 10<sup>th</sup> Edition*, but it does appear in the Merriam-Webster on-line dictionary as "discrimination or prejudice against individuals who are deaf or hard of hearing" (Audism, n.d., para. 1). The word is fairly well-known now in Deaf circles but is still not recognized by persons unfamiliar with the Deaf world.

**Institutional audism.** Lane (1992) credited Humphries for coining and defining individual audism, the belief that it is better to be hearing than to be Deaf or Hard of Hearing. Lane also believed audism exists at the institutional level; there is a system of advantages that hearing people have over Deaf and Hard of Hearing people. Lane makes the following statement:

Audism is the corporate institution for dealing with deaf people, dealing with them by making statements about them, authorizing views of them, teaching about them, governing where they go to school and, in some cases, where they live; in short, audism is the hearing way of dominating, restructuring, and exercising authority over the deaf community. (p. 43)

**Metaphysical audism.** Bauman (2004) added a third definition—that of metaphysical audism, which is based on the belief that it is the ability to speak that makes a person fully human. She explains metaphysics as our desire to understand life and to understand the world. Metaphysicists wonder about life and what it means to be human. Metaphysical audism is the

belief that people who are Deaf are not fully human, because of the belief that what separates human beings from other animals is the capacity to use language. In the minds of most people, language is associated with speech, so Deaf people cannot be considered fully human if they cannot use spoken language.

Mitchell (2013) expressed that spoken language symbolizes the power relationship between the dominant hearing culture and the minority Deaf culture, in the following passage:

I posit that the idea of voice is a metaphor of resistance drawn from the hearing world by which silences become a choice and not a consequence of the oppression and debilitating power dynamic of the dominant group. Instead of voice being a reflection of one's thoughts and feelings, the expression of voice via speech is the focus. By positioning voice synonymously with speech, the speech (and any obvious impairment), and not the voice, becomes an indicator of an individual's rationality and personality. (p. 432)

**Laissez-faire audism.** Eckert and Rowley (2013) added yet a fourth term *laissez-faire audism*. *Laissez-faire audism* is different from metaphysical audism in that Deaf and Hard of Hearing people are not viewed as animal-like if they do not have intelligible speech. Rather, *laissez-faire audism* is characterized by harmful, yet often subconscious stereotypes. An example of *laissez-faire audism* is the medical profession's insistence on CIs for Deaf children, because CIs will theoretically improve educational and social outcomes for Deaf people. The harmful stereotype remains that Deaf and Hard of Hearing children will be better off if the medical profession can make them more like hearing people.

Eckert and Rowley (2013) discussed the intersectionality of the types of audism, and add that each may be overt, covert, or aversive. In overt audism, the superiority of hearing people is assumed. The above referenced Milan Edict an example of overt institutional and metaphysical audism. The superiority of hearing people was assumed; so was the superiority of spoken language. Sign language was banned in schools world wide.

Covert audism is much less obvious. In covert audism, Deaf and Hard of Hearing people are slighted, but it is not sure if the hearing person intended it or not. An example of covert audism occurred when NCHAM (n.d.) developed a film showing how different families with Deaf and Hard of Hearing children had chosen different “communication options.” The section showing Deaf children with Deaf parents signing to each other was captioned so that hearing audiences could understand what the Deaf people were saying. But the rest of the movie, which was in spoken English, was not captioned so that Deaf and Hard of Hearing people could understand it.

In aversive audism, hearing people express a belief that Deaf and Hard of Hearing people are equal but behave in ways that show that the belief in equality is not truly internalized. Hearing people say things that are well-intentioned but are actually insulting to people who are Deaf or Hard of Hearing. An example of aversive audism occurred recently on the television show, America’s Top Model during the show that aired on October 9, 2015. Someone was having a birthday party and the Deaf model, Nyle, said, “Happy birthday!” to the celebrant. The hearing models were excited and happy to know that Nyle could speak the words, “Happy birthday,” because the assumption of hearing people is that Deaf and Hard of Hearing people want to be able to hear and speak. The aversive audism in this case was laissez-faire (no harm was intended), but also metaphysical; the other models believed, subconsciously, that spoken language is superior to signed language.

An example of aversive laissez-faire, institutional audism is the above referenced use of simultaneous communication in Total Communication programs. The belief that English is superior to ASL resulted in the use of signed English, an invented sign system, rather than ASL, a natural language.

My belief is that it is the cultural beliefs and attitudes of some hearing audiologists that are the reason they tell parents not to sign. As hearing people, audiologists tend to have audist beliefs. Audism may, in fact, be institutionalized in the field of audiology. Audiologists may also be laissez-faire audists; they tend to believe that they have a professional duty to help Deaf and Hard of Hearing people overcome their disability. This audism may be presented to parents in overt, covert, or aversive ways. Audiologists typically believe that the goal of Deaf and Hard of Hearing education is for Deaf and Hard of Hearing children to assimilate into hearing culture, rather than to acculturate—to learn about hearing culture, but also to learn the language and culture of Deaf people.

### **Measuring Attitudes Towards Deaf People**

A number of studies have been conducted to determine how hearing people view people who are Deaf or Hard of Hearing. Overall, these studies have shown that hearing people who have Deaf or Hard of Hearing family members or close friends, or who know ASL, are more likely to have a positive view of people who are Deaf or Hard of Hearing; that is, they believe that Deaf and Hard of Hearing people have normal intelligence and are capable of holding jobs and caring for a family (Cooper, Rose, & Mason, 2004; Enns, Boudreault, & Palmer, 2009; Hoang, LaHousse, Nakaji, & Stadler, 2011; Nikoloraizi & Makri, 2005; Velonaki et al., 2015).

Educational programs about the culture of Deaf people also tend to have a positive influence on how hearing people view Deaf and Hard of Hearing people (Coryell, Holcomb, & Scherer, 1992; Enns et al., 2009; Hoang et al., 2011; Velonaki et al., 2015).

Coryell et al. (1992) conducted a study of hearing college students' attitudes towards their Deaf and Hard of Hearing dormitory mates at the Rochester Institute of Technology (RIT). There had been an increase in integration of Deaf and Hard of Hearing students at RIT as a result

of the passage of the federal Education for All Handicapped Children Act (Public Law 94-142) in 1975, but that integration had not always been successful; there tended to be friction between hearing and Deaf/Hard of Hearing students on the campus and in the dormitories. The authors hypothesized that the lack of successful integration was due to covert negative attitudes and stereotypes about Deaf and Hard of Hearing people on the part of hearing students. The research methodology involved a qualitative analysis of focus group conversations with hearing dormitory resident assistants. Results showed that factors that contributed to a negative view of Deaf and Hard of Hearing students included stereotyping and negative attitudes of hearing students, insufficient education and awareness about Deaf and Hard of Hearing people, communication barriers, and cultural differences. Factors contributing to positive behaviors included personal contacts with Deaf and Hard of Hearing students, education and awareness training for hearing students, and sign language classes. The authors noted this study was limited to college students at RIT and may not be generalizable to other settings.

A 35-item Likert-type scale survey was developed by Berkay, Gardner, and Smith (1995) to measure hearing people's opinions about Deaf people. The survey was adapted by Cooper et al. (2004) to more accurately reflect the language, culture, and human rights of Deaf people to measure the attitudes of mental health providers towards Deaf people. These researchers found that amount of exposure to well-educated Deaf and Hard of Hearing people had a positive effect on the attitudes of mental health professionals. Exposure to well educated Deaf and Hard of Hearing people was found to have a positive impact on the attitudes of genetic counselors (Enns et al., 2009), medical students (Hoang et al., 2011), and nurses (Velonaki et al., 2015). All these researchers utilized the Cooper et al. survey instrument.



Knowledge of Deaf culture and ability to sign were found to have positive impacts on the attitudes of hearing people in a study of medical students (Hoang et al., 2011). In another study, hearing people who were knowledgeable of Deaf culture and who knew sign language were shown to have even more positive attitudes about deafness than Deaf people who were raised orally (Nikoloraizi & Makri, 2005).

While studies have been done on attitudes about Deaf and Hard of Hearing people by hearing students (including hearing sign language students), mental health professionals, genetic counselors, medical students, and nurses, I was able to find very little information about the attitudes and beliefs of audiologists about Deaf and Hard of Hearing people. Tyler (1993) noted that audiologists, like most professionals in the health field, view deafness as something to be cured or habilitated (the medical model) while Deaf people tend to view themselves as belonging to a cultural and linguistic minority group (the social/cultural model). He suggested that audiologists should interact more with Deaf and Hard of Hearing people, to gain understanding and appreciation of the culture of Deaf people. Additionally, he suggested that audiologists should present information about Deaf culture to hearing parents in a positive light, regardless of whether the parents have chosen to use ASL or to focus only on spoken language development. Because most audiologists are hearing, he suggested that audiologists should provide opportunities for hearing parents to meet Deaf and Hard of Hearing people to learn more about the lives and culture of Deaf people. He expressed that audiologists should encourage bilingualism for Deaf people.

In 1984, Rohland and Meath-Lang did a phenomenological study to determine how Deaf people view audiologists. Of the 193 Deaf adults they surveyed, 79.3% viewed audiologists in a negative or somewhat negative light. Deaf people expressed dissatisfaction that so few

audiologists know ASL and that they cannot communicate with them. They also expressed mistrust and resentment towards audiologists, feeling that audiologists believed they were superior to Deaf people, and that they pitied Deaf people. The authors commented that, “A lack of experience with deaf adults may lead to awkwardness in making recommendations to parents of deaf children” (p. 138). English, Mendel, and Rojeski (1999) found a similar level of dissatisfaction with audiologists among Deaf people. These authors suggested that audiologists should learn ASL to communicate with their Deaf patients, and they should learn more about Deaf culture. Both studies were done some time ago, and possibly Deaf people’s views of audiologists have changed.

The purpose of this study was to explore if audiology students have attitudes and beliefs about Deaf and Hard of Hearing people that cause them to continue to exclude research that demonstrates that sign language supports the development of spoken language in their approach when interacting with parents of newly identified Deaf and Hard of Hearing children.

### **Conclusion**

The research reviewed in this chapter provided the background for the study described in Chapter 3. First, the history of divisiveness between proponents of oral education and proponents of ASL/English bilingual education in the field of Deaf and Hard of Hearing education have been reviewed. The benefits of signed languages and the neurological basis of language, whether it is spoken or signed, have been discussed. The common belief of hearing people that it is better to be hearing than to be Deaf or Hard of Hearing, audism, has been discussed. The dynamic nature of systems in Systems Theory and the transformational goals of Critical Disability Theory were discussed. Following this was a review of research studies that discussed the attitudes and beliefs of hearing people, including hearing college students, mental

health professionals, medical students, and nurses, about Deaf and Hard of Hearing people. Last, a review of articles about the attitudes and beliefs that Deaf people have about audiologists was provided.

No research was found that discussed the attitudes and beliefs that audiologists have about Deaf and Hard of Hearing people. This study attempted to fill that gap by exploring how audiology students feel about Deaf and Hard of Hearing people. My belief was that audiology students, who are mostly hearing people, believe that Deaf and Hard of Hearing people should learn to speak and should be able to assimilate into hearing society (the medical model).

Viewing the attitudes of audiology students through the lens of Critical Disability Theory, I believed the audiological system is set up to ensure that hearing people (the majority culture) maintain power over Deaf and Hard of Hearing people (the minority culture). I believed those attitudes and beliefs are so deeply engrained and institutionalized in hearing culture, that hearing people, including audiology students, are completely unaware of the actions they take to maintain that power.

In Chapter 3, I discuss my proposal to conduct a qualitative case study to explore the attitudes and beliefs that audiology students have about Deaf and Hard of Hearing people. I began by administering an adapted Attitudes to Deafness Scale, regarding beliefs and attitudes about Deaf and Hard of Hearing people to first year students at a doctorate of audiology (AuD) program at a university on the west coast of the United States. The survey included items to be scored using a 6-point Likert-type scale. Based on the results of that survey, six AuD students participated in case study interviews to explore their attitudes and beliefs about Deaf and Hard of Hearing people. Learning more about how AuD students view Deaf and Hard of Hearing people helped close a gap that existed in the research in Deaf and Hard of Hearing education.

### **Chapter 3: Methodology**

I reviewed the disconnect between the Deaf community and the professionals who serve them in the previous chapter. Professionals in the field of Deaf and Hard of Hearing education have long argued about whether Deaf and Hard of Hearing children should learn only spoken language so that they can assimilate, or blend, into the larger hearing society (the medical model), or whether they should learn both signed and spoken languages, so that they can be acculturated into hearing society, while maintaining their own language, American Sign Language (ASL), and their own Deaf culture (the social/cultural model). The divisiveness over this issue has been considered an ideological disagreement (Ilkbasaran & Tasci, 2012; Kartchner, 2000; McDonnell, 2016)—oral (spoken language) education versus bilingual (signed and spoken language) education. I believe this ideological division is cultural; the divisiveness is a clash between hearing culture versus Deaf culture. This study explored this cultural divide.

#### **Research Design**

This research used a qualitative case study approach. Creswell (2015) says that a qualitative study is not meant to be generalized to a whole population. Rather, a qualitative study is “useful to exploring and understanding a central phenomenon” (p. 626). Additionally, Creswell (2015) defines a case study as one in which “the researcher provides an in-depth exploration of a bounded system” (p. 617). This research study was a qualitative case study in the sense that it provided an in-depth exploration of the attitudes and beliefs of AuD students about Deaf and Hard of Hearing people, and it was a study of a bounded system. Specifically, that system was the AuD program at a university on the west coast of the United States.

The conceptual framework for this research study was General Systems Theory, in that it was the beginning of an exploration of a whole system – the educational system for students who

are Deaf or Hard of Hearing. In General Systems Theory, systems are viewed as dynamic. Systems change over time, based on feedback from the outputs of the system (Caine, 2004; Weckowicz, 1989). Thus, the educational system for Deaf and Hard of Hearing students changes, based on feedback received from the Deaf community – the output of the system. Educational systems, however, tend to be resistant to change (Caine, 2004); the special education system may be even more resistant to change (Hehir, 2007); and the existence of audism (Bauman, 2004; Eckert & Rowley, 2013; Lane, 1992) may make the educational system for Deaf and Hard of Hearing students even more resistant to change.

This research study focused on only one element of the educational system for Deaf and Hard of Hearing children, the field of audiology. Audiology was chosen as a field of study because the audiologist is the first professional with whom parents of newly identified Deaf and Hard of Hearing infants come into contact. The field of audiology was studied through the lens of Critical Disability Theory.

This study began by administering the Attitudes to Deafness Scale (Cooper et al., 2004) to AuD students at a university on the west coast of the United States, during the summer trimester of their first year in the program (2018). Qualitative data were then collected through one-on-one interviews of six students who were selected based on the results of the Attitudes to Deafness Scale. Those interviews provided more in-depth information about the attitudes and beliefs of audiology students. The study is explained further, later in this chapter.

The qualitative data was analyzed through the lens of Critical Disability Theory (Asch, 2001; Fine & Asch, 1988; Hosking, 2008; Rocco, 2002; Rocco & Delgado, 2011), which distinguishes an older, medical model of disability, from a newer social/cultural model of disability. Critical Disability Theory has the goal of transforming the attitudes and beliefs of

hearing professionals about Deaf and Hard of Hearing people (Kezar, 2002); there is no intent to judge or threaten hearing people. I recognize that some hearing professionals in the field of Deaf and Hard of Hearing education are actively seeking to break down the power of hearing professionals over Deaf and Hard of Hearing people and over the parents of Deaf and Hard of Hearing children.

Typically, audiologists are the first professionals in the field of Deaf and Hard of Hearing education with whom parents of Deaf and Hard of Hearing infants come into contact, because it is the audiologist who assesses the child and determines the child is Deaf or Hard of Hearing. This study focused on the cultural beliefs and attitudes of first-year AuD students about Deaf and Hard of Hearing people, even though medical attitudes and beliefs may also be common amongst other Deaf and Hard of Hearing education professionals, such as teachers of the Deaf and Hard of Hearing and speech pathologists. Most of the audiologists that serve Deaf and Hard of Hearing children are hearing. According to Suzanne Yoder, president of the Association of Audiologists with Hearing Loss, only about 200 of the 1600 audiologists who are currently certified by ASHA are themselves Deaf or Hard of Hearing (personal communication, October 25, 2017). Since almost all audiologists are hearing people, they may view Deaf and Hard of Hearing education from a medical perspective.

**Purpose.** The purpose of this study was to explore and understand the underlying cultural beliefs and attitudes of hearing audiology students about people who are Deaf or Hard of Hearing.

**Researcher bias.** My stance is that there is no place in the field of Deaf and Hard of Hearing education for audism, the belief that it is better to be hearing than to be Deaf or Hard of Hearing. I believe that, since most audiologists are hearing people, they view being Deaf or

Hard of Hearing from the hearing cultural perspective of audism. Audiologists are allied health professionals and view being Deaf or Hard of Hearing from a medical perspective. The role of the audiologist is to treat or rehabilitate people who are Deaf or Hard of Hearing (AAA, 2004; ASHA, 2018). My perspective is that until the underlying cultural beliefs and attitudes behind the arguments about oralism versus ASL/English bilingualism are brought out, acknowledged, and openly discussed, the arguments about whether Deaf and Hard of Hearing children should learn sign language will not end.

My position about audism was the basis of this research study. The goal of this research study was to explore and understand the beliefs and attitudes of students entering the field of audiology, and to explore the reasons that some audiologists continue to recommend that parents of newly identified Deaf and Hard of Hearing infants not use ASL with their children.

**Significance.** As a result of this study, practitioners (audiologists, speech pathologists, and teachers of Deaf and Hard of Hearing students) may be more likely to recommend sign language use to parents of Deaf and Hard of Hearing children. The results of this study could lead to further studies that result in some change in the way audiology students are trained. Ultimately, the results of this study could lead to an improvement in relationships between practitioners and people who are Deaf or Hard of Hearing. A powerful partnership could be forged between people who are Deaf and professionals in the field of Deaf and Hard of Hearing education that could lead to important policy changes in Deaf and Hard of Hearing education.

**Research question.** Qualitative research questions seek to explore and interpret human behavior at an in-depth level. The following qualitative research question was explored in this study: What are the attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing?

This sub-question of the larger question was also explored: What are the attitudes and beliefs of audiology students about sign language?

A second sub-question that emerged from the analysis of the interview data was as follows: What are the attitudes and beliefs of audiology students about their role in the educational system as it related to Deaf and Hard of Hearing children and their families?

**Procedures.** During the third trimester of their first year of the AuD program, audiology students at a university on the west coast of the United States were surveyed using the Attitudes to Deafness Scale (Cooper et al., 2004). The scale was adapted slightly, with the permission of Dr. Rose (personal communication, May 26, 2017). The scale is a 22-item survey. The scores are based on a 6-point Likert-type scale. The scores on the adapted Attitudes to Deafness Scale (Appendix A) were used to determine which students would be asked to participate in the interview portion of the study. Scores on the Attitudes to Deafness Scale range from 22 to 132, with a score of 78 or higher representing a social/cultural view of Deaf and Hard of Hearing people.

Six students were chosen to participate in the case study interview portion of this study. Three students with the lowest scores (medical model) and three students with the highest scores (social/cultural model) were asked to participate in the interviews during the summer trimester of the 2018 academic year, to provide a greater depth of information about their attitudes and beliefs about Deaf and Hard of Hearing people (Merriam & Tisdell, 2016). The students were asked to participate in a one-hour semi-structured interview (see Appendix B), during which they were asked open-ended questions about their attitudes and beliefs about Deaf and Hard of Hearing people.



**Participants.** The participants in this study were the 20 students in the first year of one cohort of the AuD program at a university on the west coast of the United States. Nineteen (19) of the 20 students in the cohort participated in the Attitudes to Deafness Scale. One student was absent on the day the Attitudes to Deafness Scale was administered. Six of these students then participated in the one-on-one case study interviews. Utilizing six students from this group to participate in the case study interviews provided enough diversity to analyze the attitudes and beliefs of these AuD students. Interviewing fewer than six students may not have provided enough information to be useful. Interviewing more than six students may have resulted in a saturation of information and would be difficult to accomplish within the bounded timeline of this study. Therefore, six student interviews were appropriate for this study (Creswell, 2015).

