

ECHO

ECHO: An international e-journal concerning communication and communication disorders within and among the social, cultural and linguistically diverse populations, with an emphasis on those populations who are underserved.

***ECHO is the Official Journal of the
National Black Association for Speech-Language and Hearing***



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About the Editor



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About the Journal

ECHO is a refereed journal that welcomes submissions concerning communication and communication disorders from practitioners, researchers, or scholars that comprise diverse racial and ethnic backgrounds, as well as academic orientations.

ECHO welcomes submissions from professionals or scholars interested in communication breakdown and/or communication disorders in the context of the social, cultural, and linguistic diversity within and among countries around the world. ECHO is especially focused on those populations where diagnostic and intervention services are limited and/or are often provided services which are not culturally appropriate. It is expected that scholars in those areas could include, but not limited to, speech-language pathology, audiology, psychology, linguistics, and sociology.”

Articles can cover to any aspect of child or adult language communication and swallowing, including prevention, screening, assessment, intervention, and environmental modifications. Special issues of ECHO concerning a specific topic may also be suggested by an author or initiated by the editor.

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Guidelines to Authors

Topics accepted for publication in ECHO could include, but is not limited to, the following:

- Communication breakdowns among persons due to culture, age, race, background, education, or social status
- Use of the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) framework to describe communication use and disorders among the world's populations.
- Communication disorders in underserved or marginalized populations around the world
- Service delivery frameworks for countries' minority populations, including those who are minorities for a variety of reasons including race, religion, or primary language spoken.
- Dialectical differences and their effects on communication among populations
- Evidence base practice research with culturally and linguistic diverse populations
- Provision of communication services in low income/resource countries
- Provision of communication services in middle income/resource countries
- Provision of communication services to immigrant and/or refuge populations
- Effects of poverty on communication development and the provision of services
- Education/training issues in serving diverse populations
- Ethical issues in serving diverse populations
- Role of religion in views of communication disability and its effect on service delivery

Submissions may include:

- research papers using quantitative or qualitative methodology
- theoretical discussion papers
- works using disability frameworks or models
- critical clinical literature reviews
- tutorials
- clinical forums
- description of clinical programs
- scientifically conducted program evaluations demonstrating effectiveness of clinical protocols
- case studies
- letters to the editor.

Manuscript Submissions

All manuscripts should be accompanied by a cover letter (e-mail) in which the corresponding author:

- Requests that the manuscript be considered for publication;
- Affirms that the manuscript has not been published previously, including in an electronic form;
- Affirms that the manuscript is not currently submitted elsewhere;
- Affirms that all applicable research adheres to the basic ethical considerations for the protection of human or animal participants in research;
- Notes the presence or absence of a dual commitment;
- Affirms that permission has been obtained to include any copyrighted material in the paper; and
- Supplies his or her business address, phone and fax numbers, and e-mail address.

All manuscripts must be submitted electronically and should follow the style and preparation presented in the Publication Manual of the American Psychological Association (fifth edition, 2001; see Journal for exceptions to APA style) Particular attention should be paid to the citing of references, both in the text and on the reference page. Manuscript submissions and inquiries should be addressed to: nbaslh@nbaslh.org.

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Current Issue

ACQUISITION OF INFORMATION AND THE UTILIZATION OF HEARING HEALTH CARE SERVICES AND RELATED HEARING AID TECHNOLOGIES BY PARENTS OF DEAF AND SEVERELY HARD OF HEARING CHILDREN, Ronald Jones, Norfolk State University, Norfolk, Virginia

USING VIDEO VIEWING TO EVOKE HISPANIC CHILDREN'S NARRATIVE SAMPLES, Nola T. Radford, Gerri Cannon-Smith, Jackson State University; Adelaida Saenz, M.S., CCC-SLP, McAllen, Texas

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ACQUISITION OF INFORMATION AND THE UTILIZATION OF HEARING HEALTH CARE SERVICES AND RELATED HEARING AID TECHNOLOGIES BY PARENTS OF DEAF AND SEVERELY HARD OF HEARING CHILDREN

