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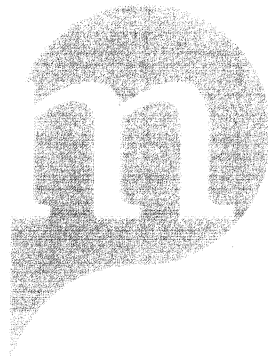
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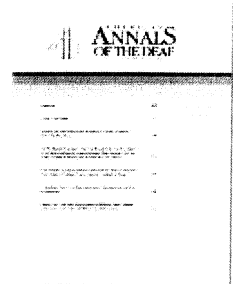
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BLACK DEAF INDIVIDUALS' READING SKILLS: INFLUENCE OF ASL, CULTURE, FAMILY CHARACTERISTICS, READING EXPERIENCE, AND EDUCATION

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REVIOUS RESEARCH on the reading abilities of Deaf individuals from various cultural groups suggests that Black Deaf and Hispanic Deaf individuals lag behind their White Deaf peers. The present study compared the reading skills of Black Deaf and White Deaf individuals, investigating the influence of American Sign Language (ASL), culture, family characteristics, reading experience, and education. (The descriptor *Black* is used throughout the present article, as Black Deaf individuals prefer this term to *African American*. For purposes of parallel construction, the term *White* is used instead of *European American*.) It was found that Black Deaf study participants scored lower on measures of both reading and ASL. These findings provide implications for possible interventions at the primary, secondary, and college levels of education.

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One's cultural experiences are socially constructed and influenced by ethnicity, parental involvement, early reading experiences, education, and socioeconomic status, or SES (Ceci, 1996). One aspect of culture that is particularly influenced by these factors is language, a part of culture that shapes learning and has the potential to affect achievement, especially if the language one uses is not the society's majority language (Stewart & Benson, 1988). An example can be seen with culturally Deaf individuals, who strongly value the use of American Sign Language (ASL), the language that composes the majority of literature, art, and folklore in the Deaf community (Pagliaro, 2001). This visual, ASL-centered culture allows Deaf students full access to social, organizational, and sports events, among other activities. However, the U.S. educational system mirrors a culture of

White, middle-class values, cherishing spoken language over sign language (Ornstein, 2007). Stewart and Benson note that this focus on spoken standard English has been traditionally emphasized in the effort to enhance the reading abilities of Deaf students.

This clash over classroom language also occurs with hearing students from various backgrounds. Studies with Black students who use Ebonics (e.g., Onwuegbuize, Mayes, Arthur, & Johnson, 2004) have demonstrated that the use of non-standard English affects student achievement, as teachers often view Ebonics as grammatically incorrect. Recently, similar patterns have been discovered with Black Deaf students. In a 2007–2008 research project funded by the National Science Foundation (NSF), "The History and Structure of Black ASL in the South," Ceil Lucas, Carolyn McCaskill, and Robert

Bayley found that Black Deaf students use a form of sign language that is different from what is used by White Deaf students (McCaskill, Lucas, Bayley, & Hill, 2011). (The descriptor *Black* is used throughout the present article, as Black Deaf individuals prefer this term to *African American*. For purposes of parallel construction, the term *White* is used instead of *European American*.) These Black Deaf students have developed their own dialects of ASL as a means of communicating with and understanding one another (Stewart & Benson, 1988; Woodward, 1976). However, like teachers of Black hearing students, teachers of Black Deaf students often misinterpret this cultural attribute as a manifestation of academic failure.

Deaf Individuals' Education and Language

Historically, the average reading level within the deaf population fell at the fourth-grade level (Allen, 1986); unfortunately, this situation has not changed in the past 30 years (Marschark & Harris, 1996). Because spoken English is often difficult for a Deaf individual to master, schools' emphasis on the oral method leads to problems with reading comprehension. Indeed, most Deaf students taught by this method spend much of their educational careers learning to speak, rather than learning content material. Many educators believe that these students need oral communication to gain access to the opportunities of the hearing world. But ASL, which is a visual/gestural language, allows Deaf children full access to language, enabling them to develop a complex lexicon and visual grammar system (Stewart & Benson, 1988).

Recent studies (Clark, Begue, Gilbert, & Weber, 2008; Freel et al., 2010) have shown that bilingual abilities scores, which measure a combination

of ASL and English skills, are significantly related to scores on measures of reading. Additionally, Allen, Hwang, and Stansky (2009) have found that although complex English syntax skills and ASL skills are not significantly related, they independently predict reading skills. These studies suggest that it is not oral skills that are necessary for deaf individuals to become skilled readers; rather, these individuals' language proficiency skills lead to more effective educational outcomes (Mayberry, 2007). Despite these findings, it appears that the majority of Black Deaf students attend mainstream schools where they are not permitted to use ASL in the classroom; rather, they are expected to use spoken English and function like their hearing peers (Kluwin, 1994; McCaskill, 2005; Woodward, 1976).