Because this study was being viewed through the lens of Critical Disability Theory, the goal of this research study was to understand if the attitudes of AuD students are from a medical view of Deaf and Hard of Hearing people, or from a more social/cultural perspective. Another goal of the study was to explore if these students would recommend sign language use to parents of newly identified Deaf and Hard of Hearing infants, and the reasons why they would or would not recommend sign language.

The six students I asked to participate in the case study interviews were the students who scored the highest (social/cultural viewpoint) and the lowest (medical viewpoint) on the Attitudes to Deafness Scale. The purpose of this maximal variation sampling method was to ensure that there would be a wide variety of viewpoints amongst the students who participated in the interviews. I recruited the students by sending e-mail letters inviting them to participate. I included the Informed Consent form with the letter, but I also provided copies of the Informed Consent form at the interviews (see Appendix C). To encourage their participation, I offered

them a \$25 gift certificate to either Barnes and Nobles or Starbucks. I also gave them an ASL “I Love You” lapel pin. If a student in the social/cultural group declined to participate, I asked the student who scored the next highest; if a student in the medical viewpoint declined to participate, I asked the next lowest scoring student, and so on.

I asked the Audiology Department chair at the university for permission to utilize the students from the university AuD program for the study. I explained why the site was chosen, what amount of time would be expected from the student participants in the study, and how the results will be used.

**Site selection.** The decision to use this purposive sample population, students in the AuD program at this particular university, was based on pragmatic reasons. The university program is close by, on the west coast of the United States, and I am a student at a university in Northern California. Another reason for selecting this university program is that its curriculum is geared toward the preparation of pediatric audiologists, while the curriculum at other universities is geared more towards preparing audiology students to work with older, late-deafened adults.

**Instrumentation.** Three types of data were collected for this study. First, an adapted version of the Attitudes to Deafness Scale was administered to 19 students in one cohort of this AuD program. Then, six students were asked to participate in one-on-one semi-structured case study interviews. Finally, five artifacts were reviewed. Each type of instrumentation is explained more thoroughly below.

***Attitudes to Deafness Scale.*** The Attitudes to Deafness Scale, developed and described thoroughly by Cooper et al. (2004), was used for the first portion of this study. This 22-item, 6-point Likert-type scale was developed by these researchers to assess attitudes of professionals in the mental health field about Deaf people. Dr. Rose is the designated contact for the Attitudes to

Deafness Scale. With Dr. Rose's permission (personal communication, May 26, 2017), some of the items were adapted to make them more appropriate for professionals in the field of Deaf and Hard of Hearing education (see Appendix A).

On the Attitudes to Deafness Scale, participants rate each item from 1 (strongly disagree) to 6 (strongly agree). There is no mid-point on the scale; thus, participants must agree or disagree to some extent with each item. Thirteen (13) of the items reflect a negative (medical) perspective of being Deaf and are scored from 6 to 1. The other nine items reflect a positive (social/cultural) view of being Deaf and are scored from 1 to 6.

The items on the Attitudes to Deafness Scale were developed through focus group interviews with Deaf people, based upon the life experiences reported by those Deaf panelists. The survey originated with 60 items, which were field tested with 121 psychologists and psychology students. An item analysis of the 60-item survey revealed that 31 of the items had a normal distribution. The researchers then divided the respondents into two groups—those with a positive view of being Deaf (those who scored in the top quartile) and those with a negative view (those who scored in the lowest quartile). They reviewed the respondents' scores to the remaining 31 items and performed an independent t-test to compare the group's responses ( $p < .05$ ), and those items were retained for the final Attitudes to Deafness Scale.

The use of the Attitudes to Deafness Scale was important to this study for two reasons. First, it provided a breadth of information about the attitudes of all the students in the cohort at this AuD program. Second, it provided information that helped me, the researcher, identify those students who have the most medical point of view of Deaf people versus those who have the most social/cultural point of view. These were the students who were asked to participate in the case study interviews. The reason for including the students with the highest scores and the

lowest scores in the case study portion of the study was to ensure diversity in the points of view of the interviewees.

It was not necessary to field test the Attitudes to Deafness Scale, as the scale was thoroughly tested by the authors of the assessment (Cooper et al., 2004). Only minor adaptations were made to the scale for purposes of this study, with the permission of Dr. Rose, as follows:

Item 4 was changed from “Deaf schools and deaf clubs create deaf ‘ghettos’” to “Deaf and Hard of Hearing children should be fully included in hearing schools,” because the word “ghetto” has negative and insulting connotations, and because Deaf clubs are not applicable to Deaf education.

Item 12 was changed to use more up to date terminology; the term “lipread” was updated to “listen and speak.”

Item 15 was changed from “All deaf people should be offered corrective surgery” to “All deaf people should receive corrective surgery,” because it is now commonly accepted that corrective surgery should be offered, even though parents of patients may refuse surgery. Also, the example “(i.e., cochlear implants)” was added, to make the item clearer.

In Item 16, the word “clients” was changed to “children,” to make the item more applicable to professionals who work with Deaf and Hard of Hearing children.

In Item 20, the words “clubs/societies” was changed to “events” to make the item applicable to more situations.

**Semi-structured interviews.** Six of the students in the AuD program were selected to participate in semi-structured interviews (see Appendix B), to gain more in-depth information about those students’ attitudes and beliefs about Deaf and Hard of Hearing people. The qualitative interview protocol was field tested by discussing the questions with professors at the

university, practicing with a peer, and pilot testing the interview with a working clinical audiologist. Questions on the interview were altered in response to the reactions of respondents on the practice interviews. For example, one of the original questions, “Where do you think deaf children should go to school?” was worded so vaguely that the response to the question from my peer was uninformative. Newly worded items, “Tell me about your vision of a successful deaf or hard of hearing child” and “Tell me about your vision of a successful deaf or hard of hearing adult” yielded useful information about my peer’s beliefs about Deaf and Hard of Hearing people.

By asking students to tell me why they wanted to be an audiologist, and how they envision successful Deaf and Hard of Hearing children and adults, I hoped to learn more about their opinions and values. I hoped to learn whether they view Deaf and Hard of Hearing people from a medical point of view, or from a social/cultural point of view. Asking students to describe their experiences with Deaf and Hard of Hearing people and comparing that information to their attitudes and beliefs about whether Deaf and Hard of Hearing people from a medical disability group, or whether they form a cultural and linguistic group, helped determine if experiences with and exposure to Deaf and Hard of Hearing people influenced their attitudes and beliefs. Questions about the students’ knowledge of Deaf culture, sign language, technology (hearing aids or cochlear implants), and spoken language development, helped me, as a researcher, learn whether knowledge about Deaf and Hard of Hearing people influences attitudes and beliefs. Finally, by asking the students to imagine, hypothetically, that they are the audiologist who identifies a Deaf or Hard of Hearing baby, I hoped to learn more about their approach to the parents of Deaf and Hard of Hearing infants, and whether they would recommend sign language use to those parents.

The questions on the interview were open-ended, flexible, and semi-structured. It was possible an interviewee may answer a question before it was asked, so the question did not need to be asked. It was possible that I, the researcher, may have found it more appropriate to ask questions in a different order than they were presented in the protocol. Leaving the structure of the interview protocol flexible allowed for a more conversational, informal flow to the interviews. My goal was to gain the trust of the students being interviewed, not to judge or threaten them in any way.

The case study interviews were appropriate for this study, as they provided a depth of information about the attitudes and beliefs of audiology students that the survey did not reveal. Interviews permitted the participants to describe their personal views in more detail (Merriam & Tisdell, 2016). The interviews provided some opportunity for the audiology students to reflect on their own belief systems. The opportunity for self-reflection applied to me, as well. By establishing a relationship of mutual trust and reflexivity with audiology students, the field of audiology was somewhat demystified for me, as well (Kezar, 2002).

There were some disadvantages to the interview process (Merriam & Tisdell, 2016). When an interviewee had difficulty expressing attitudes and beliefs clearly, the semi-structured format of the interviews allowed me to ask probing questions, to make sure I understood the interviewee's intent. Equipment could have failed. I was certain to test the equipment ahead of time, and throughout the interviews. I had to be a careful listener, not interjecting my own thoughts and opinions. Merriam and Tisdell (2016) caution, "Both parties bring biases, predispositions, and physical characteristics that affect the interaction and data elicited (p. 130). Therefore, I was cautious to be non-judgmental and respectful towards the study participants.

**Artifacts.** An additional piece of qualitative data consisted of a description and content analysis of artifacts. The artifacts consisted of one book and two articles that were assigned to the AuD cohort in their Deaf Culture class during the summer of 2018. They also included the Audiologist Scopes of Practice of the AAA and ASHA. The readings and the Scopes of Practice were analyzed to provide further information about the attitudes and beliefs of audiologists about Deaf and Hard of Hearing people.

**Data collection.** The Attitudes to Deafness Scale was administered in a classroom to AuD students at the university during the third trimester of their first year (Summer 2018) of the three-year program. I attended the class, explained the study, explained the informed consent form (see Appendix D), and asked the students to complete the survey (see Appendix A). The explanation and completion of the survey forms took approximately 30 minutes. I collected the surveys during that class period. I took the surveys home and scored them by hand. The surveys are being kept in a locked cabinet at my home for three years. After three years, they will be shredded.

The interviews of six audiology students occurred during the summer 2018 trimester of the students' first year in the AuD program. The interviews ranged from 30 to 80 minutes. Interviews were done outside of class. They were scheduled with students who were chosen based on their responses to the Attitudes to Deafness Scale. The interviews were held in a room provided by the university. The room was a quiet, private place, to ensure both confidentiality for the students and the fidelity of the audiotape. Interviewees were asked to give written permission to be interviewed, and informed that they could refuse to continue participation at any time (see Appendix C). The interviews were audiotaped, using AudioMemos on a password protected iPad. The interviews will be deleted from the iPad three years after completion of the

study. I transcribed the interviews by hand within 48 hours. Hand transcribing the interviews allowed me to have more of a hands-on understanding of the information (Merriam & Tisdell, 2016). Transcripts of the interviews were typed in Word and are kept on a password-protected laptop. The transcripts have also been printed out and are kept in a locked cabinet in my home. Copies of the transcripts were sent by encrypted e-mail to the two individuals who coded the interviews along with me, for the purpose of triangulation and validation of the results of the analysis. Those two individuals signed confidentiality agreements, ensuring that they will not share the transcriptions with others (Appendix E).

Throughout the course of the study, I reviewed artifacts related to the field of audiology. Specifically, I reviewed three reading assignments from the AuD students' course on Deaf Culture. I also reviewed the Scopes of Practice of the AAA and ASHA. Merriam and Tisdell (2016) argue that written documents are like interviews. Written documents have a voice and a message. They present a point of view. The information in assigned readings is influential on students, and an analysis of the manner in which information was presented in these assigned readings will inform the research. An analysis of the readings and of the Scopes of Practice demonstrates whether the students are being presented with information that supports a medical or a social/cultural view of people who are Deaf.

**Data analysis.** The Attitudes to Deafness Scale results were scored by hand. The data are reported in narrative form, as well as in a table format to show the range of responses from 22 to 132. A low score demonstrates beliefs of the medical model; a high score demonstrates social/cultural beliefs. Students with the lowest and highest scores were asked to participate in the case study interviews.



The content of the interviews and the artifacts were analyzed in two different ways. First, they were analyzed using a deductive, directed approach (Hsieh & Shannon, 2005). After that, they were analyzed using an inductive, conventional approach (Hsieh & Shannon, 2005). Each method is explained thoroughly in this section.

The coding of the interviews was done by three individuals—me, a Deaf doctoral student, and an audiologist from a different university. Using methods outlined by Benedict (2010), I defined the coding categories and asked the other two coders to use the categories to code the interviews. After they coded the interviews, I met with each of them, either in person or by phone/videophone, to participate in a reconciliation process with each of the six interviews that are part of this study. I also communicated with both of them at the same time through email. There was actually no disagreement amongst the three of us on the deductive analysis of the data. We agreed about whether statements made by the AuD students were medical or social/cultural. Discussion occurred about the coding and the themes that emerged from the inductive analysis. These discussions were held by email and required several back and forth emails before consensus was achieved. This independent-coder method of triangulation helped ensure the reliability of the analyses and ensured that my bias did not taint the analyses.

The data were coded using both a deductive method and an inductive approach. The deductive approach was used to possibly verify assumptions I had made that audiology students have medical, audist attitudes and beliefs about Deaf and Hard of Hearing people. On the other hand, this deductive analysis could contradict my preconceived notions. Using an inductive approach allowed all coders to make unexpected discoveries about the beliefs and attitudes of audiology students; this approach allowed themes to grow out of the data.

Originally, two other individuals and I coded the data collected, using a deductive, directed method, as outlined by Hsieh and Shannon (2005). As we coded the data, we kept in mind the lens of Cultural Disability Theory. We looked for words or phrases that may be coded or categorized as “medical” or “social/cultural,” based on the terminology suggested and defined by Benedict (2010) and by the Critical Disability theorists (Asch, 2001; Hosking, 2008; Rocco, 2002; Rocco & Delgado, 2011). I anticipated that the directed analysis would either confirm or invalidate my belief that most audiologists have a medical view of Deaf and Hard of Hearing people. The deductive, directed data analysis might not support my belief, and I was open to that potential.

Second, using the inductive, conventional analysis method explained by Hsieh and Shannon (2005), the transcripts were read and reread. The other two coders and I made notes of our thoughts and impressions of words and phrases that were used by the interviewees. We looked for ideas that emerged repeatedly, and that could be coded to help make sense of the data. As we read and reread the transcripts, we looked for 25-30 codes—words and phrases that were important for my study purpose. Those codes were then aggregated into themes that emerged from the data, related to the research purpose and the research questions. The purpose of using conventional, inductive analysis of the transcripts and artifacts was to determine if any surprising or unexpected themes emerged from the data.

I interviewed six students from the AuD program—three who scored high on the Attitudes to Deafness Scale (demonstrating a more social/cultural view of Deaf people) and three who had lower scores on the Attitudes to Deafness Scale (demonstrating a more medical view of Deaf people). I first did a “within-case” analysis; I examined the views of each student individually, to develop a comprehensive picture of that student’s beliefs and attitudes about

Deaf and Hard of Hearing people (Merriam & Tisdell, 2016). Then, because I was comparing the views of the six students, I conducted a “cross-case” analysis, comparing the attitudes and beliefs of the two groups of students (Merriam & Tisdell, 2016). Interviews are reported in narrative form. Quotes from the interviews are used, to ensure the actual words and voices of the audiology students are presented with fidelity.

Qualitative data analysis of the artifacts was performed using the same two-step process. The data was first analyzed using a directed, deductive method. Text was reviewed to look for either social/cultural or medical terminology as defined by Benedict (2010). Text was also analyzed to look for words, terms, and phrases that support the medical or social/cultural stance (Asch, 2001; Hosking, 2008; Rocco, 2002; Rocco & Delgado, 2011).

Data analysis is explained in narration and in tables. The Attitudes to Deafness Scale scores are explained in narration. Additionally, a table shows the scores of the 19 students who participated in the survey and the students who volunteered to participate in interviews. Interviews are described and analyzed in narration, using quotes from the AuD students who were interviewed, to ensure authenticity of their words. The artifacts are described and analyzed using narration.

### **Reliability and Validity**

The reliability, or internal consistency, of the Attitudes to Deafness Scale was assessed using Cronbach’s alpha, which showed an acceptable level of internal consistency of the items at .71. The validity of the scale is demonstrated by the process of the item generation. Most particularly, the researchers point to the validity of having the items created by Deaf people, based on their own lived experiences. The researchers commented that they hope the scale will be used to change the beliefs of professionals who work with Deaf people (Cooper et al., 2004).

This comment is consistent with Critical Disability Theory, which seeks to transform the views of powerful groups (professionals who work with Deaf people) from viewing the minority group (Deaf people) through the medical lens to viewing the minority group through a social/cultural lens (Hosking, 2008).

### **Trustworthiness**

Merriam and Tisdell (2016) caution that the trustworthiness of qualitative research means “the extent to which research findings are credible” (p. 256). Consequently, trustworthiness “depends on the credibility of the researcher” (p. 256). Since the purpose of this research was to explore the attitudes and beliefs of audiology students about Deaf and Hard of Hearing people, I had to reflect those students’ attitudes and beliefs in an honest and trustworthy manner, without allowing the research to be skewed by my own bias that some audiologists are audists. Therefore, a variety of methods were used to help ensure the trustworthiness of the qualitative methods used in this research study.

Triangulation was used to compare the data analyses of the Attitudes to Deafness Scale, the interviews, and the artifacts. Triangulation refers to the use of multiple sources to ensure that the data provided through the multiple sources is comprehensive and thorough (Creswell, 2015; Merriam & Tisdell, 2016). Data from the Attitudes to Deafness Scale, which is objective data, was compared to the qualitative analyses of the semi-structure interviews, and the artifacts. Thus, three sources of data were compared and used for purposes of confirming research findings. Additionally, analysis of the interviews was done by me and two other coders. This second triangulation strategy ensured that my bias was checked.

During the interviews, my intent was to probe deeply enough into the beliefs of the AuD students to be able to provide a very rich and thick description of the students’ beliefs. In

reporting, I used quotes using the students' exact words, to ensure their "voices" were heard and their true attitudes and beliefs were captured. Because of my own bias on the subject, my intention was to explore and understand viewpoints, which may be contrary to my own. By using the results from the Attitudes to Deafness Scale, I hoped to recruit a diverse group of six audiology students to participate in the qualitative interview portion of this study.

Also, I maintained an audit trail. I kept a diary throughout the research process, writing down my own reflections, thoughts, and feelings after each interview. One of the goals of Critical Disability Theory is reciprocity (Kezar, 2002). I hoped that transformation would occur for both the audiology students and for me, the researcher. I anticipated that I would learn a great deal from the process of meeting with audiology students. I recognized that I tend to stereotype and "other" audiologists, and I hoped that my stereotypes were challenged. I was open to having my beliefs called into question.

### **Threats to Validity**

There were a number of threats to validity in this study. A qualitative study can never be replicated exactly, since a qualitative study is done for the purpose of learning about specific people and a given topic in a specified period of time (Creswell, 2015; Merriam & Tisdell, 2016). People change with time, and the participants in this study are likely to change their attitudes and beliefs over time. The validity and reliability of this study depended on my ability to portray my participants' attitudes and beliefs with fidelity and integrity. I attempted to present the most accurate depiction of the participants' attitudes and beliefs at the time that I interviewed them.

My own bias was another threat to the validity of this study. I believe that Deaf people form a linguistic and cultural minority within the larger hearing society. In order to ensure that

my bias did not color the findings of this research, I worked with two other individuals to code the data from the transcripts of the interviews. One of the other coders was a working clinical audiologist; the other was a Deaf individual who was formerly on the board of the NAD. Thus, the two other coders have vastly different life experiences and points of view. Another method used to counteract my bias was to maintain an audit trail. I kept a journal throughout the process in order to reflect not only on the students' beliefs, but on my own as well. While my goal was to have a small part in the transformation of the field of audiology, I expected that I would learn a great deal about my own beliefs through the interviews.

### **Limitations**

This study focused on a particular population, students in one AuD program. It is not known if the results of this study can apply to students in other programs, to working clinical audiologists, or to other professionals in the system of Deaf and Hard of Hearing education.

The reason this group was chosen as study participants was because audiologists are typically the first professionals with whom parents of Deaf and Hard of Hearing children have contact. Audiology students were chosen as participants, rather than practicing audiologists, because this study was designed to ask students to be reflective and introspective about their attitudes and beliefs. Therefore, it was critical to study student audiologists who have not yet formed firm professional attitudes and beliefs. It is not known if the results of this study would be the same with this same group of participants at a different time in their careers.

### **Ethical Considerations**

This study was vetted through the Institutional Review Board (IRB) process. Careful scrutiny of the IRB application ensured that this research study was carried out in an ethical manner. The AuD students who were participants in this study were informed that the purpose

of the study was to explore the beliefs of hearing audiologists about Deaf and Hard of Hearing people. Students were assured of anonymity and confidentiality as they participated in the study. Students signed Informed Consent Forms before participating in the Attitudes to Deafness Scale and in the interviews. No students' names are revealed in the analysis of the data. The students were assured that, even though the interviews were audiotaped, the audiotapes would be kept on a password protected iPad and that gender-neutral pseudonyms would be used when referring to individual students in the dissertation. The transcriptions of the interviews are kept in a locked cabinet in my home, and on a password protected laptop computer. Participants were fully informed that they had the right to refuse to participate in the study, as well as the right to withdraw at any time during the study.