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ABSTRACT

A survey was distributed nationwide to parents of deaf and hard of hearing children to inquire about their knowledge, acquisition and use of hearing rehabilitation services and related hearing aid care technologies. Two hundred and fifty-seven surveys were returned. The data revealed that parents with moderate to high incomes, regardless of their race or ethnicity, tend to have broader knowledge of the nature of hearing rehabilitation services, and acquire such services and hearing technologies at a rate greater than that of parents with lower incomes. The unavailability of hearing health care services in minority communities and high costs associated with hearing aids and cochlear implants were reported as the major reasons why disparities exist, particularly, among minorities.

KEY WORDS: minority health disparity, hearing health care, hearing impaired children, minority parents

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INTRODUCTION

The acquisition and use of hearing aids and participation in auditory rehabilitation therapy are the treatment recommendations for more than 80% of identified hearing loss cases found in the U.S. (National Council on the Aging, 1999). Yet, less than 40% of the estimated 32 million Americans with significant hearing disability avail themselves of these treatments (Kochkin, 2005). Moreover, the use of hearing aids and hearing rehabilitation services by racial and ethnic minority Americans, specifically, African Americans, has been estimated at less than 5% (Jones, 1987; Bazargan et al, 2001). The relatively high costs associated with hearing health products and the unavailability of hearing health care services in racial and ethnic minority communities have been given as explanations (Jones & Richardson, 1994).

Disparity in the acquisition and use of cochlear implants (CI) among minorities has also been reported. Data show that the “relative rate” of implantation by Anglo/Euro American children is five times higher than children of Hispanic origin, and 10 times higher than African American children. In a statistically equivalent comparison group study (Hyde & Power, 2005), 56% of children who wore conventional hearing aids were Anglo/Euro American, whereas in the implanted group 83% of the children were Anglo/Euro American. For children of Hispanic American origin, 21% wore conventional hearing aids and 8% had implants. Among African American children, 16% wore conventional hearing aids and 5% were implanted, and for children of Asian American origin 3% had conventional hearing aids and 2% had implants. Data for Native American children and children of multiracial or multiethnic backgrounds were not reported.

General Healthcare Disparities

A report by a committee of the Institute of Medicine (2002) reviewed over 100 studies that assessed the quality of healthcare for various racial and ethnic minority groups. The findings indicated that a significant variation in the rates of medical procedures exists by race, even when insurance status, income, age, and severity of conditions are comparable. The research indicates that U.S. racial and ethnic minorities are less likely to receive even routine medical procedures and experience a lower quality of health services. The Institute of Medicine committee recommended increasing awareness about disparities among the general public, health care providers, insurance companies, and policy-makers to reduce racial and ethnic disparities in healthcare. The report specifically stated, “Consistency and equity of care also should be promoted through the use of ‘evidence-based’ guidelines to help providers and health planners make decisions about which procedures to order or pay for based on the best available science (Institute of Medicine, 2002, p.1). The report also concluded that more minority health care providers are needed, especially since they are more likely to serve in minority and medically underserved communities.

The U.S. Census Bureau statistics on individuals living below the poverty level is also an important measure on the well-being of racial and ethnic minority groups. Racial and ethnic minorities are more likely than non-Hispanic whites to be poor or near poor. In 2002, the poverty rate for the U.S. population was 12.1%, up from 11.7% in 2001. The poverty rate was even higher for racial and ethnic minorities: Blacks (24%), Hispanics (22%), and 16.6% for foreign born populations (Proctor & Dalaker, 2002). “In general, racial and ethnic minorities often experience worse access to care due to lower quality of preventative, primary and specialty care.”(National Healthcare Disparities Report, 2004). Hispanic and African Americans had poorer

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quality of care than non-Hispanic Whites for about 40-60% of the quality measures including: access to health care, not receiving prenatal care, immunizations, lack of health insurance, and problems getting referrals to a specialist.