With regard to language preference, Woodward (1976) observed that Black Deaf signers used different ways of communicating with White Deaf and White hearing individuals. When communicating with White signers, Black Deaf individuals used White signs, while, when communicating with hearing people, they used English signs and word order. Although Woodward noted that Black signs differed from White signs on the lexical and phonological levels, there is no available literature on the nature of these differences between White and Black ASL and their impact on learning. Often, mainstream schools do not take Black Deaf students' minority racial status into consideration along with their hearing status, and do not address the fact that these students' needs are different from those of the general population. Moreover, administrators of these schools tend not to value Deaf culture and often have low expectations for their Deaf students (McCaskill, 2005). This perspective parallels society's view of most minor-

ity students, who are perceived as disadvantaged and underperforming when compared to their White, middle-class peers (Spencer & Gutfreund, 1990).

Because of this unfortunate perspective, Black Deaf students are often negatively stereotyped by their teachers and placed in special education programs (Vernon, 1983; Williamson, 2007). These low expectations for Black Deaf students parallel those experienced in the historical struggle of Black hearing students, who have overwhelmingly been steered into vocational programs and away from academic skills throughout the course of their education (McNeil, 1990; Vernon, 1983). Such low expectations engender low levels of academic and reading achievement, especially for Black Deaf students. Kluwin (1994) found supporting evidence for this negative effect on academic achievement, as his sample of Black Deaf students obtained lower scores compared to White, Asian, and Hispanic deaf students on both 9th-grade and 12th-grade achievement tests.

More specifically, research on the educational outcomes of Black Deaf students has found that many Black Deaf individuals receive certificates of attendance, rather than high school diplomas (McCaskill, 2005). Additionally, Black Deaf students who matriculate into college are at extremely high risk of dropping out (Integrated Post-secondary Education Data System, 2007). It is likely that these academic outcomes are at least partly accounted for by difficulties Black Deaf students experience in reading achievement. Indeed, Holt, Traxler, and Allen (1992) found that 77% of the White Deaf individuals in their college student sample read at least at the fourth-grade level, compared to only 12% of Black Deaf individuals and 7% of Hispanic Deaf individuals.

Black Deaf Individuals, Socioeconomic Status, and Family Characteristics

Within the hearing population, there tends to be a greater proportion of members of racial minorities in the lower socioeconomic status (SES) categories than in the higher categories (Reyes & Stanic, 1988). The same is true for Black Deaf individuals (Kluwin, 1994). Deaf individuals who are members of ethnic minorities have been found to experience a double burden (MacLeod-Gallinger, 1993), as the relationship between SES and levels of reading achievement is likely mediated by the impact of SES on family education and income levels (Kluwin & Gaustad, 1991).

Mediated by SES, the educational level of one's parents has a strong influence on children's literacy skills (Davis-Kean & Sexton, 2009; Flowers, 2007). The importance of parental education can be seen in the findings of a study of mother-child interactions by Westerlund and Lagerberg (2008). The researchers determined that mothers who were highly educated interacted more with their children to enhance reading skills, positively influencing their child's achievement. However, in interviews with Black Deaf students, McCaskill (2005) learned that many of the students' parents had not completed college or even acquired a high school diploma, a finding that suggests a potential negative influence on the reading skills of these Black Deaf children.

Moreover, while the majority of White parents of deaf children attempt to involve themselves with their children's education, Black parents report difficulty trusting administrators and educators and challenging the educational system to support their child (McCaskill, 2005). Additionally, many Black parents report that they want the best for their children but struggle to

find appropriate resources and good schools. Consequently, they lose hope and distance themselves from their children's education. As a result, McCaskill found, Black Deaf students often receive little or no educational support from their parents.

Research Objectives and Hypotheses

While research has investigated differences in reading achievement between Black Deaf and White Deaf individuals, there has been little research into the contributing factors that influence the reading achievement of Black Deaf individuals. In the present study, we compared the reading skills of Black Deaf and White Deaf individuals, investigating the influence of ASL, culture, family characteristics, reading experience, and education.

Hypothesis 1 stated that like those of White Deaf individuals, Black Deaf individuals' ASL skills would significantly predict reading skills, with higher levels of ASL skill related to higher levels of reading skill. Hypothesis 1a predicted that ASL and English skill levels would be similar between Black Deaf and White Deaf study participants. Hypothesis 2 predicted that Black Deaf and White Deaf participants would report similar communication experiences with their parents, with comparable proportions of each group using sign and oral languages during childhood. Hypothesis 3 predicted that comparable proportions of Black Deaf and White Deaf participants would report that their parents encouraged them to learn ASL, and that the proportions of Black Deaf and White Deaf participants who said their parents discouraged them would also be comparable. Hypothesis 4 predicted that White Deaf and Black Deaf participants would report equivalent levels of literacy-related interaction with their parents. Hypothesis 5 pre-

dicted that White Deaf participants would report higher levels of parental education than Black Deaf participants.

Method Participants

Participants in the present study were selected from a larger sample of 75 individuals who took part in a broader cultural impact study (Freel et al., 2010). The sample for the present study was limited to participants who identified themselves as Black Deaf or White Deaf and 18–40 years old. This sample included 17 Black Deaf and 30 White Deaf participants recruited from Gallaudet University and the Black Deaf community in the Washington, DC, area. Twenty-one participants were male and 26 were female. Thirty-four participants were 18–25 years old; 6 were ages 26–30; and 6 were ages 31–40. (The age of 1 participant was not provided.)