The results of the study may be shared at presentations at the conference of the California Educators of the Deaf (CAL-ED) and at the national Early Hearing Detection and Intervention (EHDI) Conference, both in the spring of 2019 or 2020. The results may also be shared in articles to be submitted to the *American Annals of the Deaf*, the *Journal of Deaf Studies and Deaf Education*, and the *Journal of Early Hearing Detection and Intervention*. In all presentations and publications, pseudonyms will be used for individuals as well as for the name of the university, to protect the anonymity of the participants.

This research study was intended to explore the attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing. I did not anticipate that any participants would feel a deep emotional impact from this study.

## **Conclusion**

In conclusion, qualitative methods were appropriate for this study. The Attitudes to Deafness Scale provided a breadth of information about students and provided information about

individual respondents so that I could ensure that a diversity of attitudes and beliefs would be expressed by participants in the case study interviews. A qualitative analysis of the interviews provided in-depth information about the cultural beliefs and attitudes of the students in the AuD program. The qualitative analysis of artifacts also provided more in-depth information about the beliefs of audiologists.

The next chapter of this study describes the findings from the study. I define in narration, as well as through tables, the results of the Attitudes to Deafness Scale. I describe in narration the results of the deductive and inductive analyses of the qualitative data collected from the interviews and the artifacts.

The last chapter of this dissertation includes a review of the study, including the purpose of the study, the research questions, the conceptual framework, and the methodology. Conclusions are drawn from the findings of the study. This chapter makes recommendations for the AuD students, based upon the findings of the research. Last, recommendations are made for further research studies.



## Chapter 4: Findings

The purpose of this qualitative study was to explore and understand the cultural attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing. Audiologists are part of the Deaf education system, so the conceptual framework for this study was General Systems Theory (von Bertalanffy, 1972). This research was conducted specifically to explore whether audiology students view Deaf and Hard of Hearing people from a medical perspective or from a social/cultural perspective, studying these perspectives through the lens of Critical Disability Theory (Asch, 2001; Hosking, 2008; Rocco, 2002; Rocco & Delgado, 2011). Limited research has been done in the past to determine what audiology students or working audiologists believe about people who are Deaf or Hard of Hearing. This research was undertaken to help close that research gap. In addition to learning about the attitudes and beliefs of audiology students about Deaf and Hard of Hearing people, I hoped to learn more about the attitudes and beliefs of audiology students about American Sign Language (ASL).

Thus, data were collected and analyzed to answer the following guiding research question: What are the attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing?

A sub-question that was explored is the following: What are the attitudes and beliefs of audiology students about sign language?

Audiologists work within the Deaf education system. I chose to focus this study on the attitudes and beliefs of audiology students, because audiologists are the professionals who identify an infant as Deaf or Hard of Hearing. Therefore, the audiologist is typically the first professional in the Deaf education system that parents of Deaf and Hard of Hearing children meet. While it was not a primary purpose of this study, a great deal of information was gathered

during the interview process about the beliefs of the audiology students about their role in the Deaf education system, and the conceptual framework for this study was Systems Theory (von Bertalanffy, 1972), looking through the lens of Critical Disability Theory. Based on the responses of the audiology students during the interviews, a second sub-question emerged, which was the following: What are the attitudes and beliefs of audiology students about their role in the educational system as it relates to Deaf and Hard of Hearing children and their families?

Three types of data were collected, which included the following:

- The adapted Attitudes to Deafness Scale
- Semi-structured interviews of six audiology students
- Artifacts – readings assigned for the Deaf Culture class in which the students were enrolled and the Scopes of Practices from the websites of the AAA (2004) and the ASHA (2018)

### **Attitudes to Deafness Scale**

During the summer of 2018, the third trimester of their first year of the doctorate of audiology (AuD) program, AuD students at a university on the west coast of the United States were surveyed using an adapted version of the Attitudes to Deafness Scale (Cooper et al., 2004). The scale was adapted slightly, with the permission of Dr. Rose (personal communication, May 26, 2017). No statistical analysis was done of the Attitudes to Deafness Scale. Rather, the scores on the Attitudes to Deafness Scale were used to determine which students would be asked to participate in the case study interview portion of the study.

I visited the students' classroom to explain the purpose of the study, and to get their signed consent to participate in the Attitudes to Deafness Scale. I explained the informed consent form (Appendix D) and asked them to sign it. Nineteen (19) of the 20 students in the cohort were present in class on the day I attended, June 18, 2018. All agreed to participate in the

survey. The students were informed that six students would be invited to participate in individual interviews. They were asked to provide their email addresses on the consent form, so that I could contact the chosen students regarding the interview.

The adapted Attitudes to Deafness Scale had 22 items that were rated using a 6-point Likert-type scale (Appendix A). Thirteen (13) of the items were worded such that agreement demonstrated a medical view of being Deaf. Those items were scored 6-1. Nine of the items were worded such that agreement demonstrated a social/cultural view of being Deaf. Those items were scored 1-6.

Possible scores on the Attitudes to Deafness Scale ranged from 22 to 132. A score of 77 or below reflected a medical view of people who are Deaf or Hard of Hearing; a score of 78 or above reflected a social/cultural view. The scores in this cohort of AuD students ranged from 75 to 123. The internal consistency of the revised Attitudes to Deafness Scale was assessed using Cronbach's alpha, which showed a good level of internal consistency of the items at .822. Thus, these AuD students demonstrated, overall, a social/cultural view of people who are Deaf or Hard of Hearing on the Attitudes to Deafness Scale. This finding contradicted my belief that audiologists tend to have a medical perspective about people who are Deaf or Hard of Hearing.

The six students I asked to participate in the case study interviews were the students who scored the highest (social/cultural perspective) and the lowest (closest to the medical perspective) on the Attitudes to Deafness Scale. The purpose of this maximal variation sampling method was to ensure there would be the widest possible variety of viewpoints amongst the students who participated in the interviews. All but one of the students scored above 77, in the social/cultural range. Because the range of scores was 75 to 123, the variation of the scores was not as broad as I had hoped.

I recruited the students by sending email letters inviting them to participate. I included the Informed Consent form (Appendix C) with the email letters, but I also provided copies of the Informed Consent form at the interviews. To encourage their participation, I offered them a \$25 gift certificate to either Barnes and Nobles or Starbucks. I also gave them an ASL “I Love You” lapel pin. If a student in the higher scoring group declined to participate, I asked the student who scored the next highest; if a student in the lower group declined to participate, I asked the next lowest scoring student, and so on.

Table 2

*Attitudes to Deafness Scale Scores*

<b>Student #</b>	<b>Score</b>	
1	75	Did not include email address on consent form.
2 (Casey)	85	
3	96	Did not include email address on consent form.
4	97	Did not respond to email invitation.
5	101	Did not respond to email invitation.
6 (Blair)	101	
7	102	Did not respond to email invitation.
8	105	Did not respond to email invitation.
9 (Tony)	108	
10	111	
11	113	
12	114	
13	115	
14	115	
15	116	

16 (Terry)	116	
17	119	Did not respond to email invitation.
18 (Bailey)	122	
19 (Hayden)	123	

Students #1 and #3 did not provide email addresses, so I could not contact them to ask them to participate in interviews. Students #4, #5, #7, #8, and #17 did not respond to the emails inviting them to be interviewed. Ultimately, the students who agreed to participate in the interview process included Student #2 (Casey, score 85), Student #6 (Blair, score 101), Student #9 (Tony, score 108), Student #16 (Terry, score 116), Student #18 (Bailey, score 122), and Student #19 (Hayden, score 123). Thus, all the students who were interviewed scored in the social/cultural end of the spectrum, with a range of scores from 85 to 123. The results are summarized in Table 2.

## Interviews

**Participants.** The participants in this study were all first-year students in the AuD program at a university on the west coast of the United States. All of the students interviewed have a bachelor's degree in the field of speech pathology and audiology, although they all received those undergraduate degrees at different universities.

The participants are listed in the order in which they were interviewed. All the participants chose to be interviewed on their school campus. A quiet room was found for each interview. The interviews were taped using the AudioMemos App on a password protected iPad. I hand-transcribed each interview within two days. In the transcriptions, pseudonyms were used

for the interviewees and for the university, and any information that might identify the interviewee or the university was redacted.

**Hayden.** Hayden learned a song in sign language in Kindergarten and fell in love with sign language. Hayden took four years of ASL to satisfy the foreign language requirement in high school. The ASL teacher talked about Deaf culture during sign language class. Additionally, Hayden's family used to frequent a restaurant that was owned by a Deaf person who used both signed and spoken language. Hayden had also met a number of Hard of Hearing people during the AuD program required clinical experience this trimester.

Hayden chose to major in speech pathology and audiology because the field provided an opportunity to work with the Deaf and Hard of Hearing community and to continue to use sign language. As an undergraduate, Hayden had the opportunity to shadow a working audiologist and was fascinated by the work. Hayden finds the problem solving required in the field of audiology to be very challenging. In Hayden's words, "I like that I can be part of a patient's journey and giving them, you know, the ability to hear, not necessarily to communicate, but giving them back audibility and the chance to hear something. I think that's really, really rewarding."

**Bailey.** Bailey originally hoped to work with children who have autism. That desire led Bailey to major in speech pathology and audiology as an undergraduate. Through these studies, Bailey discovered that the desire to work with children who had autism had expanded to a desire to work with children with all different types of developmental disabilities. Bailey found the field of audiology to be "more interesting and tangible" than speech pathology. Bailey decided to pursue a doctorate in audiology.

Bailey's undergraduate program required a semester course in ASL and another semester course in Deaf Culture. The ASL instructor was a Deaf person. Both courses required attendance at community Deaf events. Bailey expressed some discomfort about attending these events, because the hearing undergraduate students had beginning signing skills, and the Deaf people at the events probably just wanted to "relax and chat with their friends." Bailey compared these events to visiting another country. "It's the same way when you go to another country and you try to speak their language, but you're doing a really bad job and you feel bad." Nevertheless, Bailey enjoyed the Deaf community events.

*Casey.* Casey was the only person interviewed who had decided early in life to become an audiologist. Casey wanted to be an audiologist since elementary school. Casey had a Hard of Hearing friend who was teased and bullied for wearing hearing aids. Casey was struck by the injustice of the way the other school children treated that friend.

Casey had an opportunity in school to shadow a family friend who was an audiologist. That event sealed Casey's commitment to becoming an audiologist. Casey also had the opportunity as a teenager to work at a summer camp for Hard of Hearing children and has had numerous opportunities to interact with Hard of Hearing people in the clinic where Casey is doing a summer internship. Casey does not know any sign language, other than the manual alphabet that was taught in the current AuD program Deaf Culture class.

*Terry.* Terry originally wanted to be a nurse but didn't really enjoy the nursing classes that were offered in college. Terry switched to speech pathology and audiology, and quickly realized that audiology was the perfect fit. In Terry's words, "I took my first audiology class and realized that that's what I wanted to do. I always just kind of knew I wanted to help people and so how that looked kind of changed but not why I wanted to do it."

Terry learned to fingerspell at the age of ten, from a family friend who had a Deaf granddaughter. In college, Terry took three years of ASL to complete the foreign language requirement. The professor and the teaching assistant were both college-educated Deaf individuals, who taught about Deaf culture as well as ASL. As part of the sign language program, Terry had a Deaf pen pal at a state residential school for the Deaf. Terry also had the opportunity to volunteer at a Deaf children's day camp in the community. Last, Terry had a chance encounter with a Deaf woman at an amusement park and was able to ask the Deaf woman for assistance choosing an item at the store.

**Blair.** Blair did not start out in college with a clear goal of becoming an audiologist. Blair tried out different majors in college, and actually “stumbled” upon audiology as a field of study. Blair liked audiology right away. It seemed like an interesting field and aligned with Blair's interest in music. Blair's love of music contributed to the interest in helping people improve their hearing. Blair has no family members or friends who are Deaf or Hard of Hearing but has encountered Deaf and Hard of Hearing children and adults in the current internship placement through the AuD program. Blair has never studied ASL and knows only the manual alphabet that was taught in the Deaf Culture class in the current AuD program.

**Tony.** Tony started college with an interest in health care and in technology and decided to major in audiology because it was a field that perfectly combined the two interests. As part of the undergraduate major in speech pathology and audiology, Terry took two semesters of ASL. The sign language teacher was hearing but spoke very respectfully about Deaf culture. At one time, Tony took an Uber and the driver was Deaf. Tony and the driver were both excited that they were able to communicate with each other. Tony has a cousin who is Hard of Hearing and has autism. Additionally, Tony's grandparents both have age-related hearing loss. Tony's



current internship is in a geriatric clinic, so most of the patients have age-related hearing loss.

Tony has had the opportunity to observe a Deaf child in a local audiology clinic.

### **Analysis**

The interviews were coded by me and by two other individuals. One of those individuals is a Deaf person, an early childhood educator, and a doctoral (EdD) student at another university. She is a former president of a state Association of the Deaf and a former board member of the NAD. The other person is a hearing audiologist who has been working in the field of audiology for more than 20 years. She has earned an AuD degree, even though a master's degree was the requirement at the time she entered the field. The coding was done by three different individuals with three different perspectives as a form of triangulation, to ensure the reliability of the analysis. The coders were first asked to code the data deductively, to look for specific terms and passages that were more medical versus more social/cultural. The coding of the three coders were very compatible. After that, the coders were asked to look at the data inductively, to name codes that emerged from the data. Those codes were combined to create themes for this analysis.

The first analysis of the interviews was a “within-case” analysis. I examined each individual's beliefs and attitudes about Deaf and Hard of Hearing people, to explore whether those beliefs and attitudes were medical or social/cultural. Then, I conducted a “cross-case” analysis, comparing the attitudes and beliefs of the students (Merriam & Tisdell, 2016). In the “cross-case” analysis, themes that emerged from the data are highlighted. Interview analyses are reported in narrative form. Quotes from the interviewees are used, to ensure the actual words and voices of the audiology students are presented with fidelity.

**In-case analyses.** The in-case analyses were conducted to provide a comprehensive, in-depth exploration of the attitudes and beliefs of the individual AuD students about people who

are Deaf or Hard of Hearing (Merriam & Tisdell, 2016). Each of the students expressed a mixture of attitudes and beliefs – some that were medical and some that were social/cultural.

*Hayden.* Hayden had a social/cultural view of the success of Deaf and Hard of Hearing children and adults as being exactly the same as for hearing children or adults. Regardless of whether the Deaf or Hard of Hearing person was a child or adult, Hayden believed they are successful “if they can pursue whatever it is they want to pursue.” Hayden continued, “I don’t think we, we as a community, we as parents, we as family members, have any right to define anybody else’s success.” Hayden did not equate success for a Deaf or Hard of Hearing person with the ability to communicate using either signed or spoken language. Nor did Hayden equate success with the use of a hearing aid or cochlear implant (CI). Despite frequent use of the term “hearing loss,” Hayden’s view of a successful Deaf or Hard of Hearing individual was social/cultural.

Hayden expressed a social/cultural respect for Deaf culture. Hayden had been taught that members of the Deaf culture are “capital D” Deaf, as opposed to people who are “lower case d” deaf—people who are audiologically deaf but do not associate with the Deaf culture. Hayden’s understanding was that a person who is culturally Deaf views himself as different from hearing people but does not view himself as disabled or as less than a hearing person. Hayden had learned that Deaf people have been oppressed and discriminated against in the past, in the same way that other minority groups have been mistreated; this belief mirrors the history of Deaf people reported by Edwards (2012). However, Hayden did not mention language oppression as an aspect of the mistreatment of Deaf people, as documented in the Milan Edict (1880) and memorialized by the creation of the NAD (1880).

Hayden also expressed a social/cultural respect for ASL. Hayden understood that ASL is a true language, with a unique lexicon and grammatical structure. Hayden's belief was that children who are Deaf should be taught both signed and spoken languages, cautioning that "we need to use both in the right way." Hayden's tacit support for a bilingual (ASL/English) approach reflected a social/cultural belief and attitude, and is supported by research in bilingualism (Bialystok et al., 2012; Cummins, 2000; Petitto et al., 2000; Woumans & Duyck, 2015).

However, Hayden said that when people sign ASL and attempt to speak at the same time, the spoken language becomes "chopped up English," which Hayden felt was fine. Hayden expressed that if the goal is to teach a child spoken English, then an auditory "sandwich" approach could be used—that is, first use spoken English, second say the same thing using ASL and "chopped up English," then repeat again using only spoken English. Hayden's belief that it is okay to use ASL and speak "chopped up English" at the same time contradicted Hayden's stated belief that "we need to use both in the right way." Also, Hayden's opinion that spoken English should be used 2/3 of the time, while ASL is used 1/3 of the time reflected a medical view of ASL and shows a preference for spoken English over ASL.

Hayden had been to a conference recently, where a colleague, an educational audiologist, was arguing that once a child has a CI, sign language should be stopped and only spoken language should be used. The parents and the teachers at the conference thought it was appropriate to continue to use both spoken and signed language, a social/cultural view. Hayden agreed with the parents and the teachers, rather than with the audiologist. Hayden expressed concern about the confusion of parents when professionals do not give the same advice.

Hayden views the responsibility of the audiologist to parents of newly identified Deaf or Hard of Hearing infants as “tremendous.” The audiologist provides “services (hearing aids, CIs), education, and referrals.” Hayden views the experiences of a Deaf or Hard of Hearing person as a “journey,” a social/cultural term (Benedict, 2010). If the Deaf or Hard of Hearing person is an infant, the audiologist is with the child and the family for that journey; if the Deaf or Hard of Hearing person is a late-deafened adult, the audiologist is with the individual for their journey.

Hayden believes that parents of newly identified Deaf and Hard of Hearing children should be referred to parent support groups, saying that it is important for parents to have contact with other parents who have been through the same thing and understand what they are going through. This belief is supported by research (Bray, Carter, Sanders, Blake, & Keegan, 2017). Hayden, however, was unaware of any particular parent support organizations. Hayden did not mention a referral to a Deaf mentor or a Deaf organization, but when asked if a referral to a Deaf adult mentor would be appropriate, Hayden thought that would be an excellent idea. Hayden did not mention a referral to the education system.

Hayden asked me why I was doing this study, and I explained that I am exploring the beliefs and attitudes of audiology students about Deaf and Hard of Hearing people. Hayden remarked about never having considered how audiologists and Deaf and Hard of Hearing people view each other. Hayden expressed great interest in the outcomes of the study, wondering what audiologists could do differently, and saying, “We all get stuck in our ways.” In this way, the interview became reflexive, an aspect of the transformational interview process (Kezar, 2002).

**Bailey.** Bailey frequently used terms that are medical, such as “hearing loss” and “options” (Benedict, 2010), but sometimes used them in more social/cultural contexts. For example, Bailey said, “When you’re counseling, you kind of present all the options.” Had

Bailey changed the word “options” to “opportunities” the sentence could have fit into the social/cultural model. In other words, by using the word “options,” parents may think they must pick one of the options. If Bailey used the word “opportunities” instead, parents may not think they must make a choice.

Bailey recognized personal bias, commenting, “When I first learned about it (Deaf culture) I think I was surprised. I’m hearing. I only know people who are hearing, so I just assume everyone wants to hear. But it’s definitely not like that at all.”

Bailey had a medical perspective on the success of Deaf and Hard of Hearing children. Bailey tied the success of a Deaf or Hard of Hearing child to their success in their parents’ communication choice, stating, “if they’re just a success in their prospective route.” However, Bailey had a more social/cultural view of the success of a Deaf or Hard of Hearing adult, saying, “It’s like anyone. Whatever they want to be happy.”

Bailey had social/cultural views of both ASL and Deaf culture. Bailey understood that ASL is a fully formed language, “just like English” and expressed a desire to be able to use ASL better. Bailey had adopted the respectful attitude towards Deaf culture that had been taught in ASL class in undergraduate school. Bailey did not have a great deal of knowledge about Deaf culture, except that it was closely associated with the history of Deaf education. About Deaf culture, Bailey said, “I respect it. I like it. I appreciate it.”