Hearing loss and disparity

It can be assumed that hearing health care disparities for racial and ethnic populations result in delayed identification and intervention for hearing loss and other communication disorders. This is a particularly critical issue for populations that have a higher incidence for hearing disorders. American Indian and Alaskan native infants, for example, have higher otitis media and associated outpatient and hospitalization rates than those for the general U.S. population of children (Curns, 2002). Alaskan Eskimos, African American and Hispanic children have been disproportionately represented in the categories of pre-maturity and meningitis. African American children have also higher rates of cytomegalovirus (Van Naarden et al., 1999; Scott, 2002) and lead poisoning. According to the 2003-2004 Gallaudet Research Institute's national demographic survey on deaf and hard of hearing youth, of the 38,149 respondents, almost half (48.5%) of the deaf and hard of hearing children were from a racial or ethnic minority group.

Significance of this project

When disparities in the acquisition of therapeutic or rehabilitative services and in the utilization of viable health care technologies have been identified, like those related here to hearing rehabilitation health care, it is critical for researchers, practitioners, policy makers, and others to determine why those disparities persist; particularly in advance of any new approaches or new technologies being introduced. This investigation attempted to identify factors that might account for the reported disparity in the acquisition of information and the utilization of hearing rehabilitative services and related healthcare technologies, particularly, by racial and ethnic minority U.S. populations. Targeted specifically were African American parents of deaf and hard of hearing children.

METHOD

This research was conducted as part of a larger federally funded initiative focusing on minority health care disparity issues. A descriptive research approach was used, wherein a survey was developed to address a series of focused research questions pertaining to the information parents

of deaf and hard of hearing children have regarding hearing rehabilitation services and related hearing health care technologies (e.g., hearing aids, cochlear implants, assistive devices, etc.). The primary research questions were as follow:

- In what way do parents of deaf and hard of hearing children differ on the types of information they receive or have regarding hearing rehabilitation and hearing health care technologies?
- Is there disparity in the acquisition of information and use of hearing rehabilitation services and related technologies across different racial and ethnic groups?
- What factors account for the reported underutilization of hearing health rehabilitation services and related technologies among racial and ethnic minorities?

Survey Instrument

A thirty-six question/statement survey was developed that opened with a letter to parents explaining the purpose of the survey and asking their participation in the study. A statement was also provided guaranteeing the anonymity of their individual responses. The survey had three sections which included: Section 1 - questions asking for demographic information, including child's age, race/ethnicity, hearing aid status, geographic location (city, state), and income status of the survey respondent; Section 2 - statements addressing parents' knowledge of and experiences with managing their child's hearing disability (e.g., seeking aural rehabilitation services, disposition regarding communication methods, causes of hearing loss, deaf culture, etc.); and Section 3 - statements pertaining to the acquisition, utilization, availability, and costs of hearing healthcare services and prosthetic technologies. The survey response format for Section 1 included simple yes-no or fill-in answers. The response format for Sections 2 and 3 required parents to indicate their level of agreement with statements. The choices were: strongly agree, agree, uncertain, disagree, or strongly disagree. A copy of the survey is posted in the Appendix.

Participants

Parent-members of the American Society for Deaf Children (ASDC) were targeted, initially, for exclusive participation in the study. The American Society for Deaf Children (<http://www.deafchildren.org>) was selected because it is advertised as a national organization with parents, therapists, and educators as members who are dedicated to the promotion of communication access

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and rehabilitation services for deaf and hard of hearing children. It was also reported to have a broad racial and ethnically diverse membership base (ASDC Secretary, personal communication, June 20, 2007). After review and approval by the ASDC Board of Directors, the survey was mailed to five-hundred parent members randomly selected from the organization's 2007 mailing list. Parents were offered a small financial incentive to return their fully completed surveys by a specified date.