Materials

Four measures were used in the present study: the VL2 (Visual Language and Visual Learning) Background Questionnaire, the Early Reading Questionnaire, the American Sign Language–Sentence Reproduction Test (ASL-SRT), and the Woodcock-Johnson III (WJ III) Passage Comprehension subtest.

The VL2 Background Questionnaire consists of 101 questions that query participants' demographic and background characteristics, including ethnicity, age, education level, and hearing status. The questionnaire was administered in an online format at www.surveymonkey.com.

The Early Reading Questionnaire is based on a questionnaire developed by the Laboratory for Language and Cognitive Neuroscience at San Diego State University (K. Emmorey, personal communication, June 4, 2009) and was modified for the purpose of

the present study. The questionnaire used in the study consisted of 20 questions investigating participants' early reading experiences, including questions about reading interests, literacy interactions with parents, and number of hours spent reading. This questionnaire was administered in pencil-and-paper format and required approximately 15 minutes to complete.

The American Sign Language–Sentence Reproduction Test, or ASL-SRT, is a computer test that presents 20 video clips of signed sentences. After watching each sentence, the test taker is directed to reproduce or repeat the sentence verbatim. The sentences are presented in increasing order of difficulty, with each successive sentence increasing in length, as well as syntactic, thematic, and morphemic complexity (see Hauser, Paludnevičiene, Supalla, & Bavelier, 2008, for a review of an earlier version of this test). Perfect reproductions are scored as correct and given a score of 1; reproductions with any errors or alterations of sequencing are scored as incorrect and given a score of 0. This system is an “all or none” coding system, as one incorrect sign is coded as an error even if all other parts of the reproduction are correct. Possible scores range from 0 to 20.

The original, 39-item version of the ASL-SRT evidenced high interrater reliability, $R = .83$, $p < .01$, and high internal consistency, $\alpha = .89$ (Hauser et al., 2008). Additionally, test-retest reliability of the original version with 15 participants was similarly high, $R = .91$, $p < .01$ (Hauser et al., 2008). With respect to validity, this version of the measure had the capacity to discriminate between native and non-native adult and child signers, with native adults and children obtaining significantly higher scores than non-native signers (Hauser et al., 2008). For the

updated, 20-item version of the ASL-SRT that was used in the present study, test validity was increased by making two adjustments: (a) choosing stimuli across different levels of sentence complexity that maximally triggered meaningful error patterns distinguishing variously fluent populations, and (b) minimizing nonmeaningful errors by discarding stimuli that triggered idiosyncratic errors among the native, most fluent signers, such as “errors” caused by regional variation (Hauser, 2009). Like the original version of the ASL-SRT, the 20-item version was found to discriminate between native and non-native signing adults and children, again with native signers performing significantly better than non-native signers. It was also found to evidence high internal consistency, $\alpha = .84$ (Hauser, 2009).

The WJ III Passage Comprehension subtest (Woodcock, McGrew, & Mather, 2001) consists of 2 practice items and 47 scored items, which are arranged in order of increasing difficulty (greater passage length, more complex vocabulary, and greater syntactic and semantic complexity). This test requires participants to read a short passage and identify the missing key word that is most appropriate given the context of the passage. Possible scores range from 0 to 47.

Procedures

Two recruitment methods were used. Eligible participants were identified using the VL2 Volunteer Database, and subsequently sent a recruitment letter. Additionally, in order to obtain an adequate sample of Black Deaf participants, we contacted organizations in the Deaf community and attended local Black Deaf community events in the Washington, DC, area to advertise the present study. Interested participants were instructed to contact the researcher who had attended the

event and obtain scheduling information.

When participants arrived for the study, informed consent was obtained in written form. Participants were then instructed to complete the online VL2 Background Questionnaire, followed by the Early Reading Questionnaire. After concluding these measures, participants were administered the ASL-SRT, in which instructions were viewed in ASL and followed by practice items. Subsequently, participants were administered the Passage Comprehension subtest of the WJ III. On average, administration of all measures required 1 hour to complete. Participants received \$40 as compensation for their time and effort.

Results

All analyses were conducted using SPSS. Mann-Whitney U tests, independent t tests, and both simple and multiple linear-regression analyses were performed. The alpha level of all tests was set at $p = .05$, unless otherwise indicated.

Hypothesis 1: Relationship Between ASL Skills and Reading Skills

Hypothesis 1 stated that for the present sample of Black Deaf individuals, ASL skills would predict reading skills, with higher levels of ASL skill related to higher levels of reading skill. In order to investigate this hypothesis, simple regression was used to ascertain if scores on the ASL-SRT could be used to predict reading scores on the Passage Comprehension subtest for Black Deaf participants. Results were not significant, $R^2 = .025$, $R^2_{adj} = -.040$, $F(1, 16) = .390$, $p = .542$. In contrast to its performance in regard to Black Deaf participants, the ASL-SRT did predict reading scores on the Passage Comprehension test for White