Bailey is currently doing an internship at a clinic that works with children and parents. Bailey views the role of an audiologist who identifies a newborn infant who is Deaf or Hard of Hearing as “informational.” The audiologist does not use the words Deaf or Hard of Hearing when talking with the parents. Nor does the audiologist describe the child’s hearing level to the parents as unilateral, mild, moderate, severe, or profound. Rather, the audiologist uses the

“Speech Sound Audiogram” (Appendix F) to explain to the parents what sounds their baby can and cannot hear. If the infant has a severe or profound hearing level, the audiologist explains the “options” that are available to the families, identifying two “routes” that families may choose. Families may choose “the technology route” in order “to get as much functional hearing as they can get” or they may choose the ASL route and “join the Deaf community.” Bailey said that at the current clinic, parents who have children with severe to profound hearing levels are encouraged to use sign language, even if they want their children to acquire spoken language, an approach which is supported by researchers (Humphries et al., 2013). Despite this support for sign language, Bailey appeared to have a preference for spoken language, stating that the reason parents were encouraged to use sign language was in case spoken language didn’t develop. Bailey also stated that families were “lucky” to have a private oral school in the area.

Bailey commented that the role of the audiologist is changing, saying, “We don’t ever tell people what to do. We just tell them, like, you can do this. You can do this. And these are all great options. But it’s whatever works with your lifestyle and your ideas.”

**Casey.** Casey was the only interviewee who had a Deaf or Hard of Hearing friend before college. As an elementary school student, Casey had a Hard of Hearing classmate who used Behind-the-Ear (BTE) hearing aids. Casey was disturbed that this classmate had been teased and bullied because of the hearing aids. The injustice of the discrimination of this Hard of Hearing classmate bothered Casey.

Casey reported having little experience with the Deaf community and was only familiar with Hard of Hearing people who were assimilated into the hearing community. When asked to describe a successful Deaf or Hard of Hearing child, Casey responded that a child is a success if he or she “is able to function in society without feeling any sort of embarrassment or low self-

esteem when interacting with his or her peers.” When asked if those peers should be hearing or if they should be Deaf or Hard of Hearing, Casey responded that it would be “helpful” if a Hard of Hearing child had a peer who was also Hard of Hearing but said that doesn’t happen very often. Casey felt it was “important for them to feel comfortable with their normal peers,” reflecting a medical perspective.

Casey viewed the lives of Deaf and Hard of Hearing adults in a social/cultural way, commenting that Deaf and Hard of Hearing adults should be able to “work at a place where they feel that they’re not being discriminated (against) because of perceived disability,” Casey believed that people who are Deaf or Hard of Hearing should be given accommodations in the workplace to be able to work and provide for their families.

Casey had limited experience with sign language and with Deaf culture. Casey did not know ASL, except for the manual alphabet that had been taught in the current class on Deaf Culture. Likewise, Casey did not know anything about Deaf culture, outside of the readings that had been assigned as part of the current class. Nevertheless, Casey had a positive, social/cultural view about both ASL and Deaf culture. Casey thought it was “cool that they (Deaf people) have their own culture and they have, like, this community that they can feel supported.” As for ASL, Casey said, matter-of-factly, “Whatever enables you to communicate with others, you just gotta do it.” However, Casey did have a medical point of view that Deaf and Hard of Hearing children should be taught to use spoken language, since most people they will encounter will use spoken language.

Casey had a medical perspective of the role of the audiologist as “instructive.” Parents of Deaf and Hard of Hearing infants should be given “step-by-step” instructions about what to do. Casey believed the family and the baby should pursue “early intervention as soon as possible.”

Casey described early intervention as medical intervention—audiology, speech pathology, pediatrics. Casey expressed empathy for parents of Deaf and Hard of Hearing infants but felt the sooner they accept that “their baby isn’t perfect” and that “their baby needs help,” the child has a greater chance for success in the future. Casey felt parents should be provided whatever services they are financially capable of providing. Casey was unaware that schools provide early involvement services free of charge to families, regardless of financial ability.

Casey also felt that families should be referred to family support groups, expressing that families who are faced with a similar situation “can relate to each other.” Like other AuD students who were interviewed, Casey was unable to name any parent support organizations. Casey did not mention that families might be referred to Deaf adult role models or Deaf organizations, nor did Casey mention a referral to the school system.

**Terry.** Terry’s experiences with well-educated Deaf people may have caused Terry to have more of a social/cultural view of Deaf and Hard of Hearing people (Enns et al., 2009; Hoang et al., 2011; Velonaki et al., 2015). Terry did have the third highest score on the Attitudes to Deafness Scale. On the other hand, Terry seemed conflicted between a medical view and a social/cultural view.

In describing a successful Deaf or Hard of Hearing child, Terry responded in a social/cultural way, saying, “It’s not all that different from a hearing child. There’s just a different way of communicating.” On the other hand, Terry expressed a belief that Deaf children, who cannot access spoken language sounds, have a more difficult time learning to read than hearing children, because Deaf children cannot develop phonemic awareness and associate spoken language sounds with written letters. This belief has been disputed by current research, which shows that Deaf children who develop phonemic awareness and linguistic competence in



ASL have success in learning to read English (Mayberry, del Guidice, & Lieberman, 2011; Miller & Clark, 2011; Stone, Kartheiser, Hauser, Petitto, & Allen, 2015). Likewise, Terry expressed concern about language delays in children whose families use both signed and spoken language, saying, “The time frame just looks a little bit different because it’s more information for a little person’s brain.” The belief that children who are bilingual are language delayed has also been disputed by research (Humphries et al., 2013; Mellon et al., 2015; Petitto et al., 2000).

Terry emphasized a medical view about the importance of providing sounds to Deaf and Hard of Hearing infants and toddlers, because of the “window of opportunity” for acquiring spoken language. However, when asked if that “window of opportunity” was the same for ASL as it was for spoken language, Terry, after a moment’s reflection, expressed a more social/cultural belief that the window was the same for both signed and spoken language. Terry said, “You have to be building those same connections in your brain to be able to do that (sign), and so your neurons are still wiring and rewiring to form language.”

As for describing a successful Deaf or Hard of Hearing adult, Terry’s views were social/cultural. Terry expressed that success “has nothing to do with their ability to hear. It has to do with the way they think and their own motivation.”

Terry had positive social/cultural views of ASL. Terry had been fascinated by sign language after learning the sign language alphabet as a child. Consequently, Terry took three years of ASL in college and considered becoming a sign language interpreter.

Terry likewise expressed a social/cultural view of Deaf culture, and had knowledge of the history of the oppression and discrimination Deaf people have faced, saying, “I know a lot of that stems from the fact that Alexander Graham Bell wanted to pretty much get rid of Deaf people and so that kind of formed this community and culture that is the way it is.” Later, Terry added,

“Like when you look at the way certain minority groups have been treated throughout history, having those adverse feelings towards the people who have wronged you in the past, it’s a common trend throughout everyone in our history.” Terry did not specify that language oppression was an aspect that led to the development of Deaf culture.

On the other hand, Terry believed that discrimination also existed within Deaf culture, towards people who are oral, wear a hearing aid or a CI. Terry felt that people who are culturally Deaf feel that those people are “not really Deaf.” This belief was supported by Dowd (2017), who reported that she had been described as “not Deaf enough.” Terry felt an injustice about this attitude, and that “the rules have to bend at some point.”

Terry viewed the role of the audiologist toward the parents of newly identified Deaf or Hard of Hearing infants as “informational” over time. Terry talked about giving the families time to go through the “grieving process”—a medical term (Benedict, 2010)—before giving the families too much information. When giving information, Terry expressed that “you lay out all the options” and talked about the different “roads” families can take. When describing these “roads,” Terry consistently mentioned ASL as the first opportunity.

Terry knew the name of the state early involvement program but incorrectly stated a referral to that program is made only if the parents choose to provide amplification and pursue spoken language for their infant. (IDEA 2004 requires that all infants with disabilities be referred to Part C services within seven working days of identification.) Even though Terry used the medical term “options” (Benedict, 2010) in the following sentence, the context was social/cultural and the meaning would have been social/cultural if the word “opportunities” had been used—“I feel like you’re also not allowing kids to thrive if you won’t let them explore their

best options.” Terry did not mention the role of the schools or of the teacher of the Deaf in the “informational” system.

Terry did not use the term “horizontal identity (Nutt, 2016; Solomon, 2012), but seemed to have an understanding of this social/cultural concept. Terry commented that having a Deaf or Hard of Hearing baby is “hard for parents to accept, mainly because your kids are different from you.” Later, Terry added, “I mean, maybe at a subconscious level, I think, how can you not know?”

Terry demonstrated a medical perspective when asked if parents should be offered a referral to a Deaf mentor or Deaf organization. Terry felt that some parents would not be ready for that. Terry did not think parents should be offered the exposure to a Deaf role model automatically. Terry commented that some parents “fly off the handle when you say the word Deaf” and so it becomes the role of the audiologist “to get a feeling for the family” and determine when the family might be ready to meet a Deaf or Hard of Hearing adult. In this capacity, the hearing audiologist maintains power over the parents and over the Deaf community (Mitchell, 2013).

Terry did feel that all parents should be referred to parent support groups. She had heard of the Hands & Voices parent support organization but was not very familiar with it.

**Blair.** Blair expressed social/cultural views of successful Deaf or Hard of Hearing children and adults and about ASL. In Blair’s view, a successful Deaf or Hard of Hearing child is “independent” and “takes care of himself.” Likewise, a successful Deaf or Hard of Hearing adult is “independent” and has a job. Blair felt that Deaf and Hard of Hearing children and adults should feel comfortable communicating in whatever language, signed or spoken, they feel is most efficient for the individual, whether at work, at home, or in the community.

Blair did not know any sign language except for the manual alphabet that had been taught in the current Deaf Culture class. Blair understood that ASL is a true language other than English, although at one point, Blair referred to ASL as a “communication system” rather than as a language. Blair expressed a social/cultural view that sign language was “cool” and that a person could probably express emotions better with sign than through spoken language because sign language is “more animated.”

About members of the Deaf culture, Blair said, “I know they’re very proud. They don’t like the idea of being fixed because they don’t feel like they’re broken.” On the other hand, Blair felt that culturally Deaf people discriminate against Hard of Hearing people because they are “not completely Deaf.” Blair also expressed that culturally Deaf people would also discriminate against a Deaf person who used signed English rather than ASL.

Blair knew there are numerous technology options that can benefit Deaf and Hard of Hearing people. Blair viewed it as the role of the audiologist to explain the available technology options to people who are Deaf or Hard of Hearing but did not believe the role of the audiologist is to insist that Deaf or Hard of Hearing adults take advantage of technology options. In Blair’s view, decisions about the use of technology were dependent on the individuals. Blair expressed the opinion, “They may feel pressure I suppose from society but ultimately it’s up to them.”

Blair said, however, that Deaf and Hard of Hearing children do not have a choice. The choice belongs to the child’s parents. Blair felt the responsibility of the audiologist who identifies a Deaf or Hard of Hearing child is to “lay all the options on the table” and tell the parents “the benefits and the risks or consequences of each.” Blair described that while there are risks involved with CI surgery, a CI would be extremely beneficial for a child with profound hearing levels. Blair expressed a medical viewpoint, believing that a child with a CI would

develop speech and language “normally” and would not “need” to use sign language. If they had a CI at a young age, a Deaf child would become a hearing child. Thus, Blair expressed that the benefit of a CI would be that the child would become a “normal” hearing child and assimilate into hearing society. Blair’s beliefs about the benefits of the CI have been disputed by some researchers (Humphries et al., 2013; Osberger et al., 2017) and supported by others (Flexer, 2015).

If the parents choose to use ASL, the consequence would be that the whole family would have to learn ASL. Blair also expressed a belief that, because the child would still be Deaf, he would have difficulty learning to read and write. Blair was aware of research “that has said that Deaf children can only achieve a certain level of education in reading and writing.” Blair is correct that some studies, such as the Babbidge report (1965) have shown the poor academic performance of Deaf and Hard of Hearing students. But, the studies have not blamed that academic failure on the fact that the children were Deaf. Even Blair expressed confusion, because the class had recently had a young Deaf adult guest speaker, who signed, was attending college and who read well.

Blair’s recommendation to parents of a newly identified Deaf or Hard of Hearing infant would be “that they should pursue some type of amplification because I think that the child will benefit more if they do. I think the child is kind of better off in a sense, as bad as that sounds.”

Despite a preference for oral education, Blair expressed a social/cultural view that Deaf and Hard of Hearing children would probably feel more comfortable attending school with other Deaf and Hard of Hearing children and that their needs would be better met at a school or program specific to Deaf and Hard of Hearing children. Blair said that Deaf children might be academically successful at a hearing school if they had accommodations, such as a sign language

interpreter, but that they might be the only Deaf child at a hearing school, which could lead to social isolation. Blair's viewpoint is supported by the CEASD (n.d.) and by the Legislative Affairs Office (LAO, 2016).

**Tony.** Tony expressed a social/cultural belief that Deaf and Hard of Hearing children can be more successful if they are provided access to both spoken and signed languages. Tony said, "I don't think auditory/oral is best. I don't think that signing is the best. I think we need to give the kid every single thing that we can to succeed," later adding, "and then the kid can decide if they have both." Tony then clarified that not all parents will provide both for their Deaf or Hard of Hearing child, saying the decision of parents would depend on many variables, including the distance they live from services or sign language classes, their educational level, their socio-economic status, and how much time the parents have to learn new skills. Tony believed that it would be easier for a more affluent family to provide more to their child, and that affluent families would be more likely to provide both signed and spoken language to their child.

Tony expressed a social/cultural concern that both children and adults who are Deaf or Hard of Hearing, whether they are born Deaf or become Deaf later in life, can be isolated, even in their own families, and even if the hearing level is mild. Tony's belief is supported by numerous researchers and reports (AAA, n.d.; Dewane, 2010; LAO, 2016). Tony said that if parents can provide children with both signed and spoken language, that "really sets the kid up to thrive better." Tony knew that the first 12 months of a child's life are "critical" for language acquisition and believed that a child with a severe to profound hearing level should be provided with ASL, even if the family is planning to have the child get a CI, stressing that auditory deprivation "can be really awful" and can be alleviated by providing the child access to visual language, a belief supported by Humphries et al. (2013). Tony also believed that parents should

provide both signed and spoken language to child after they receive a CI and that it would be too “stressful” for a child to have signed language taken away; this belief supports the belief of Tony’s colleague, Hayden. Tony said that may not be “abusive, but it’s wrong” and that having two languages (ASL and a spoken language) makes the child bilingual and gives a child “a stronger skill set” – a belief supported by numerous researchers (Humphries et al., 2013; Mellon et al., 2015; Petitto et al., 2000).

Tony believed that a Deaf adult (with a severe to profound hearing level) is bound to be more successful if they are allowed to use ASL from the time they are identified. As for children or adults with mild to moderate hearing levels, Tony expressed it would be great if their families also learned ASL and taught them to use it, but that they could thrive without exposure to ASL. Tony added that “technology can only go so far” and that hearing aids will never “fix” a person who is Deaf or Hard of Hearing.

Tony took two semesters of ASL in college and knows that it is a true language. Tony described ASL as “really cool,” “amazing,” and “wonderful” (a social/cultural perspective), but also expressed that learning ASL is “really difficult.” Tony expressed a medical perspective that it is easier for a Deaf or Hard of Hearing person “to succeed in the world we live in with auditory/oral (skills), as unfair as that is,” later adding, “It’s great that we have that option (ASL) for people that can’t speak.”

While Tony believes that “signing is a wonderful thing,” Tony believes that Deaf culture is wrong, because it is “too rigid and hard.” Tony’s belief is that “capital D Deaf” people believe only in ASL, and do not want people to be bilingual and bimodal. At various times in the interview, Tony described Deaf culture as “selfish,” “limiting,” and “exclusive,” and that it

would be difficult for a person with a mild to moderate hearing level to “find a place for themselves” in Deaf culture.

Tony viewed the role of the audiologist in a newborn hearing screening program as “educational”—making sure parents know all of their “options”—to counsel them and to “just be there for them,” to make sure they follow up with all of their appointments and to make sure they “stick to their therapy process and seeing the doctors.” Tony would ensure that families are referred to parent support groups, but like other students, was not able to name a parent support organization. Tony would ensure that the family is referred to a pediatrician and to a speech pathologist. While Tony expressed that there would be “a huge network—a team working together” for the family, the team Tony mentioned included only medical professionals. Tony did not mention that a Deaf mentor/role model might be part of the team. Nor did Tony mention a referral to the school system or to a teacher of the Deaf. While Tony loves children, Tony does not want to work with children because it would be “too emotional.” Telling parents their infant is Deaf or Hard of Hearing would be too hard because the parents would feel like something is wrong with their “perfect child.” Tony expressed a social/cultural attitude by saying, “I don’t ever want a parent to feel like their child is limited, because they’re not.”

**Cross-case analyses.** After completing a within-case analysis of each student interviewed, a cross-case analysis was conducted to discover common themes that emerged from the data related to the research questions. Given the feedback from the other two coders, I was able to identify a total of 21 codes that have been condensed to themes that are responsive to the research questions.

**Research question one.** What are the attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing?



*Use of medical terminology.* The students tended to have a social/cultural viewpoint about people who are Deaf or Hard of Hearing, according to the Attitudes to Deafness Scale, yet often spoke about Deaf and Hard of Hearing people using medical, rather than social/cultural terms (Benedict, 2010). The students used the medical term “hearing loss” when speaking of people who are Deaf or Hard of Hearing, rather than the more social/cultural term “hearing level.” For example, Tony described a person who has “a moderate sensorineural hearing loss.” Blair mentioned that spoken language may be delayed, depending on an individual’s “type of hearing loss.” Bailey spoke of “kids that have a large hearing loss.”

Another medical term that was used frequently was the word “options,” as opposed to the more social/cultural term “opportunities” (Benedict, 2010). Bailey mentioned that the audiologist always “presents both options.” Blair said that after an infant is identified as Deaf or Hard of Hearing, the audiologist tells the parents, “There’s numerous options they can choose from.” Even when the meaning of the sentence is social/cultural, the medical term “options” was used. For example, Terry remarked, “I feel like you’re also not allowing kids to thrive if you won’t let them explore their best options.” Hayden was concerned when an educational audiologist suggested that the family of a child with a CI should stop signing, and only use spoken language. Hayden commented, “You shouldn’t take that option away.”

Several students referred to hearing people and the use of spoken language as “normal.” Both Hayden and Tony referred to themselves as “normal.” Blair said that Deaf children with CIs “develop speech and language normally, hopefully.” Casey mentioned that it is important for Deaf and Hard of Hearing children “to function as normally as possible to be integrated in society.” Tony expressed sorrow for the perspective of parents of newly identified Deaf and Hard of Hearing babies, stating, “They never get to enjoy that baby as normal.” Tony’s own

perspective was that a Deaf or Hard of Hearing baby is fine, but Tony felt that parents would not view their infant in that way.

The students sometimes spoke of being Deaf or Hard of Hearing using language that implied it is better to be hearing than to be Deaf or Hard of Hearing. Blair viewed it as the “duty” of the audiologist to inform the parents of a newly identified Deaf or Hard of Hearing infant of “how bad it is.” Casey thought it was important to give the parents some time to “accept that their baby isn’t perfect.” When asked if an audiologist should inform parents of an infant with mild to moderate hearing levels about the possibility that the levels may progress to severe or profound levels, Terry said no, “because no parent wants to be told the potential that something bad is going to happen when that’s not necessarily the case. Everyone wants the good statistic versus the bad reality.”

*Success for Deaf and Hard of Hearing children and adults.* In general, the AuD students saw the success of Deaf and Hard of Hearing children in a social/cultural way, as being no different than the success of a hearing student. According to Blair, “They’re independent. They can just take care of themselves.” Hayden expressed, “A successful Deaf or Hard of Hearing child is going to be successful if they can pursue whatever it is they want to pursue.” Terry emphasized that success does not have to do with the ability to hear – “It’s not all that different from a hearing kid...I think it’s all a mindset...and a lot of that has nothing to do with their ability to hear.” Bailey expressed the medical perspective that a child’s success has to do with the language choice (spoken or signed) made by the parents, saying, “If they’re just a success in their prospective route.”