Although the initial survey response rate (30%) was deemed acceptable, there was a disappointingly low response from self-identified racial or ethnic minority parents, specifically, African American parents (<.03%). In that African American families had been the targeted population for the study, it was decided to redistribute the survey through another mailing to a second cohort of parents. Targeted were parents who were not members of ASDC but with deaf and/or hard of hearing children enrolled in urban school districts known (to this investigator) to have proportionally high numbers of African American students. The response from this second cohort was 50%.

RESULTS

Parent characteristics

Seven hundred and fifty surveys were distributed nationwide to the parents and/or guardians of deaf and hard of hearing children. A total of 257 or 34.4% of the surveys were satisfactorily completed, returned, and used for analysis. The data were aggregated according to parent's income and racial or ethnic group membership. These data were analyzed, but only in terms of the number and percentage of responses to each question/statement in the survey. One hundred percent of the respondents completed questions that specifically asked about family income

and parent/child race or ethnic identity. Questions about the gender of the parent/guardian responding, their age, marital status, their educational background, occupations, and their hearing status were omitted from the survey. This was to avoid an over-intrusive tone to the questioning and to entice an expedient response.

The majority of the respondents were Anglo/Euro American (73.9%), with 12.8% African-American, 7.4% Latino, 3.9% Asian, .39% Native American, and 1.5% other (assumed to be multiracial or multiethnic). The comparatively high percentage of African-American responses, which is comparable to that group's representation in the current U.S. Population (U.S. Census Bureau, 2007) was understood to be a direct result of "oversampling" that population in the redistribution of the survey. It should be noted that the Latino/Latina Hispanic population, currently the largest ethnic minority population in the country (U.S. Census Bureau, 2007), as well as other ethnic minority populations were underrepresented in this sampling. Regarding geographic distribution of the survey respondents, 33 states across the country were represented. Parents who participated as part of the 2nd cohort had deaf and hard of hearing children enrolled in public school programs in small cities located along the Mid-Atlantic coastline (e.g., Virginia, Maryland, Delaware).

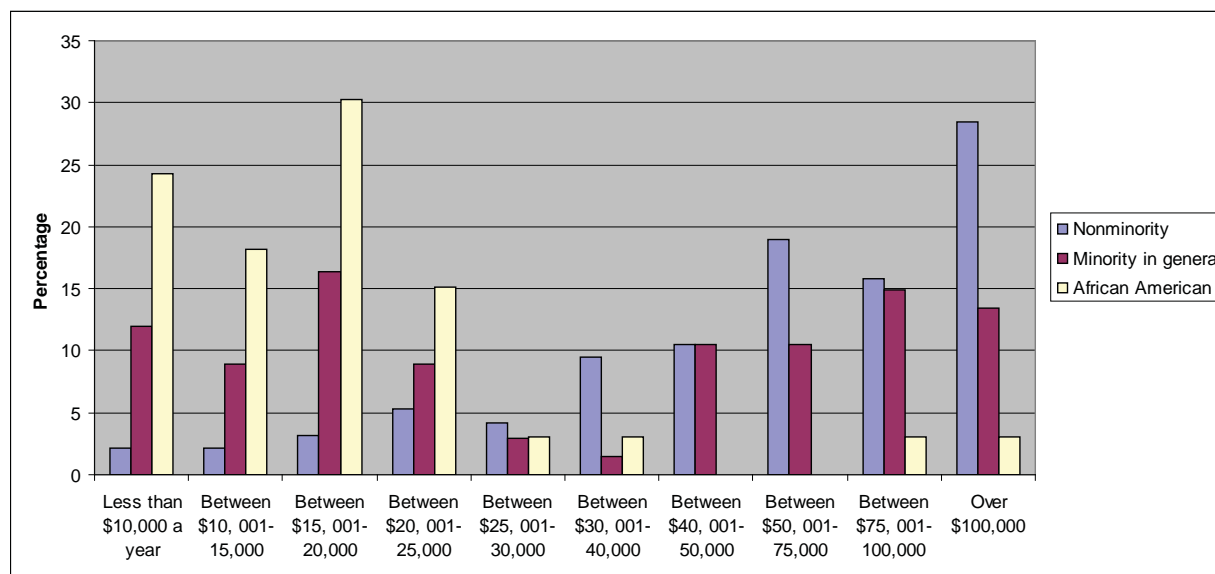
Table 1 shows the racial composition of the two cohorts of parent respondents. Cohort #1 consisted of 145 parent-members of ASDC. Cohort #2 consisted of 112 parents whose responses were solicited in the redistribution of the survey. The parents in Cohort #2 were not members of ASDC, and have or had deaf and hard of hearing children enrolled in public school programs in cities located along the mid-Atlantic coast. These data were sorted according to race or ethnic groups.

TABLE 1. Two cohorts of parent respondents according race or ethnicity

Race/Ethnicity	Number Cohort #1	# 2	(Total)	Percentage
White/Anglo/Euro American	119	71	(190)	73.9%
Black/African American	4	29	(33)	12.8%
Latino/Latina/Hispanic	11	8	(19)	7.4%
Asian American	10	0	(10)	3.9%
Native American	1	0	(1)	0.39%
Other (multiracial/ethnic)	0	4	(4)	1.5%
TOTAL	145	112	(257)	99.89%

Figure 1 shows a composite for incomes for all parents (Cohort #1 and Cohort #2) according to non-minority minority in general and African American status.

FIGURE 1. All respondents incomes according to their majority/minority/African American status



Child characteristics. Although the race or ethnicity of the children was presumed to be the same as their parents, one of the survey questions did ask parents to identify the race or ethnicity of their child. Table 2 shows the distribution of children according to their race/ethnicity. Note the number of children (263) exceeds the number of parent respondents (257). Apparently, there were more than one deaf or hard of hearing child in some families.

TABLE 2. Race/Ethnicity distribution of deaf or hard of hearing children

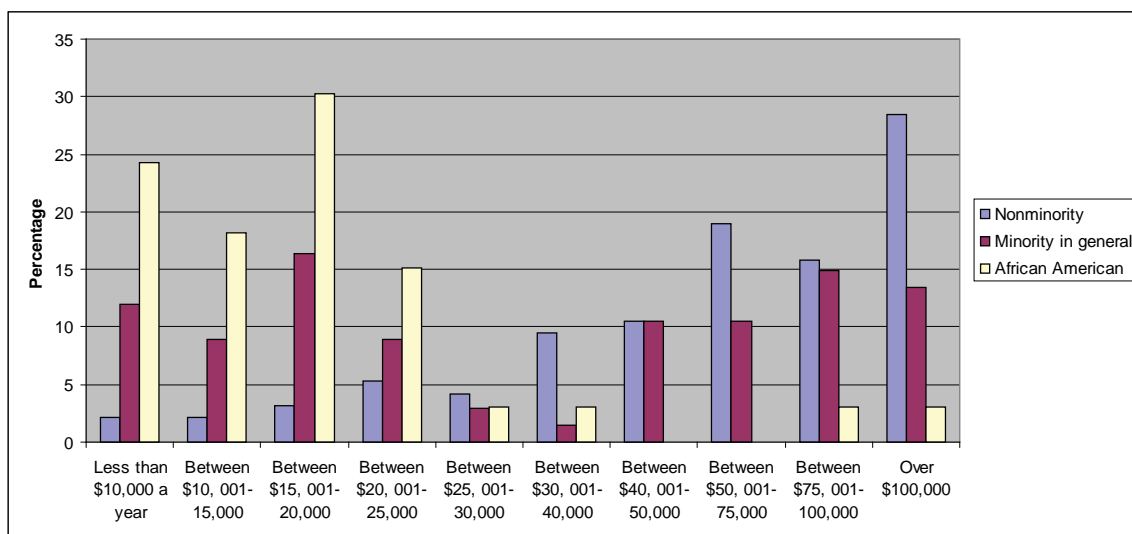
Race/Ethnicity	N	Percentage Distribution
White/Anglo/Euro Amer	194	73.7%
Black/African American	33	12.5%
Latino/Latina/Hispanic	19	7.2%
Asian American	8	3%
Native American	1	0.38%
Multiracial/multiethnic	8	3.04%
Total	263	