All the students had a social/cultural view of successful Deaf and Hard of Hearing adults. They viewed the success of Deaf and Hard of Hearing people in the same way they would view

the success of hearing people – working, conducting activities of daily living, having relationships, raising a family, and defining their own success. Blair said, “Success is like if they have a job – or just, you know, going to the grocery store or with a significant other, doesn’t matter.” Bailey said, “It’s like anyone. Whatever they want to be happy. Fulfilled.” Casey expressed, “They’re accommodated at their job, so that they’re able to just successfully maintain their position and provide for their family.”

*The difference between Hard of Hearing and Deaf.* Several students discussed the difference between being Hard of Hearing and being Deaf. Terry described the difference as “the difference between kids who can benefit from regular amplification and kids who can’t benefit from regular amplification.” Blair described the difference between Hard of Hearing and Deaf people in this way, “Hard of Hearing can still hear. They just might need constant clarification. Like they’ll ask ‘what?’ a lot. Kind of like lean in or something. And then I’d say Deaf would be – they might be able to hear but it would take a lot.” In other words, with regular hearing aids, Hard of Hearing children can access and acquire spoken language; Deaf children cannot. With a surgically implanted CI, some Deaf children can access and acquire spoken language.

Despite using the words “Deaf” and “Hard of Hearing” frequently, several students said they would not use the words “Deaf” or “Hard of Hearing” when talking with parents. Terry said that some parents would “fly off the handle” if the audiologist used the word ‘Deaf’” so audiologists tell parents their child has “a hearing loss.” Terry acknowledged that the reason parents get upset by the word “Deaf” is because of a “social construct” about the word. Bailey, who was doing an internship at a facility that participated in the newborn hearing screening program, said the audiologist does not use the words Deaf or Hard of Hearing when talking with

the parents. The audiologist does not even describe the child's hearing level to the parents as unilateral, mild, moderate, severe, or profound. Rather, the audiologist uses the "Speech Sound Audiogram (see Appendix F)," to explain to the parents what sounds their baby can and cannot hear.

*Options for Deaf children.* The students spoke about the Deaf child's "communication options"—meaning spoken language (English, Spanish, etc.) or signed language (ASL). With newborn hearing screening, infants who are Deaf or Hard of Hearing are often identified as early as three months of age (NCHAM, n.d.). Consequently, parents must make a decision about what signed and/or spoken language(s) they will use in raising their Deaf or Hard of Hearing child (Li et al., 2003).

Some of the students described the "options" in a "this or that" manner. In other words, the parents must decide if they are going to use either spoken language or signed language with their child. Blair described the role of the audiologist as "laying the options on the table" so that the parents can choose. Bailey and Blair both described the use of technology as the opposite of learning ASL. Bailey said, "You're going down the technology route and you want to get as much functional hearing as you can get, or you're going down a route of you're going to join the Deaf community and learn ASL. I think of it as like two." Blair was clear about encouraging parents of children with severe to profound hearing levels to choose the technology route, stating, "They would be able to hear and develop speech and language normally, hopefully. I don't think they'd need to use a manual form of communication." The students said the parents' choices depend on many variables, including what services are available in their community, distance they live from services, parent educational level, family cultural beliefs, child's hearing levels, family socio-economic level, and so on.

Other students expressed social/cultural support for ASL/English bilingualism and did not feel the parents need to make a choice between the two. This attitude is consistent with the position of the State Superintendent of Public Instruction (California Department of Education [CDE], 2013b). In Tony's words, "We need to give the kid every single thing we can to succeed, and let the child, when they're older, decide." Terry said, "You're not allowing the kid to thrive if you won't let them explore their best options." Hayden's belief was that children who are Deaf should be taught both spoken and signed languages, cautioning, "we need to use both in the right way." Both Baily and Tony felt that, even if the parents have chosen to have their child receive CI surgery, the parents should be encouraged to sign during that child's first year of life, before the surgery is done. Bailey's concern was medical, expressing that it was important to ensure the parents kept all options open in case the child did not acquire spoken English despite the CI. Tony expressed a more social/cultural view that Deaf children do not have access to spoken language before the CI can be done at 12 months of age, and ASL provides access to language during the critical first year. Children who are Deaf have "auditory deprivation" before the CI. Tony also expressed the importance of continuing to use sign language even after the CI surgery, even if the child is acquiring spoken language, saying it would be "very stressful" and it would "shake up a kid's world" and that taking away signed language may not be "abusive, but I think it's wrong." Hayden also expressed the importance of continued ASL use after a child receives a CI.

Even though the students all agreed that it was ultimately up to the Deaf person to determine if they want to use spoken or signed language, or both, there was disagreement about when a Deaf person has the right to make that decision. Blair was very clear, saying, "Unless you're a child. Then you don't really have that choice." Blair and Casey would both encourage

parents to pursue the technology route and pursue listening and spoken language. Tony and Terry both believed that Deaf children should be provided with everything so that they can decide for themselves. Hayden commented, “There’s a lot of controversy. It’s like when somebody can make their own decisions for themselves.” Hayden remarked that different parents have different parenting styles. Some prefer to follow the child’s lead and let the children decide; other parents make decisions for their children until the children are adults. Hayden said, “Ultimately, it’s whatever that person wants to do and be or choose.”

*Options are only for Deaf children, not for Hard of Hearing children.* The students were clear that language options are presented only to parents of children with bilateral severe to profound hearing levels (Deaf children) and are not presented to parents of children with unilateral hearing or bilateral mild to moderate hearing levels (Hard of Hearing children). Terry said, “I think mild hearing loss – typically, they’re the kids that we just fit with amplification right away and just monitor. They’re the kids where you don’t really put any sort of options out there.” Blair added, “If it’s mild, they can just do like a hearing aid, which would help them.” On the other hand, Bailey said that if “we find that they have a profound hearing loss, you let the parents know, like, these are your options.” Tony did comment that it would be “great” if parents of children with mild to moderate hearing levels learned to sign, but that those children can “thrive” without sign language. But, Tony said, “For severe to profound loss, I think ASL is probably the best option.”

*Critical period for listening and spoken language development.* The topic of the “critical period” for hearing and for spoken language development was mentioned by several students. Tony commented that Deaf and Hard of Hearing children should be given “their critical period with sound.” Blair said, “I know there’s a critical time period for the development (of spoken

language), and if you miss it because you can't hear, then I don't think you can ever get it back." Finally, Terry said, I know that language has a critical period and that if you're not getting access to those sounds, then you're not developing them." These beliefs are consistent with the research of Flexer (2015). When asked if the "critical period" also applied to signed language, Terry reflected and responded in a more social/cultural way, "Either way, you have to be building those same connections in your brain, so your neurons are still wiring and rewiring to form language. I feel like the critical period is equally important for either one." This belief is consistent with research that shows that the period of time from birth to three years of age is critical, regardless of whether the language is spoken or signed (Humphries et al., 2013).

Two students mentioned that Deaf children have difficulty developing literacy. They attributed those difficulties to not being able to hear during the critical period of birth to three. According to Terry, "I know that's why, like reading and writing, they're harder for someone who's Deaf, because they don't have phonemic awareness." Blair was aware of "a lot of research that has said how Deaf children can only achieve a certain level of education in reading and writing." This was Blair's reason for encouraging parents of Deaf children to pursue technology and allow their children to become "hearing" and "acquire speech and language normally." Blair expressed confusion, however, because the class had recently had a young Deaf adult guest speaker who used sign language, was in college, and read well. The concern that Deaf children have difficulty learning to read because of auditory deprivation has been disputed by current research (Mayberry et al., 2011; Miller & Clark, 2011; Stone et al., 2015).

*Isolation.* The topic of isolation came up several times in relation to Deaf and Hard of Hearing children. It also came up in relation to Deaf and Hard of Hearing adults, whether they are born Deaf or Hard of Hearing or whether they are late-deafened, by genetics, illness, injury,

or age. Casey commented about the Hard of Hearing child in elementary school who was teased and bullied for wearing hearing aids. Blair said the Deaf and Hard of Hearing children “may feel more comfortable at a Deaf school, just because they may be the only one, or one of a few, at a typical school.” Tony expressed great concerns about the importance of communication and the costs of isolation, saying, “If they can’t communicate, that’s the biggest isolation . . . Like if somebody’s isolated, they could kill themselves . . . Isolation can just destroy someone.” The potential for harm caused by the isolation of Deaf and Hard of Hearing people is supported by the literature (AAA, n.d.; Dewane, 2010; Dukovic et al., 2014; LAO, 2016).

*Deaf culture.* The AuD students varied in their knowledge of and experience with Deaf culture. The students were currently enrolled in a Deaf culture class that was required for the AuD program. Casey and Blair had no knowledge of Deaf culture except for what they had learned in the class. Casey had a Hard of Hearing friend in elementary school, but that friend was not culturally Deaf. Hayden’s family had frequented a restaurant owned by a Deaf man and Hayden had taken ASL classes in high school which had included information about Deaf culture. Bailey, Tony, and Terry had taken ASL and Deaf culture classes in college and had Deaf instructors. Tony had a cousin who was Hard of Hearing and had autism, and grandparents who had age-induced hearing loss. The students mentioned that several members of their cohort were Hard of Hearing, but none of those people considered themselves to be culturally Deaf. None of the students interviewed mentioned having any current friends who were Deaf nor any current involvement with the Deaf community.

All the students held a social/cultural belief that Deaf culture exists and should be respected. Casey had very limited knowledge of Deaf culture, but thought, “It’s cool that they have their own culture and they have like this community that they can feel supported.” Bailey



had learned about Deaf culture in undergraduate school, and admitted, “When I first learned about it, I think I was kind of surprised. Because, of course, I’m hearing. I just assume everyone wants to hear. But it’s definitely not like that at all. And I totally respect that.”

Terry and Hayden, who had the most exposure to Deaf culture, had an understanding that Deaf culture had grown out of the history of oppression and discrimination of Deaf people by hearing people. Terry commented, “I know a lot of that stems from the fact that Alexander Graham Bell wanted to pretty much get rid of Deaf people and so that kind of like formed this community and culture (Bell, 1883). Later Terry added, “When you look at the way like certain minority groups have been treated throughout history, having those like adverse feelings towards other people who have wronged you in the past, it’s a common trend throughout everyone in our history.” Neither Terry nor Hayden mentioned language oppression or historical attempts to eliminate ASL (Traynor, 2016) as an aspect of the oppression of the Deaf community.

Even though all the AuD students expressed respect for Deaf culture, three of the students felt that discrimination occurs within the Deaf culture, towards individuals who are Hard of Hearing, who are oral Deaf, or who use a CI or hearing aid. Tony described Deaf culture, at various times during the interview, as “selfish,” “limiting,” “wrong,” “exclusive,” and “unfair.” Tony described it as “a dying culture,” saying that Deaf culture wants “strictly sign” and does not want people to be “bilingual/bimodal.” Blair said, “I feel like they (people who are culturally Deaf) discriminate against other Hard of Hearing people, because they’re not completely Deaf.” These students described Deaf culture in the manner that Berry (1997) explained the concept of “separation” and Maxwell-McCaw and Zea (2011) explained the concept of “Deaf identity.” Terry expressed that culturally Deaf people may feel that Deaf

people who communicate orally or who have a CI are “not really Deaf.” Terry’s belief is supported by Dowd (2017), who described her experience of being called “not Deaf enough.”

Terry expressed that we live in “a culture where everyone is so mixed” and that the Deaf culture “rules just have to kind of bend at some point.” Terry felt that Deaf culture should include people who, for example, have a moderate hearing level, wear hearing aids, and want to use both spoken and signed languages. Terry’s beliefs mirror the concepts Berry (1997) called “integration,” and Maxwell-McCaw and Zea (2011) called “bicultural identity.” Terry’s beliefs are also reflected by Ladd (2003), the California Association of the Deaf (2017), the Canadian Cultural Society of the Deaf (1997), and the Deafhood Foundation (2017). All of these authors and associations offer a more inclusive definition of Deaf culture.

While not using the term “horizontal culture” (Nutt, 2016; Solomon, 2012), Terry seemed to have an understanding of the concept. When discussing Deaf culture and the possibility that children may grow up to be culturally Deaf, Terry remarked, “I think for parents that’s a really hard thing to grasp. It’s a hard thing for them to accept mainly because their kid’s going to grow up with a very different life.” I asked Terry if parents really knew that when their child was first identified, and Terry replied, “I mean, maybe at a subconscious level, how can you not know? You have to know it at some level.”

*Technology.* While audiologists are experts at hearing technology, the AuD students very much viewed the use, or non-use, of technology as a personal choice, at least for Deaf and Hard of Hearing adults. Blair said, “If they want to pursue it, it’s up to them.” Terry remarked, “We’re not going to push someone who refuses to wear hearing aids.” And Bailey said, “I’m pro-technology if you want technology.” They also viewed the type of hearing technology used as a personal choice. As Terry pointed out, “What works for you may not work for someone

else.” Hayden commented, “I think for the right person, for the right situation, if it’s appropriate, try it.” Tony recognized the limits of the technology, stating, “Technology can only go so far. We’re not restorative. We’re aiding. So, I think technology’s great, but you have to work at it a lot.”

Whether or not a Deaf or Hard of Hearing infant or child uses hearing amplification technology is a parental decision. Most of the audiologists would offer hearing technology to parents of children with severe to profound hearing levels but would leave the decision up to them and would not make a recommendation. Blair and Casey, however, were very pro-technology for Deaf and Hard of Hearing children. Casey said, “Denying the baby any hearing may negatively impact the baby’s life in the future.” And Blair said, “My recommendation would be that they should pursue some type of amplification, just because I think that like the child will benefit more if they do.” Blair and Casey had the two lowest scores on the Attitudes to Deafness Scale, supporting the viewpoint of Cooper et al. (2004) that a lower score on the scale indicates a more medical view of Deaf and Hard of Hearing people.

Hayden talked about the concept of “auditory fatigue” and how exhausting it can be for a Deaf or Hard of Hearing person to wear an amplification device, whether a traditional hearing aid or a CI. Even for adults who have lost their hearing, wearing an amplification device is tiring, because they are having to “learn to listen” all over again. For children, “they’re trying to learn how to listen at the same time they’re trying to learn how to learn, like the concept of math or social studies.” Hayden added, “So they get home and they are just tired.” The concept of “auditory fatigue” is supported by research (Clason, 2017).

The cost of hearing amplification technology was mentioned by both Casey and Bailey. Casey said patients should get the technology they feel comfortable with and that they can

afford. Bailey discussed a difficulty in that the state's financial assistance program only helped those families who had a very low annual income, and that other families had to purchase hearing aids, which can be very expensive. Therefore, the audiologist has to help the families figure out what kind of amplification they can afford.

Visual technology was not asked about during the interview, but Hayden mentioned that visual technology, not just hearing technology, has benefited Deaf and Hard of Hearing people. Hayden mentioned that emails, texts, videophones, and video relay systems have provided more options for people who are Deaf or Hard of Hearing to converse with hearing people. The use of both hearing and visual technology represents a social/cultural perspective (Benedict, 2010).

***Research sub-question one.*** What are the attitudes and beliefs of audiology students about sign language?

*ASL is a true language.* Most of the students recognized ASL as a true language. Bailey said, "It's like a real language, a fully formed language, just like ours, just like English." Hayden said, "I respect it. I think it should be used. I think it's fascinating that people have come together and created this language, just like I mean, just like any other language." And Tony expressed, "I didn't know before I started learning sign language—it's its own language. I didn't realize it didn't really follow English."

Blair, however, described ASL as "a manual form of communication" rather than as a language. At the same time, Blair was positive about ASL, saying, "I think it's great, really. I think it's cool because it involves the whole body, and it's more animated."

Other students expressed the same positivity about ASL. Terry "had an infatuation with sign language since I was a kid." Hayden said, "It's an art as well as a language." Tony thought

“It’s a really amazing thing.” Hayden knows “It differs by country, which is fascinating. I think it’s ingenious, really.”

*I wish I could sign better.* All the students who already knew some ASL expressed a desire to improve their skills in the language. Bailey, who had only a semester of ASL in the undergraduate program, said, “I wish I knew sign language.” Terry, who had three years of ASL as an undergraduate, said, “It’s something I would like to get better at.”

The students had reasons why they couldn’t improve their signing skills or take ASL classes. Tony said, “If I wasn’t in grad school I’d probably want to try to learn it, but I think it’s really difficult.” Several students mentioned there were not many opportunities in the community for them to take ASL classes or to meet and practice signing skills with Deaf people. Hayden mentioned that the current AuD program used to teach sign language, “but they took it out of the curriculum, which was really disappointing to a lot of our class. It’s a huge part. We’re working with a population that is Hard of Hearing and Deaf.”

Casey and Blair, who had not previously had ASL classes, expressed a positive attitude about ASL. Yet, neither student expressed a desire to learn more ASL or to meet more Deaf people who use ASL.

*Spoken language is preferable to ASL.* While the students expressed great respect for ASL, they showed a preference for spoken language, which reflects a medical perspective and indicates they do not view the two languages to be of equal value. Bailey commented that parents near the school were “lucky” that there is a rather famous oral school in a nearby community. Casey commented, “I feel pretty strongly that they should be taught the spoken language. Having the ability to speak is quite important.”

Sometimes, the expressed preference was apologetic. Tony's comment was, "I think it's easier to succeed in the world we live in with auditory/oral, as unfair as that is." And Blair felt that children should wear an amplification device and learn to hear and speak, because "the child will benefit more if they do. I think the child is kind of better off, in a sense, as bad as that kind of sounds."

It seemed that some of the students viewed ASL as a last opportunity for Deaf people who cannot learn to communicate using spoken language. Blair commented that if children receive CI surgery, they can become hearing and do not "need" sign language. Tony expressed support for ASL/English bilingualism; at the same time, Tony said, "I think it's great we have that option (ASL) for people that can't speak." Bailey said parents who choose to have their children receive CIs and are pursuing spoken language outcomes are encouraged to use sign language before their child has CI surgery. But Bailey's reasoning was, "A lot of people don't get benefit, if you have that major of a hearing loss, from technology. So, I think just always keep those options."

***Research sub-question two.*** What are the attitudes and beliefs of audiology students about their role in the educational system as it relates to Deaf and Hard of Hearing children and their families?

*Audiologists are part of the medical team that serves families.* Many of the students understood that Deaf and Hard of Hearing children and their parents are served by a team of professionals. Tony said, "You know, it's going to be a huge network, a team working together. You just have to give them (the parents) all the parts of the puzzle. I mean, like, not just one piece." However, the students viewed the team from a medical perspective. Terry mentioned, "a lot of hospitals are moving towards an interdisciplinary approach," and named the members of

the interdisciplinary team as the speech pathologist, the otolaryngologist, the social worker, and the audiologist. Bailey also referred to the team. “It’s like the surgeons, the speech pathologist, and the audiologist.”

Casey had a strong belief in the power and importance of early involvement, which Casey referred to using the medical term “early intervention” (Benedict, 2010). Yet Casey viewed early involvement only from a medical perspective. Casey named the medical professionals in early involvement programs as the audiologist (“to make sure the kid is able to hear”), the speech pathologist (“to make sure the kid is able to produce whatever sounds they’re hearing”), and the pediatrician (“to make sure the kid is not suffering from whatever else pathology”). Casey expressed concern about the cost of early involvement, viewing early involvement solely from the perspective of medical intervention. “I’m just not sure about how expensive that would be.” Casey was unaware that the schools provide early involvement services free of charge to families, through the IDEA Part C programs.

*Responsibility of the audiologists towards parents.* Blair and Bailey both mentioned the role of the audiologist is to perform the audiological evaluation that identifies an infant or a child who is Deaf or Hard of Hearing. Blair used the medical term “diagnose,” while Bailey used the social/cultural term “identify” (Benedict, 2010).

All the students focused much more on their role after the infant or child has been identified. While all the students believed it is the responsibility of the audiologist to let parents know what their “options” are, Hayden, Terry, Bailey, and Tony saw the responsibility of the audiologist towards parents as “informative” or “educational.” According to Hayden, “I would start with whatever options that are appropriate for the child. They fundamentally have to understand what the hearing loss is, where it’s going, and what we could do for the hearing loss.”