In addition to identifying their child's race or ethnicity, parents were asked to identify their child's age (see Table 3 below), as well as the degree or level of their child's hearing loss. The majority of parents (48.9%) reported their children with having severe hearing losses. Profound losses were reported by 42.1% of parents and 8.9% of parents reported their children with moderately-severe hearing losses. No children were reported with having a mild hearing loss. Figure 2 shows the distribution for degree of hearing loss according to nonminority and minority group status. Some minor variability in the level of hearing loss across racial/ethnic groups was noted.

TABLE 3. Number, ages and age range of children according to race or ethnicity

Race/Ethnicity	Anglo/Euro American	Latino/Latina Hispanic	Asian American	African American	Native American	Multiracial/ Multiethnic
Number	194	19	8	33	1	8
Average age	14.7	9.3	14.4	9	19	14.7
Age Range	1- 24	1-18	8-24	2-17	19	1-19

FIGURE 2. Percentage distribution of children’s hearing loss according to severity



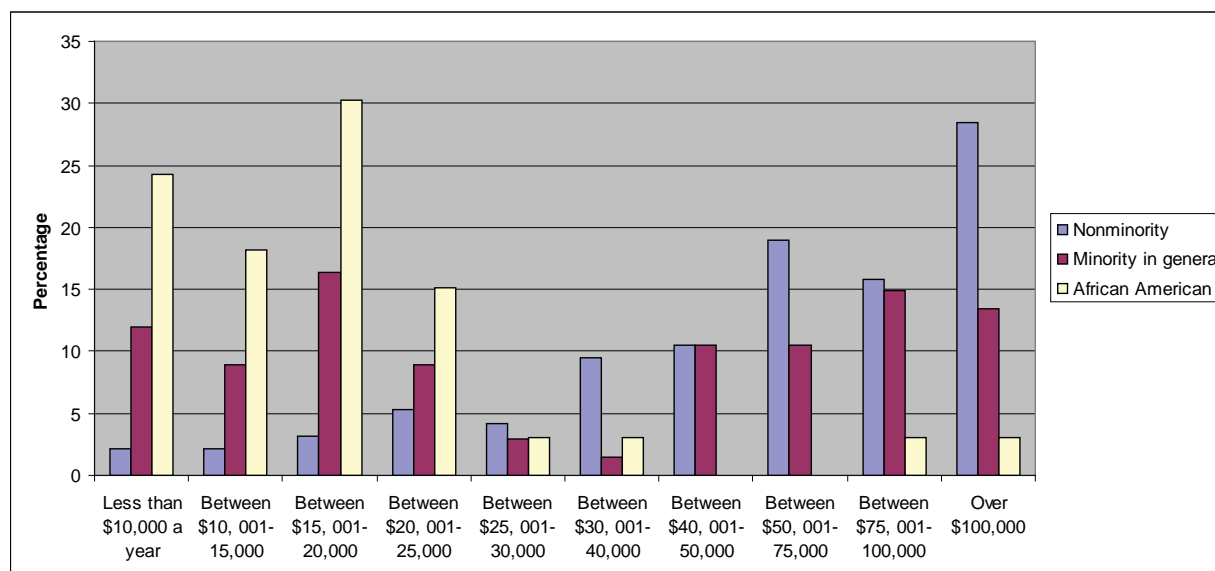
Approximately two-thirds of the parents (65.5%) reported that the cause of their child’s hearing loss was unknown. The other third (34.4%) of the respondents reported meningitis, prematurity, birth trauma and maternal rubella as possible causes.