Terry said, “I think it is our responsibility to give them access to all their options and to make sure the parents know it is OK for them to make any decision and allow the parent to feel like they have control.” Tony’s thoughts were, “Laying out all options is important from the get go. I think you owe it to them to give them all the knowledge.” Finally, Bailey said, “When you’re working with patients, you let them lead and you give them options. I’m not telling anyone to do anything.”

Casey and Blair were more directive. Casey said the audiologist’s responsibility is to tell parents “the truth,” adding, “hiding the truth will make things worse down the line.” The job of the audiologist is to give the parents “step-by-steps on what to do next” and “instructions on how to cope and who to see.” Blair said, “I think it’s my duty just to diagnose it, how bad it is, and to tell them exactly what it is, and give them their options for whatever they deem necessary.” Blair added, “My recommendation would be that they should pursue some type of amplification, just because I think that the child will benefit more if they do.”

All the students expressed empathy for parents of newly identified Deaf and Hard of Hearing children. Terry explained that all parents go through a “grieving process”—a medical term (Benedict, 2010)—so it is important to give them information over time, not all at once. Hayden talked about being on a “journey”—a social/cultural term (Benedict, 2010)—with the child and parents, and how important it was to ensure the parents know it is “not their fault” and that “nothing is wrong with their child.” Tony felt it was important to “support parents and let them know it’s OK—your child is going to be OK.”

Three of the students felt it was important for the parents to be referred to parent support/parent connection organizations. Casey would ensure that parents get connected with other parents who have a “similar situation” because “when babies are born with profound



hearing loss, they can relate to each other.” Tony said, “I think for parents, really getting the parents in a group of other parents, because it’s going to be a stressor on your life.” According to Terry, providing access to other parents “who actually know what they’re going through” shows parents that having a child who is Deaf or Hard of Hearing is “not like an end all for their child’s life.” Parent-to-parent support has been supported by research (Bray et al., 2017).

The AuD students also talked about the responsibilities of the parents to provide everything they possibly can for their child. Hayden said, “All I want to do is give my child the best opportunity at everything. And if they grow up and feel like I didn’t do that for them, I would feel tremendously guilty.” Casey said that parents just have to “face the challenge, this obstacle, head on and then resolve it.” Tony said, “You really have to advocate for your child.” At the same time, Tony cautioned that it is the parents’ responsibility “to be adamant on sticking to their therapy schedule.” Bailey warned that when medical teams are determining if a child is a candidate for a CI, parents “play a huge role in like their decision-making process,” so that if parents miss appointments or do not require their children to wear their hearing aids, the child might not be selected as an implant candidate.

*Role of Deaf role model or Deaf organization.* When asked what referrals they would make for parents of newly identified Deaf or Hard of Hearing children, none of the students mentioned referring the families to Deaf agencies, organizations, or adult role models. When asked about the idea of a referral to a Deaf adult role model, Hayden thought it was a great idea. Hayden said that when parents learn their child is Deaf or Hard of Hearing, they often assume their child will never succeed in school or get a job. They may assume their child will get teased or bullied. But, “if they could speak with an adult who’s been through it all and they could tell them their story, it’s like ‘OK, it’s not the end all be all.’” The importance of Deaf mentorship

has been supported by research (Braun, Gormally, & Clark, 2016). Starting in 2016, the Newborn Hearing Screening grants provided to states by the United States Department of Health and Human Resources require the states to establish a Deaf adult role model program (HRSA Maternal & Child Health, 2016).

Terry, on the other hand, felt very differently. Terry felt that different families react to the news that their child is Deaf or Hard of Hearing very differently. Some families may see great benefit in meeting Deaf or Hard of Hearing adults, while other families may not be “ready” and may be “more offended that you’re kind of pushing them into something they don’t want.” Terry did not think a referral to a Deaf organization should be made automatically, for the parents to accept or turn down. Rather, Terry saw it as the responsibility of the audiologist to “read the family first” and determine if they are ready to meet Deaf or Hard of Hearing adults. Thus, the audiologist is able to maintain power over the parents and over Deaf adults (Asch, 2001; Hosking, 2008; Mitchell, 2013; Rocco, 2002).

*Role of teacher of the Deaf.* When asked what referrals audiologists should make when an infant is identified as Deaf or Hard of Hearing, Blair didn’t know, but said, “I guess my first guess would be maybe the school? Maybe they might know the best or like the next step?” Bailey said she would refer to the state early involvement program, which is operated by the schools. Bailey said that she was “into” the early involvement program. Terry would refer a family to the state early involvement program, if the parents had chosen to pursue hearing technology and spoken language. Terry admitted not knowing very much about the early involvement program. Hayden had been to a conference where the teachers of the Deaf had a disagreement with the educational audiologist about how to best serve a student with a CI. Hayden agreed with the teachers of the Deaf, rather than with the educational audiologist. But

when asked how teachers fit into the system, Hayden said that teachers “sit outside of the system.” Casey was unaware that schools provide early involvement programs of children who are Deaf or Hard of Hearing. Tony did not mention a referral to a teacher or school, but when asked, Tony said the referral would not be made until after “the school talk is given to the parents.” In other words, after the audiologist has explained the “options” to the parents and the parents have decided which option they want to pursue, the audiologist would refer to the appropriate school.

It seemed the AuD students viewed it as the responsibility of the audiologist to explain the “options” to the parents, and then refer the family to a school that matches the parents chosen option. While Bailey mentioned a referral to the state early involvement program, none of the students mentioned the federal obligation to refer the family to the state early involvement program within seven working days of identification (IDEA, 2004). None of the students mentioned the role of the teacher of the Deaf as a partner on the journey with the family as they go through the process of deciding whether to raise their child bilingually (ASL/English) or with spoken language only. None of the students mentioned participation in a Deaf or Hard of Hearing student’s educational team as a role of the audiologist.

### **Artifacts**

As a form of triangulation, I studied and analyzed five artifacts, to determine their alignment with the attitudes and beliefs of the AuD students who were interviewed.

**Deaf culture class assigned readings.** Three of the artifacts were readings that had been assigned to the students in their summer trimester course in Deaf Culture. Specifically, I read the book *Words Made Flesh: Nineteenth-Century Deaf Education and the Growth of Deaf Culture* (Edwards, 2012). I also read and analyzed two assigned articles. One was “Language and

Literacy Development” (Lederberg, Schick, & Spencer, 2013). The other was “Spoken English Development Among Native Signing Children with Cochlear Implants” (Davidson et al., 2014).

In the book, *Words Made Flesh: Nineteenth-Century Deaf Education and the Growth of Deaf Culture*, Edwards (2012) tells the story of Deaf education in the 19<sup>th</sup> century of the United States of America. It begins with the establishment of the first school for the Deaf in the United States by Thomas Hopkins Gallaudet and Laurent Clerc (p. 11) and explains how Deaf education in the United States was created by the Deaf for the Deaf. It explains that ASL and Deaf culture grew out of that very first school and spread to other schools in other states, that were established by Deaf students from that first school. The book subsequently tells the story of how, starting in the 1840s, hearing people (specifically Horace Mann and Samuel Gridley Howe) threatened the education of the Deaf by the Deaf by introducing the concept of oral (spoken language) education for Deaf children (pp. 143-153). Mann and Gridley Howe believed that residential schools for the Deaf should be eliminated, that Deaf children should be mainstreamed into typical classrooms with hearing children, that Deaf children should be taught spoken language only, and that ASL should be eliminated. Thus, began the ASL-oral argument that exists to this day in the field of Deaf education.

In the interviews of audiology students, both Terry and Hayden spoke of the growth of Deaf culture as a result of the oppression of Deaf people by hearing people, although they did not mention language (ASL) oppression. Terry and Hayden had previously had classes in Deaf culture. As a result of reading this book, the other students may develop an appreciation and understanding of the nature and depth of the argument between those who advocate for the use of ASL/English bilingualism and those who advocate for spoken language only.

Two of the articles assigned to the AuD students in the Deaf Culture class were relevant to this study. In the article “Language and Literacy Development” (Lederberg et al., 2013), the authors argue that the decisions made about how to raise and educate Deaf and Hard of Hearing children are often based on underlying beliefs about “the extent to which spoken language is necessary for a child to fit into a mainstream hearing world versus a belief that hearing loss is a difference to be embraced” (p. 2). Whether children are raised in an ASL/spoken language bilingual environment, a simultaneous communication (signing and speaking at the same time) environment, or in a spoken language only environment, the authors make two conclusions. First, they find that the use of sign language does not interfere with or delay the development of spoken language. Both Tony and Terry, in the interviews above, commented that children need to be given both signed and spoken language in order to thrive. Second, the authors conclude that, regardless of how the child is raised, early exposure to accessible language is the key to later success in language and literacy. Tony, in the interview process, argues that even if parents are going to pursue CI surgery for their Deaf child, they should sign during that first year of life to avoid the potentially devastating impacts of language deprivation.

A second article, “Spoken English Development Among Native Signing Children with Cochlear Implants” (Davidson et al., 2014) studies five Deaf children with Deaf parents who were being raised in ASL home environments. The authors came to the same conclusions as Lederberg et al. (2013). They conclude, first, that ASL does not interfere with nor delay the development of spoken language. Second, they conclude that the use of ASL from birth may mitigate the effects of language deprivation that occur when Deaf children are not provided accessible language from birth. These findings again confirm the beliefs of Tony and Terry, who expressed these beliefs during their interviews.

**Audiology websites.** As part of the archive analysis, I reviewed and analyzed the AAA (2004) *Scope of Practice* and the ASHA (2018) *Scope of Practice in Audiology*. Both scopes of practice tend to be medical in nature and to use medical (rather than social/cultural) terminology.

The AAA defines an audiologist as follows:

An audiologist is a person who, by nature of academic degree, clinical training, and license to practice and/or professional credential, is uniquely qualified to provide a comprehensive array of professional services related to the prevention of hearing loss and the audiologic identification, assessment, diagnosis, and treatment of persons with impairment of auditory and vestibular function, and to the prevention of impairments associated with them. (para. 5)

This definition fits well into the traditional medical model of disability, which views a disability as something to be prevented, cured, or treated (Asch, 2001; Hosking, 2008; Rocco, 2002; Rocco & Delgado, 2011). This definition also uses the medical terms “hearing loss” and “impairment of auditory function,” rather than the social/cultural term “hearing level” (Benedict, 2010).

Additionally, Benedict prefers the social/cultural term “identification” to the medical term “diagnose.” The AAA’s (2004) definition uses both terms, but in different ways.

“Identification” is used in the context of screening for the potential that an individual may be Deaf or Hard of Hearing, while “diagnose” is used in the context of determining, after assessment, that an individual is, indeed, Deaf or Hard of Hearing.

ASHA (2018) defines an audiologist as follows:

By virtue of education, training, licensure, and certification, audiologists engage in professional practice in the areas of hearing and balance assessment, nonmedical treatment, and (re)habilitation. Audiologists provide patient centered care in the prevention, identification, diagnosis, and evidence-based intervention and treatment of hearing, balance, and other related disorders for people of all ages. (para. 18)

This definition also fits well into the medical model of disability.

The AuD students tended to have a much more social/cultural view of Deaf and Hard of Hearing people than their professional organizations' scopes of practice reflect. Also, while the AuD students interviewed spoke at length about their responsibility to ensure that Deaf and Hard of Hearing individuals, or the families of Deaf and Hard of Hearing infants understand their "communication options," neither scope of practice makes any mention of options. The ASHA Scope of Practice (2018) lists the responsibility of the audiologist to manage "procedures for speech and language habilitation and/or rehabilitation for persons with hearing loss," but makes no mention of "options."

Another finding is that while the AuD students interviewed made little mention of the school system and did not view themselves as members of the educational systems team, both the AAA (2004) and ASHA (2018) very much see the audiologist as a member of the educational team. The AAA (2004) specifies, "The audiologist participates in the development of Individual Family Service Plans (IFSPs) and Individualized Educational Programs (IEPs; para. 17). ASHA (2018) says the audiologist consults and participates in "the development of an Individual Education Program (IEP) for school-age children or an Individual Family Service Plan (IFSP) for children birth to 36 months old" (para. 17). Both organizations also see the role of the audiologist as consultant and advisor to the interdisciplinary school team.

Thus, neither the AAA *Scope of Practice* (2004) nor the ASHA *Scope of Practice* (2018) aligns with the information provided by the first-year AuD students interviewed. While the students interviewed had some medical perspectives and tended to use medical terminology, they did not have the medical perspective portrayed in the scopes of practice of their professional organizations. Also, while the students interviewed had almost no knowledge of the educational system and did not view themselves as having a relationship to the school system or to the

teacher of the Deaf, both of their professional organizations do see the audiologist as a part of the Deaf education system.

### **Limitations of the Study**

This research study was conducted to learn more about the attitudes and beliefs of AuD students at only one university in the United States. It is not known if the opinions expressed by these students can be generalized to audiology students at other universities or to currently employed audiologists. While an argument can be made for “naturalistic generalization” in case-studies, in which the goal is not necessarily to draw conclusions, but to determine how the findings of a case-study relate to one’s personal experience, these generalizations have not been proven (Stake, 1978).

Second, the AuD students expressed their attitudes and beliefs based upon knowledge they had acquired during their undergraduate programs and during their first year of study in the current AuD program. It is not known if they may have expressed different attitudes and beliefs had they been further along in their studies.

### **Summary**

The Attitudes to Deafness Scale demonstrated that these AuD students have overall social/cultural attitudes and beliefs about people who are Deaf or Hard of Hearing. This finding was a surprise to me. My bias was that the AuD students would score in the medical end of the Attitudes to Deafness Scale.

The interview process demonstrated that, while the AuD students at this university had an overall social/cultural view of people who are Deaf or Hard of Hearing, they continued to hold some medical attitudes and beliefs about Deaf and Hard of Hearing people. For the most part, the students had social/cultural beliefs about the success of Deaf and Hard of Hearing children



and adults; they viewed the success of Deaf and Hard of Hearing people in the same way they viewed the success of hearing people. They continued to use medical terminology about Deaf and Hard of Hearing people and to hold some medical beliefs that it is better to be hearing than to be Deaf or Hard of Hearing. While they expressed positive views about Deaf culture, they felt there is discrimination within Deaf culture towards people who are Hard of Hearing, are oral Deaf, or who use amplification technology. Also, while they expressed positive attitudes about ASL, most of the students showed a preference for spoken language. The four students who had studied ASL and Deaf culture were more open to the use of ASL, but still showed some preference for spoken language. The two students who had the lowest scores on the Attitudes to Deafness Scale had no experience or background in ASL and demonstrated a clear preference for amplification technology and spoken language. The AuD students viewed themselves as members of a medical team but did not view themselves as members of the Deaf education system. In general, they did not see audiologists as having a relationship with Deaf mentors or with teachers of the Deaf.

The archival material that was part of the Deaf Culture class the students were currently taking supported the views of Terry and Tony about the historical oppression of Deaf people by hearing people. Additionally, the articles from the Deaf Culture class supported Terry and Tony's views about the importance of using ASL with Deaf infants. Both articles concluded that sign language does not delay the development of spoken language and mitigates the harmful effects of language deprivation.

The Scopes of Practice of both the AAA (2004) and ASHA (2018) did not reflect the viewpoints of the first-year students in this AuD program. First, the Scopes of Practice of the organizations were very medical, while the students expressed a mixture of social/cultural and

medical attitudes and beliefs. Second, the Scopes of Practice were clear about the role of the audiologist in the Deaf education system, while the students in the AuD program had almost no knowledge about the educational system and did not see themselves interacting with the educational system.

In Chapter 5 of this dissertation, I summarize the research problem, the methodology, and the findings of this qualitative study. Second, I make some conclusions based upon the findings of this study. Then, I make some recommendations for the AuD students. Last, I make some recommendations for further research in this field.

## Chapter 5: Summary, Conclusions, and Recommendations

### Summary

This section provides a summary of the research problem, the research questions, the methodology, and the findings. The sub-section on findings discusses the AuD students' attitudes and beliefs about Deaf and Hard of Hearing people, about sign language, and about the role of the audiologist in the Deaf education system.

**Research problem.** Current research demonstrates that sign language supports and enhances the development of spoken language and cognition (Acredolo & Goodwyn, 2000; Archbold & Mayer, 2012; Davidson et al., 2013; Gale, 2010; Marschark & Swanick, 2010; Petitto et al., 2000). However, some audiologists, speech pathologists, and educators of Deaf and Hard of Hearing students have not incorporated this research into their approach with parents (A.G. Bell, n.d.; Christiansen & Leigh, 2002).

Because audiology is an allied health profession, the audiologists' Scopes of Practice (AAA, 2004; ASHA, 2018) reflect a medical perspective about people who are Deaf or Hard of Hearing, rather than a social/cultural belief. Devlin and Pothier (2006) explain the goals of the medical perspective as the prevention, cure, treatment, or rehabilitation of disability (in this case, Deaf or Hard of Hearing). A social/cultural view of Deaf people describes a unique culture that includes highly valued language, American Sign Language (ASL), social beliefs, history, values, customs, storytelling, art, and all other aspects of culture (Benedict, 2010).

The professional who evaluates and identifies an infant as Deaf or Hard of Hearing is the allied health professional known as an audiologist. Thus, the audiologist is the first professional in the system of Deaf and Hard of Hearing education with whom the parents come into contact.

The parents rely heavily on the information and recommendations provided by the audiologist (Li et al., 2003). If the audiologist recommends that the parents use both ASL and spoken English, hearing parents are likely to follow that recommendation. Likewise, if the audiologist recommends against sign language, the parents are likely to follow that recommendation (Li et al., 2003).

Consequently, this study focused on the attitudes and beliefs held by audiology students about Deaf and Hard of Hearing people, and whether those audiology students will recommend sign language use to parents of newly identified Deaf and Hard of Hearing infants. This study examined the attitudes and beliefs of first-year AuD students, rather than working clinical audiologists, to study the beliefs of beginning audiologists.

**Research questions.** With a conceptual framework of General Systems Theory (Caine, 2004; Hayajneh, 2007; Lauffer, 2011; Weckowicz, 1989), looking through the lens of Critical Disability Theory (Asch, 2001; Hosking; 2008; Rocco, 2002; Rocco & Delgado, 2011), the following research question guided this qualitative study: What are the attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing?

Two sub-questions that were explored included the following: What are the attitudes and beliefs of audiology students about sign language? What are the attitudes and beliefs of audiology students about their role in the educational system as it relates to Deaf and Hard of Hearing children and their families?

**Methodology.** This research used a qualitative case study approach. Creswell (2015) says a qualitative study is not meant to be generalized to a whole population. Rather, a qualitative study is “useful to exploring and understanding a central phenomenon” (p. 626). Additionally, Creswell (2015) defines a case study as one in which “the researcher provides an

in-depth exploration of a bounded system” (p. 617). This research study was a qualitative case study in the sense that it provided an in-depth exploration of the attitudes and beliefs of audiology students about Deaf and Hard of Hearing people, including their attitudes and beliefs about American Sign Language (ASL) and their beliefs about the role of the audiologist in the Deaf education system. It is a study of a bounded system. Specifically, that system is the doctorate of audiology (AuD) program at a university on the west coast of the United States of America.

The conceptual framework for this research study was General Systems Theory, in that it was the beginning of an exploration of a whole system – the educational system for students who are Deaf or Hard of Hearing. This research study focused on only one element of the educational system for Deaf and Hard of Hearing children, the field of audiology. Audiology was chosen because the audiologist is the first professional with whom parents of newly identified Deaf and Hard of Hearing infants come into contact. This study focused on the cultural beliefs and attitudes of AuD students about Deaf and Hard of Hearing people, even though medical attitudes about Deaf and Hard of Hearing people may also be common amongst other Deaf and Hard of Hearing education professionals, such as teachers of the Deaf and Hard of Hearing, and speech pathologists. The field of audiology was studied through the lens of Critical Disability Theory.

This study began by administering the Attitudes to Deafness Scale (Cooper et al., 2004) to 19 AuD students at a university on the west coast of the United States, during the summer trimester of their first year in the program (Summer 2018). Qualitative data were then collected through one-on-one interviews with six students who were selected based on the results of the Attitudes to Deafness Scale. Those interviews provided in-depth information about the attitudes and beliefs of the AuD students. Additionally, a book and two articles that were assigned

reading for the AuD students during their summer course on Deaf Culture and the Scopes of Practice of both the AAA and the ASHA were analyzed.

**Findings.** On the Attitudes to Deafness Scale, all but one of 19 students in the current cohort of AuD students at this university scored in the social/cultural range, rather than the medical range. That means that these students tend to see the whole person first, rather than the disability needing to be prevented, treated, or cured.

The attitudes and beliefs of these students may be a reflection of a larger change in societal beliefs about people with disabilities. Staniland (2009) notes that between 2005 and 2009, the attitudes of people towards individuals with disabilities improved, and that people are likely to think of people with disabilities as being just like anyone else. Munyi (2012) notes societies and cultures, world wide, have become much more accepting of and accommodating towards individuals with disabilities. In the United States, this social change has been reflected in the passage on the federal Individuals with Disabilities Act (IDEA) in 1975, and the passage of the Americans with Disabilities Act (ADA) in 1990, which included a requirement that television sets made in the United States have captioning ability and established a national telephone relay system for people who cannot hear. The *California Education Code* Section 51225.3 (Onecler.com, 2017) has recognized a course in ASL as a course in a language other than English (LOTE) for the purposes of meeting high school graduation requirements since 1988. Enrollment in courses in ASL in the United States increased by 216.3% between 2009 and 2013 (Modern Language Association, 2013).

All six of the students who were interviewed had bachelor's level degrees in speech pathology and audiology. Five of the students had previously known Deaf or Hard of Hearing people, although none of the students had any current relationship with culturally Deaf people.

Four of the students had studied American Sign Language. One of the students had decided at a young age to become an audiologist, because of feelings about the injustice of a Hard of Hearing classmate who had been teased for wearing hearing aids. The other five students had started college without a clear vision of becoming an audiologist.

*Attitudes and beliefs about Deaf and Hard of Hearing people.* Interviews with six of the students demonstrated that the students showed that they were conflicted in their attitudes and beliefs about Deaf and Hard of Hearing people, even though they had an overall social/cultural view of people who are Deaf or Hard of Hearing. They tended to use terms that fall in the medical model (hearing loss, options, diagnosis, grieving process, early intervention) rather than equivalent terms that fall under the social/cultural model (hearing level, opportunities, identification, journey, early involvement) (Benedict, 2010). The students used medical terms even when their meaning was social/cultural. They expressed some views that implied they believe it is better to be hearing than to be Deaf or Hard of Hearing. Students expressed an overall preference for spoken language over signed language.

The students viewed successful Deaf and Hard of Hearing children and adults in very much the same way they viewed successful hearing people. Only one student tied the success of a Deaf or Hard of Hearing child to success in the parents' choice of either signed or spoken language. All the students viewed successful Deaf and Hard of Hearing adults as holding jobs, raising families, and independently participating in the activities of daily living. None of the students tied the success of Deaf and Hard of Hearing adults to either signed or spoken language. One student stated clearly that the success of a Deaf or Hard of Hearing person has nothing to do with hearing status; rather, it has to do with personal motivation and "mindset."

Students explained the difference between being Deaf and being Hard of Hearing in functional terms. That is, they described being Deaf as unable to hear well enough to understand and develop spoken language. Typically, these are people with severe to profound hearing levels. They defined the term Hard of Hearing as being able to hear well enough to understand and develop spoken language. Typically, these are individuals with unilateral hearing or mild to moderate hearing levels.

All the students believed that parents of Deaf children, as well as adults who are identified as Deaf, should be provided with “options,” which included making the best possible use of technology (hearing aids or cochlear implants) to develop spoken language or learning ASL and becoming part of the Deaf community and culture. The students did not believe “options” should be provided to parents of Hard of Hearing children. Those children should be prescribed amplification devices, learn spoken language and continue to be monitored by their audiologists.

Several students mentioned that the years birth to three are critical for the development of listening and spoken language skills. They did not mention a critical period for the development of signed language skills. One student, when asked if the critical time period was the same for signed language, reflected on the question and concluded that the years birth to three were critical for both spoken and signed language. Several of the students mentioned the deleterious effects of “auditory deprivation” during the critical years of birth to three. None of them used the term “language deprivation,” but one student stressed the importance of using ASL with Deaf children to counteract the negative effects of “auditory deprivation.”

Several students also noted that being Deaf or Hard of Hearing can lead to social isolation. One student stressed the importance of Deaf and Hard of Hearing students being able



to attend school with other Deaf and Hard of Hearing children. Another student talked about social isolation amongst late deafened adults, and the potential negative impacts of isolation, including depression and suicide.

The students expressed a generally positive attitude towards Deaf culture. The students said they respected Deaf culture. Several students understood that Deaf culture had grown out of the history of oppression of Deaf people by hearing people, although they did not mention that language oppression had been an aspect of that discrimination. On the other hand, the students expressed a belief that Deaf culture is discriminatory towards people who are Hard of Hearing, oral Deaf, use spoken language, or wear hearing aids or cochlear implants.

The students were supportive of the use of hearing aids and cochlear implants, but not insistent that Deaf and Hard of Hearing people should pursue the use of such hearing technology. For Deaf and Hard of Hearing adults, the students were unanimous that the use of hearing technology was a personal matter for the Deaf or Hard of Hearing individual. For children, the decision about hearing technology is up to the parents. While all the students saw the use of technology as an “option” they would present to the parents of Deaf children, two of the students said they would strongly encourage the parents to pursue the use of hearing technology and the development of spoken language.

***Attitudes and beliefs about American Sign Language.*** All the students expressed positive beliefs and attitudes about American Sign, Language (ASL), although one student referred to ASL as “a manual form of communication,” rather than as a language. The other five students expressed understanding that ASL is a true language, with vocabulary and grammatical structure that is separate from spoken English. The four students who had previously learned some ASL said they wished they could improve their signing skills. However, the students had

reasons why they could not get better at sign language—they are too busy with graduate school; sign language is too hard; there are not many opportunities in the area to learn and practice sign language. The students expressed that ASL is a great last option for Deaf people who are not able to acquire spoken language. One student said that ASL should be used during a Deaf child's early life, to keep the "options" open in case the child does not develop spoken language.

*Attitudes and beliefs about the role of the audiologist in the Deaf education system.*

Several students mentioned the role of the "team" in their field, but all of them viewed the team as consisting only of medical professionals. Even the student who strongly believed in "early intervention" viewed it as medical intervention by a pediatrician, an audiologist, and a speech pathologist. Many of the AuD students believed that parents should be referred to parent support groups but were not familiar with any parent support organizations. Three of the students said they would refer parents of newly identified Deaf and Hard of Hearing children to the schools, but none of the students viewed the teacher of the Deaf in the school as a member of the "team." None of the students mentioned a referral to a Deaf organization, agency, or role model. Two of them were asked if they thought such a referral was appropriate. One thought it was a great idea. The other thought it would be important for the audiologist to "read the family" before making such a referral.

The AuD students viewed their role as either "informational" or "instructive." The four students who viewed their role as "informational" felt it was their responsibility to educate the parents about their options (which they viewed as "the technology route" or "the ASL route") and let the parents decide which "route" they would go down. Two of those students expressed that they would encourage parents to go down both routes and raise their children to be ASL/English bilingual. Two students viewed their role in a more "instructive" way. They

would tell the parents their options but encourage them to pursue technology (hearing aids or cochlear implants) and spoken language. These were the two students who had the lowest scores on the Attitudes to Deafness Scale. Because the scores on the Attitudes to Deafness Scale were used only to choose students for the case study interview portion of the study, no statistical analysis was conducted to determine if the scores of these two students were statistically different from the other four students' scores.

The book and articles from the AuD students' Deaf Culture course introduced those students who had not previously known about Deaf culture to the concept of Deaf culture. The readings reinforced the belief that two students already had that Deaf culture had grown out of the historical oppression of Deaf people by hearing people. The research articles assigned to the AuD students found that the use of ASL from birth can prevent language deprivation and concluded that the use of ASL does not prevent or delay the development of spoken language.

The Scopes of Practice of the AAA and ASHA were not in alignment with the AuD students' beliefs. Both Scopes of Practice were very medical and focused on the prevention, treatment, and rehabilitation of Deaf and Hard of Hearing people. The Scopes of Practice make no mention of "communication options." On the other hand, the Scopes of Practice both emphasize the role of the audiologist in the Deaf education system, something of which the AuD students were unaware.

## **Conclusions**

Several conclusions can be drawn from this study. These conclusions pertain very specifically to this cohort of AuD students at this specific university at the time of the study, during the summer of 2018. These conclusions cannot be generalized to other AuD students nor

to working audiologists. Additionally, this cohort of students may change their attitudes and beliefs about Deaf and Hard of Hearing people over time.

**Attitudes and beliefs about Deaf and Hard of Hearing people.** Overall, these AuD students tend to have a social/cultural view of Deaf and Hard of Hearing people, rather than a medical view (Asch, 2001; Hosking; 2008; Rocco, 2002; Rocco & Delgado, 2011). They view success for Deaf and Hard of Hearing children and adults as being the same as for a hearing child or adult. In their opinion, each Deaf or Hard of Hearing child or adult defines his own success and happiness. They see Deaf and Hard of Hearing children and adults as independent. They believe Deaf and Hard of Hearing adults lead average lives – going to work, having relationships, raising families. They do not tie success to the use of either signed or spoken language.

These AuD students do not see the role of the audiologist as that of preventing, treating, or rehabilitating Deaf and Hard of Hearing people. Thus, the attitudes and beliefs of these AuD students do not reflect the medical view of the Scopes of Practice of the AAA (2004) and ASHA (2018). For Deaf or Hard of Hearing adults, they view the use of hearing aid or cochlear implant technology as an individual decision. They view their role as audiologists as letting the Deaf or Hard of Hearing person know what their hearing technology options are, but they do not feel it is important for the audiologist to insist that Deaf or Hard of Hearing adults use an amplification device.

The AuD students often used medical terminology rather than social/cultural terminology when describing the Deaf and Hard of Hearing people, or when describing their role as an audiologist (Benedict, 2010). Most commonly, they used the term “hearing loss” rather than the more culturally acceptable “hearing level.” They also used the term “communication options”

rather than the culturally appropriate term “language opportunities.” The AuD students reflected some institutionalized audist beliefs that it is better to be hearing than to be Deaf (Bauman, 2004; Eckert & Rowley, 2013; Lane, 1992; Mitchell, 2013). Audist beliefs were evidenced by some of the remarks that were made by the students during the interviews. Statements made by students sometimes present being Deaf or Hard of Hearing in a negative way. The use of more culturally appropriate words and terms by audiologists could help families of Deaf and Hard of Hearing children develop more positive attitudes and beliefs about their children.

The two “options” or “routes” the students would present to parents of newly identified Deaf infants were either the “technology route,” or the ASL/Deaf culture route. Two of the students supported an ASL/spoken language bilingual route but recognized the right of parents to choose only spoken language. This is a belief supported by the CDE (2013b). It is interesting to this researcher that the AuD students view technology, rather than spoken language, as the opposite of ASL.

According to the students, “options” are presented only to parents of infants who are Deaf, meaning they have severe to profound hearing levels. Parents of infants with Hard of Hearing infants, meaning unilateral, mild, or moderate hearing levels, are not presented with options. Rather, those children are prescribed hearing aids and then monitored by the audiologist. However, Archbold et al. (2015) have shown the serious negative impact on language development for children with mild to moderate hearing levels. The National Hands & Voices organization (Hands & Voices, n.d.), the CAD (2017), and the CDE (2013b) recommend that all language opportunities be explained and provided to families of all Deaf and Hard of Hearing children, regardless of hearing level. One parent, Johanna Wonderly (personal communication, October 6, 2017) explained why she and her husband had chosen to raise their

three daughters with mild to moderate hearing levels bilingually. “There are often gaps in their language access depending on various environmental factors and they can tire easily from the mental strain of guessing, and so we rely on ASL to fill in and complete the message.” Another parent, Sarah Oliphant (personal communication, October 8, 2018) said, “ASL is an important language and communication tool for my daughter who has unilateral hearing, as she was born without a left outer ear. With ASL, she has the ability to express herself, acquire information, and be part of her community.” Another parent, Ali Velez Alderfer explained in a BuzzFeed FYI video (2018) why she had decided to learn and use ASL with her son with unilateral hearing. She had talked to parents all over the country with children with unilateral hearing, and the communication outcomes varied widely. Also, she was learning ASL proactively, in case her son lost the hearing in his other ear.

Several students spoke about the critical period for auditory development between birth to three years of age and expressed concern about the devastating effects of “auditory deprivation.” The LAO (2016), the Language Equality & Acquisition for Deaf Kids (LEAD-K) organization ([infantva.org](http://infantva.org), n.d.), and the CAD (2017) assert that the real danger faced by Deaf and Hard of Hearing children is that of “language deprivation,” regardless of whether that language is auditory or visual. Hall (2017) says that lack of exposure to accessible visual language during the first years of a Deaf child’s life can lead to “cognitive delays, mental health difficulties, lower quality of life, higher trauma, and limited health literacy” (p. 961). Hall suggests that those involved with the Deaf education system should be more concerned about “language deprivation” than about “auditory deprivation.” One AuD student expressed that ASL should be used to provide language to Deaf infants, to mitigate the negative effects of “auditory deprivation,” but perhaps this student actually meant language deprivation. Several students

discussed the difficulties Deaf and Hard of Hearing children have with reading and writing, and they attributed the learning difficulties to “auditory deprivation.” Both the CAD (2017) and the LAO (2016) attribute the low reading and writing achievement of Deaf and Hard of Hearing students to “language deprivation” during the critical years of birth to three.

The California State Legislature has recognized the negative impact that language deprivation has on Deaf and Hard of Hearing children. In 2015, the California State Legislature passed Senate Bill (SB) 210 (encoded as Section 56326.5 of the California Education Code; California Legislative Information, n.d.), requiring school districts to monitor the language development of Deaf and Hard of Hearing children ages birth to five, regardless of whether those children are acquiring signed language, spoken language, or both. The law further requires the IFSP or IEP team to discuss if the child is making language growth commensurate with their chronological age. If the child is not, the IFSP or IEP team must discuss what changes need to be made to the child’s educational plan. The law was passed with support from both the LEAD-K organization, which supports bilingual education, and the California Coalition of Option Schools, which supports spoken language education.

On October 26, 2018, the A.G. Bell Association and the LEAD-K organization announced an historic agreement to support legislation similar to California’s SB 210 in other states, and even to work together for federal legislation (A.G. Bell, 2018). The significance of this agreement is that it places the emphasis on the acquisition of language skills, which may occur with or without audition. This agreement can help ensure that Deaf and Hard of Hearing children do not endure language deprivation. Nevertheless, it is important for AuD students to understand the animosity that many Deaf people continue to hold against the A.G. Bell Association, because of its history of being against ASL, and because it is named after a person

who attempted to eliminate Deaf people, along with the language and culture of Deaf people (Bell, 1883).

Another concern raised by the AuD students is the isolation of both children who are born Deaf or Hard of Hearing and of adults who are late deafened by illness, injury, or age. The students' concerns are supported by research. The LAO (2016) supports that one of the major problems faced by Deaf and Hard of Hearing children is social isolation and recommends the regionalization of programs for Deaf and Hard of Hearing children to mitigate the negative effects of that isolation. Reinemer and Hood (1999) discuss that the social isolation of late deafened adults can lead to depression or even to suicide.

*Deaf culture.* While the students expressed positive respect for Deaf culture, they believe that discrimination exists within Deaf culture towards individuals who are Hard of Hearing, who use spoken language, and who wear hearing aids or CIs. Dowd (2017) discussed the feeling of being “not Deaf enough” to fit into Deaf culture, giving credence to the concept of “marginalization” (Berry, 1997; Maxwell-McCaw & Zea, 2011). Dowd tells her story of emerging from a place of marginalization and finding her identity.

In 1997, the Canadian Cultural Society of the Deaf determined that the society would refer to all Deaf individuals using a capital D. According to the Society, using the capital D to refer to all Deaf people is similar to the use of the terms Black or Jewish, which are often used whether the Black or Jewish individuals have a strong connection to their culture. Additionally, the Society said, “We do not make assumptions about each individual’s identity for them by determining whether they should have a capital or not” (Canadian Cultural Society of the Deaf, 1997, para. 6). The Deafhood Foundation (2017) recently published a definition of the word Deaf that is inclusive and encompasses the entire spectrum of Deaf individuals, incorporating



those with mild to profound hearing levels, whether unilateral or bilateral. Neither organization distinguishes between those who are “capital D Deaf” and “little d deaf,” nor do they utilize the term “hard of hearing” although they recognize the right of individuals to self-identify as hard of hearing. The Deafhood viewpoint is that the terms “capital D Deaf,” “little d deaf” and “hard of hearing” are terms that those in power (hearing people) have used to divide and conquer the Deaf community and to maintain power over Deaf people. The Deafhood Foundation welcomes all Deaf individuals, whether “you were raised with or without signing, if you were mainstreamed or went to a Deaf school, who your parents were, where or if you went to college, or where you work now” (Deafhood Foundation, 2017, para. 4). The Deafhood Foundation seeks to eliminate divisive terms, such as d/Deaf and hard of hearing, that are used to “benefit people in power and keep us powerless” (Deafhood Foundation, 2017, para. 3). Kat Lowrance (personal communication, October 22, 2018), Executive Director of the Rowell Family Empowerment Center, argues that the IDEA should combine the terms “Deaf” and “Hard of Hearing” and call a child DHH regardless of the hearing level. Lowrance says she has observed that IEP teams “invoke the audiogram to deny ASL or other services, saying the child is Hard of Hearing according to the audiogram.” In her words, “If we make the category DHH, then this nonsense would stop.”

**Beliefs about American Sign Language.** In general, the AuD students had a very positive, social/cultural view of American Sign Language (ASL). All four of the students who had previously studied ASL expressed a desire to improve their signing skills. Those four students had reasons why they were not able to improve their signs. One person said ASL is too difficult. Another expressed that graduate school is too cumbersome to allow additional ASL studies. Several students said there are no opportunities for them to practice their signing skills

and the community surrounding their university did not have many Deaf cultural events they could attend. One student said the AuD program formerly offered ASL but that it had been taken out of the curriculum, which was disappointing to some students. Of the six AuD students who participated in interviews for this case study, the two AuD students who had never taken ASL classes scored the lowest on the Attitudes to Deafness Scale.

Nikoloraizi and Makri (2005) showed that hearing people who know ASL and who understand Deaf culture tend to have a positive social/cultural view of Deaf and Hard of Hearing people. Rohland and Meath-Lang (1984) found that Deaf adults tend to mistrust audiologists, because audiologists cannot sign and cannot communicate with them. English, Mendel, and Rojascki (1999) found a similar level of dissatisfaction with audiologists among Deaf people. These authors suggested that audiologists should learn ASL to communicate with their Deaf patients, and they should learn more about Deaf culture. Both studies were done some time ago, but the interviews done with these first-year AuD students indicate that these students view ASL as a true language, and four of them have taken ASL classes.

Despite the AuD students' positive attitudes and beliefs about ASL, they demonstrated an audist preference for spoken language, and do not view spoken language and sign language as equal to each other. One student commented that parents near the school were "lucky" that there is a rather famous oral school in a nearby community. Sometimes, the expressed preference was apologetic, as in the comment, "I think it's easier to succeed in the world we live in with oral/auditory, as unfair as that is." ASL is sometimes viewed as a last option for those Deaf people who cannot use spoken language. One student said, "I think it's great we have that option (ASL) for people that can't speak."

**Beliefs about the audiologist's role in the Deaf education system.** Many of the students understood that Deaf and Hard of Hearing children and their parents are served by a team of professionals. One student described the team members as “parts of a puzzle,” with each team member contributing expertise. However, the students viewed the team from a medical perspective. They named the team members as the audiologist, the speech pathologist, the pediatrician, the cochlear implant surgeon, and other medical professionals. One student expressed a strong belief in the power of early involvement yet viewed early involvement only from a medical perspective, including the audiologist (“to make sure the kid is able to hear”), the speech pathologist (“to make sure the kid is able to produce like whatever sounds they’re hearing”) and the pediatrician (“to make sure the kid is not suffering from whatever else pathology”).

The AuD students did not know the role of the school system or the teacher of the Deaf and did not view the teacher of the Deaf as part of the team that serves Deaf and Hard of Hearing infants and their families. Two students said they would refer to the state early involvement program, which is operated by the schools, but didn't really know very much about it. When asked how teachers of the Deaf fit into the system, one AuD student said that teachers “sit outside of the system.” Another student was unaware that schools provide early involvement programs for children who are Deaf or Hard of Hearing.

It seemed that the students viewed it as the responsibility of the audiologist to explain the “options” to the parents, and then to refer the family to the appropriate school after the parents have chosen which "option" they wish to pursue. None of the students seemed aware of the federal obligation to refer the family within seven working days of identification (IDEA, 2004). The process of choosing which language or languages parents will use with their Deaf or Hard of

Hearing infant is a journey, which may take many months (CDE, 2013a). Expecting the parents to make a decision within seven days of identification is not reasonable. None of the students mentioned the role of the teacher of the Deaf as a partner on the journey with the family as they go through the process of deciding whether to raise their child bilingually (ASL/spoken language) or with spoken language only. None of the students mentioned participation in a Deaf or Hard of Hearing student's educational team as a role of the audiologist.

Also, none of the students mentioned Deaf agencies, organizations, or role models as part of the educational team. Deaf mentors can be partners with the parents and with the team as the parents go through the decision-making journey (CAD, 2017; CDE, 2013a). The role of a Deaf adult role model is supported by the federal Maternal and Child Health Bureau (MCHB) and a Deaf Mentor Project is funded by the MCHB through the Family Language and Learning (FL3) grant to the national Hands & Voices organization (n.d). When asked about the idea of a referral to a Deaf adult, one student thought it was a great idea, because when parents learn their child is Deaf or Hard of Hearing, they often assume their child will never succeed in school or get a job. They may assume their child will get teased or bullied. But, "if they could speak with an adult who's been through it all and they could tell them their story, it's like 'OK, it's not the end all be all.'" Another student, however, felt that while some families may see great benefit in meeting Deaf and Hard of Hearing adults, other families may not be "ready." This student sees it as the responsibility of the audiologist to "read the family first" and determine if they are ready to meet Deaf or Hard of Hearing adults.

Thus, while the AuD students' belief is that families of Deaf and Hard of Hearing infants are served by a team of professionals, they view the team from a medical perspective. They do not view the teacher of the Deaf or Deaf adults as members of the team that serve the families of

Deaf and Hard of Hearing children. It is possible that the reason the students do not understand the Deaf education system is that they have not yet had instruction in the area of Deaf education.

**Researcher bias.** My bias as a researcher was stated in Chapter 3 of this document, as follows:

My stance is that there is no place in the field of Deaf and Hard of Hearing education for audism, the belief that it is better to be hearing than to be Deaf or Hard of Hearing. I believe that, since most audiologists are hearing people, they view being Deaf or Hard of Hearing from the hearing cultural perspective of audism. Audiologists are allied health professionals and view being Deaf or Hard of Hearing from a medical perspective. The role of the audiologist is to treat or rehabilitate people who are Deaf or Hard of Hearing (AAA, 2004; ASHA, 2018). My perspective is that until the underlying cultural beliefs and attitudes behind the arguments about oralism versus bilingualism are brought out, acknowledged, and openly discussed, the arguments about whether Deaf and Hard of Hearing children should learn sign language will not end.

My researcher bias was partly disproved by the interviews of the six AuD students. The scores from the Attitudes to Deafness Scale given to 19 AuD students at this university showed that these students, overall, have social/cultural attitudes and beliefs about Deaf and Hard of Hearing people (Asch, 2001; Hosking; 2008; Rocco, 2002; Rocco & Delgado, 2011). The AuD students interviewed did not support the ideas of their professional organizations that the role of the audiologist is to treat or rehabilitate Deaf and Hard of People (AAA, 2004; ASHA, 2018)

On the other hand, the AuD students interviewed demonstrated some medical and institutionalized audist beliefs and attitudes about Deaf and Hard of Hearing people. The students tended to use medical terms rather than social/cultural terms to describe Deaf and Hard of Hearing people (Benedict, 2010). Additionally, the AuD students used some audist language that implied that it is better to be hearing than to be Deaf or Hard of Hearing (Bauman, 2004; Eckert & Rowley, 2013; Lane, 1992; Mitchell, 2013). While the AuD students had expressed a positive attitude about ASL, they tended to believe that Deaf culture is not inclusive and

discriminates against people who are Hard of Hearing, oral Deaf, or who use hearing amplification technology.

A surprising finding that emerged from the data is that the AuD students had no understanding of the role of the teacher of the Deaf, nor of the importance of Deaf adult role models for parents of Deaf and Hard of Hearing children. The AuD students had only a partial understanding of the system that affects Deaf and Hard of Hearing children and their families. As these students were in the first year of a three-year program, it is possible that they have not yet received instruction about the educational system.

### **Recommendations**

In this final section of this paper, I make recommendations based upon the findings of the study. First, I make recommendations for the students enrolled in the AuD program at this university. Then, I make recommendations for future studies, based upon questions that arose from the study.

**Recommendations for the audiology students.** First, the first-year AuD students in this program should strive to use terms that are social/cultural, rather than medical, in describing Deaf and Hard of Hearing people and in describing the role of the audiologist (Asch, 2001; Benedict, 2010; Hosking, 2008; Rocco, 2002; Rocco & Delgado, 2011). The students should be attentive to the words they use to describe Deaf and Hard of Hearing people and avoid words and terms that are negative and audist, especially when they are talking to parents of Deaf and Hard of Hearing children or to Deaf or Hard of Hearing adults (Bauman, 2004; Eckert & Rowley, 2013; Lane, 1992; Mitchell, 2013). Even the term “Hard of Hearing” is offensive to some Deaf people, as it infers “a hierarchical sense that it is better to be Hard of Hearing than to be Deaf” (Hatrak, 2018). The term “hearing loss” is a medical term and is offensive to many Deaf people

who were born Deaf, as it implies they have lost something they never had. The CDE (2013b) recommended replacing the term “hearing loss” with “hearing level” or “hearing status.” Some authors have suggested replacing the term “hearing loss” with the term “Deaf gain” as a way of shifting society’s view from a biological loss to a view of an individual and social gain (Bauman & Murray, 2014). The AuD students should be cautious of the use of the negative, audist words, such as “bad” or “not perfect,” when referring to being Deaf or Hard of Hearing. Even the use of the word “normal” in reference to hearing people infers that Deaf and Hard of Hearing people are “abnormal.”

Secondly, the first-year AuD students in this program should consider the devastating impact that language deprivation, not just auditory deprivation, has upon Deaf and Hard of Hearing children (CAD, 2017; Hall, 2017; Humphries et al., 2013; LAO, 2017). While it may be true that infants who do not wear amplification devices (hearing aids or CIs) are deprived of the ability to hear, it is language deprivation, whether that language is spoken or signed, that has negative impacts upon the future lives of Deaf and Hard of Hearing children. Those negative effects may be academic, cognitive, social-emotional, or vocational. In other words, language deprivation can have life-long implications for children who are Deaf or Hard of Hearing.

Third, the first-year AuD students in this program should consider replacing the term “communication options” with “language opportunities” (Benedict, 2010). Communication is defined as “exchange of information” (Communication, n.d., para. 1), while language is defined as “a systematic means of communicating ideas or feelings by the use of conventionalized signs, sounds, gestures, or marks having understood meanings (Language, n.d., para. 3). In other words, all language is communication, but not all communication is language. The word “option” is defined as “something that may be chosen (Option, n.d., para. 7). Benedict (2010)

sees the use of the word “options” as an implication that parents must choose one of the options. This belief was reinforced by the Deaf person who coded the interviews, who saw the term “communication options” as a “this or that” choice for parents.

Fourth, the first-year AuD students in this program should consider the importance of providing information about all language opportunities to parents of all Deaf and Hard of Hearing children, despite the hearing levels of their children. The negative impacts of language deprivation have been observed in children with mild to moderate hearing levels, as well as in children with severe to profound levels (Archbold et al., 2015).

Fifth, the first-year AuD students in this program should consider adopting a more inclusive definition of the term Deaf culture. This particular AuD program is to be commended for including a course in Deaf Culture in the AuD curriculum. As part of the curriculum, the AuD program can ensure that AuD students learn about the definition of Deaf culture provided by the Canadian Cultural Society of the Deaf (1997) and the Deafhood Foundation (2017).

Sixth, the first-year AuD students in this program should consider pursuing more studies in ASL or ask that a course in ASL be reintroduced into the AuD curriculum. All the students who had previously taken ASL expressed a desire to improve their ASL skills. One of the students in the program mentioned that ASL used to be taught in the program but it had been taken out of the curriculum. Previous studies have shown that Deaf people distrust audiologists and believe that audiologists see themselves as superior to Deaf people because audiologists are not able to use ASL (Rohland & Meath-Lang, 1984; English et al., 1999).

Seventh, the first-year AuD students in this program should consider seeking more involvement with the Deaf community. The AuD students should meet more Deaf and Hard of



Hearing people, so that AuD students are able to see the diversity in the Deaf community. The AuD students should investigate local Deaf community events.

Finally, the first-year AuD students in this program should view teachers of the Deaf and Deaf and Hard of Hearing adults as partners in the Deaf education system. The belief the AuD students expressed that their role is to inform the parents of Deaf and Hard of Hearing infants about their “communication options” and then refer them to school after the parents have made their choice does not recognize that the decision-making process is a journey, and cannot be forced into the seven day timeline the audiologist has to refer the family and infant to the school system. Nor does it recognize the valuable roles of the teacher and of Deaf adults in the process. Expansion of the team beyond the medical professionals, and collaboration with teachers and Deaf community members can alleviate the load on the audiologists, relieve the stress on families of Deaf and Hard of Hearing infants to make a quick, and perhaps premature, decision, and can increase collegiality in the entire system.

**Recommendations for future research.** This study was limited to a small number of first-year AuD students at one university. The findings of this study raise questions for future research.

First, would the same results be found if the study were replicated at a different university? Would the results be the same if the study were replicated with currently employed audiologists who evaluate infants and children? The study could be done with other groups of AuD students and with working audiologists to determine if the results of this study are typical or an anomaly.

Second, would interventions with the AuD students make a difference in the attitudes and beliefs of these AuD students about Deaf and Hard of Hearing people? Specifically, would more

opportunities for these AuD students to meet and converse with a diverse group of Deaf and Hard of Hearing adults make a difference in their beliefs and attitudes about Deaf and Hard of Hearing people? Would more opportunities for these students to meet with parents of Deaf and Hard of Hearing children change the attitudes and beliefs of the AuD students?

Third, a study about the beliefs of Deaf and Hard of Hearing people about audiologists who evaluate infants and children could be undertaken. The studies that exist are quite old. A new study could be enlightening to AuD students and to working audiologists.

Finally, a study of the attitudes and beliefs of teachers of the Deaf about audiologists could be undertaken. As a teacher of the Deaf and as a researcher, I had a bias about audiologists that was partially, but not completely, supported by this study. I am also not positive that my beliefs are common amongst teachers of the Deaf. This study could provide important information that might lead to more understanding between the professions of audiology and teaching.

### **Researcher's Final Thoughts**

This research study has been a tremendous learning for me. My bias that audiology students would have medical attitudes and beliefs about Deaf and Hard of Hearing people was disproven by the students' scores on the Attitudes to Deafness Scale. The case study interviews of six students provided a more in-depth look at the attitudes and beliefs of those six students. During the interviews, the students demonstrated a mixture of medical and social/cultural attitudes and beliefs about Deaf and Hard of Hearing people. I am surprised by the students' lack of knowledge about the Deaf education system, but that may be because of they have completed only one year of the three-year AuD program. I am encouraged by the attitudes and

beliefs of these aspiring audiologists. I see these students as open to new ideas, and I foresee positive changes in the field of audiology.

I intend to share the findings of this study with the Chair of the AuD program, and then with the AuD students themselves. I also intend to submit conference proposals to the California Educators of the Deaf, the California Academy of Audiology, and the Early Hearing Detection and Intervention Conference. I plan to submit articles based on this research study to the American Annals of the Deaf, the Journal of Deaf Studies, and the Journal of Early Hearing Detection and Intervention.

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## APPENDIX A: ATTITUDES TO DEAFNESS SCALE

Rate each item below on a scale of 1-6, as follows:

1 = Strongly Disagree to 6 = Strongly Agree

1. Deaf couples should receive genetic counseling to avoid having deaf children.

1            2            3            4            5            6

2. Deaf children should learn to speak to communicate with hearing parents.

1            2            3            4            5            6

3. I would like to have more deaf friends.

1            2            3            4            5            6

4. Deaf schools create a fully inclusive school setting for deaf students.

1            2            3            4            5            6

5. Deaf people should learn speech rather than sign language.

1            2            3            4            5            6

6. Deaf people are handicapped.

1            2            3            4            5            6

7. More research should be done to find cures for deafness.

1            2            3            4            5            6

8. Deaf children should be taught in sign language.

1            2            3            4            5            6

9. Hearing children of deaf parents are at risk of emotional deprivation.

1            2            3            4            5            6

10. Deaf people are safe drivers.
- 1            2            3            4            5            6
11. I would like to have more deaf colleagues.
- 1            2            3            4            5            6
12. Deaf people should learn to listen and speak.
- 1            2            3            4            5            6
13. Deaf people should receive help in their home environment.
- 1            2            3            4            5            6
14. Interpreters should be available for deaf children at school.
- 1            2            3            4            5            6
15. All deaf people should receive corrective surgery (e.g., cochlear implants).
- 1            2            3            4            5            6
16. Training more deaf professionals to work with deaf children would be a waste of time.
- 1            2            3            4            5            6
17. Having a deaf colleague would cause problems in the workplace.
- 1            2            3            4            5            6
18. Deaf people are physiologically impaired.
- 1            2            3            4            5            6

19. Deaf people should not be viewed as “impaired.”
- 1            2            3            4            5            6
20. I would like to see more deaf people at events I attend.
- 1            2            3            4            5            6
21. Having a deaf friend would be difficult.
- 1            2            3            4            5            6
22. Deaf people have their own culture.
- 1            2            3            4            5            6

Adapted from Cooper, Rose, and Mason (2004)

## APPENDIX B: INTERVIEW PROTOCOL

Introductions and Informed Consent

Read definitions of Deaf and Hard of Hearing

*Deaf*: A hearing level that is so severe or profound that it impedes the processing of spoken linguistic information through hearing, and adversely affects educational performance (Individuals with Disabilities Education Act, 2004)

*Hard of Hearing*: A reduced level of hearing, “whether permanent or fluctuating, that adversely affects a child’s educational performance, but is not included under the definition of deafness.” (Individuals with Disabilities Education Act, 2004)

Begin audiotape.

Before we start, do you have any questions for me?

1. Tell me why you want to be an audiologist.
  - a. Tell me about the first time you thought about becoming an audiologist.
2. Describe the interactions you have had with people who are Deaf.
3. Describe the interactions you have had with people who are Hard of Hearing.
4. Tell me about your vision of a successful Hard of Hearing child.
5. Tell me about your vision of a successful Hard of Hearing adult.
6. Tell me what you know about Deaf culture.
  - a. What are your feelings about Deaf culture?
7. Tell me what you know about sign language.
  - a. What are your feelings about sign language?



8. Tell me what you know about technology for Hard of Hearing people.
9. Tell me what you know about spoken language development for Deaf children
10. Imagine that you are an audiologist working with the Newborn Hearing Screening Program, and you identify a very young baby (3 months old) as Deaf or Hard of Hearing
  - a. What guidance will you be giving to the family?
  - b. What services or supports will you provide the family?
  - c. What referrals will you provide the parents?
  - d. How do you view your responsibility to the parents of that newly identified baby?
11. Is there anything else you would like to share with me?
12. Do you have any questions for me?

Thank you.

Reminder the tape will be kept on the password protected iPad and will be deleted when the interview is transcribed.

## APPENDIX C: INFORMED CONSENT FOR STUDY PARTICIPANTS

My name is Nancy Grosz Sager, and I am a student working on a doctorate in educational leadership at the University of the Pacific, Benerd School of Education. I am working on a dissertation project to explore the beliefs of audiology students about people who are Deaf or Hard of Hearing.

You are invited to participate in a project about your attitudes and beliefs, as an audiology student, about various topics related to newborn hearing screening, Deaf and Hard of Hearing education, and the Deaf world. This project will require that you be interviewed by me during the summer or fall trimester of the AUD program (June-November, 2018).

I will audiotape the interview using iPad AudioMemos, so that I can accurately remember what you say. In order to ensure your confidentiality, the audiotape will be kept in a locked cabinet in my home until it is transcribed. In the transcriptions, pseudonyms will be used in place of your name and in place of the name of your university. Once it is transcribed, the transcription will be kept in a Word document on a password protected laptop computer. The transcription will be printed out and kept in the locked cabinet at my home, and the audiotape will be erased. The transcription will be coded by me and by two other individuals (an audiologist and a Deaf doctoral student). Those individuals will receive the transcripts from me by secure email. They will sign confidentiality agreements, ensuring they will keep the transcripts confidential. When I write my dissertation, I will use a pseudonym instead of your real name when I make reference to any part of the interview. This will also help ensure your confidentiality.

Your participation in this research project is entirely voluntary. You may stop the interview at any time, if you do not wish to continue. If you have any questions about the research at any time, please e-mail me at [n\\_sager@u.pacific.edu](mailto:n_sager@u.pacific.edu). If you have any questions about your rights as a participant in a research project please call the Research & Graduate Studies Office, University of the Pacific (209) 946-3903. In the event of a research-related injury, please contact your regular medical provider and bill through your normal insurance carrier, then contact the Office of Research & Graduate Studies.

If you agree to participate, please sign this Informed Consent form, and return it to me using the enclosed pre-addressed envelope. With this letter, you will also find a stick-on name tag. I would like you to choose a pseudonym, write it on the name tag, and wear the name tag to the interview. If you agree to participate, I will provide you with a \$25 gift certificate to Barnes and Nobles bookstore or to Starbucks. I will also give you an American Sign Language “I Love You” lapel pin.

Your signature below indicates that you understand this information, that you willingly agree to participate, and that you may withdraw your consent at any time and discontinue participation. You will receive a copy of this form.

Signature

Date

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E-mail address

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Interviewer Signature

Date

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#### APPENDIX D: INFORMED CONSENT FOR ATTITUDES TO DEAFNESS

My name is Nancy Grosz Sager, and I am a student working on a doctorate in educational leadership at the University of the Pacific, Benerd School of Education. I am working on a dissertation project to explore the attitudes and beliefs of audiology students about people who are Deaf or Hard of Hearing.

You are invited to participate in a project about your beliefs and attitudes, as an audiology student, about various topics related to newborn hearing screening, Deaf education, and the Deaf world. This project will require you to complete the Attitudes to Deafness Scale, a 22-item Likert scale survey, that asks you to rate your opinions about various aspects of being Deaf.

Your participation in this research project is entirely voluntary. You may stop at any time, if you do not wish to continue. If you have any questions about the research at any time, please e-mail me at [n\\_sager@u.pacific.edu](mailto:n_sager@u.pacific.edu). If you have any questions about your rights as a participant in a research project please call the Research & Graduate Studies Office, University of the Pacific (209) 946-3903. In the event of a research-related injury, please contact your regular medical provider and bill through your normal insurance carrier, then contact the Office of Research & Graduate Studies.

If you agree to participate, please sign this Informed Consent form, and return it to me. Your signature below indicates that you understand this information, that you willingly agree to participate, and that you may withdraw your consent at any time and discontinue participation. You will receive a copy of this form.

Signature

Date

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Interviewer Signature

Date

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## APPENDIX E: CONFIDENTIALITY AGREEMENT

I agree to participate with Nancy Grosz Sager's dissertation process, by independently coding the transcriptions provided by Nancy Grosz Sager, using the codes mutually agreed upon by the transcription team. The transcriptions will be sent to me by Nancy Grosz Sager by secure email. I promise to keep the transcriptions confidential. I will not share the transcriptions with any other individual. Once Nancy Grosz Sager and I have participated in a reconciliation process regarding each transcript, the transcripts will be deleted from my computer.

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Coder's signature

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Date

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Researcher's signature

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Date

APPENDIX F: SPEECH SOUNDS AUDIOGRAM