Parents were also asked to identify whether their child wore conventional hearing aids, cochlear implant(s), or no amplification at all. Table 4 shows the number of cochlear implants, conventional hearing aids or no amplification worn by children (N=263) according to their race or ethnicity. Figure 3 shows the percentage distribution of all children reported in this survey to be using either cochlear implants, conventional hearing aids, or no amplification according to their race/ethnicity.

TABLE 4. number of cochlear implants, conventional hearing aids or no amplification worn by children (N=263) according to their race or ethnicity

Race/Ethnicity	Anglo/Euro American	Latino/Latina Hispanic	Asian American	African American	Native American	Multiracial/ Multiethnic
Cochlear Implant	51	7	4	2	0	1
Conventional aids	94	6	2	10	1	3
No amplification	48	8	3	21	0	2
TOTAL	193	21	9	33	1	6

FIGURE 3. Percentage of children using cochlear implants and conventional hearing aids worn by children according to their race/ethnicity



With regards to the categorical use of cochlear implants, conventional hearing aids or no amplification, a total of 65 children (24.7%) were identified with wearing cochlear implants. Although the majority of the respondents in the survey were Anglo/Euro American, Latino/Latina/Hispanic American parents reported the highest percentage (26.3%) of their children fitted with cochlear implants. Anglo/Euro American children were next with 25.3%. African American children were reported with only 6.06% receiving cochlear implants. Given the very small sample size for Asian American children, Native Americans, and multiracial or multiethnic children, a percentage calculation for cochlear implant use was not calculated.

A total of 116 children (44.1%) were reported wearing conventional hearing aids (i.e., body level, BTE, ITE). Of the Anglo/Euro American children not wearing cochlear implants, 100% were reported wearing some type of conventional personal hearing aid. Of the Latino/Hispanic children not wearing cochlear implants, 66.6% wore conventional personal hearing aids leaving 1/3rd reported to be without personal amplification. As for the African-American children not wearing cochlear implants, 34.4% were reported with using conventional hearing aids, leaving

approximately 2/3rd without use of personal amplification.

Regarding mode of communication used at home, the vast majority (93.8%) of parents reported using speech almost exclusively. Another question in the survey, however, revealed that two-thirds of the parents reported using total communication (a combination of speech, cued speech, gestures and sign language). Only 6.2% of parents reported using American Sign Language (ASL) with their children.

Responses to Survey Questions

The response data from Section 2 and Section 3 of the survey were aggregated according to nonminority, minority-in-general and African-American groups. These data were also aggregated according to two income groups determined by a calculated median value (e.g., Incomes >\$40,000, Incomes <\$40,000). For ease of reporting, the combined percentages for only the affirmative responses (i.e., “Strongly Agree” and “Agree”) are presented. Although none of these data were analyzed, statistically, asterisks are used to identify percentages that appear to be “notably” divergent. Tables 5-8 show these results.

Parent Knowledge/Experience

TABLE 5. Combined “Strongly Agree” and “Agree” responses to survey questions about parent experiences according to race and ethnicity classification

Since considering a hearing aid or cochlear implant for our child we have learned that...	Nonminorities	Minorities in general	African-Americans
...hearing aids/cochlear implants work with everyone who wears one	11.57	0	0
...auditory rehabilitation following hearing aid fitting or implantation is as important as the technology itself	83.68*	29.85	30.30
...our child can now hear perfectly	4.21	0	0
...our child wants to wear the hearing aid or implant all the time	28.94*	0	0

TABLE 6 . Combined “Strongly Agree” and “Agree” responses to survey questions about knowledge gained according to race and ethnicity classification

Since discovering our child has a hearing loss we have learned something about...	Nonminorities	Minorities in general	African-Americans
...hearing therapy (aural rehabilitation)	87.36*	58.20	30.30
...the causes of hearing loss	53.15*	23.88	21.21
...the different professionals providing hearing health services	80	89.55	90.90
...the different methods of communicating with our child (i.e. total communication, cued speech, text messaging, etc.)	86.84*	26.86	21.21
...educational and vocational opportunities for our child	97.36*	53.7	27.27
...sign language (i.e., ASL).	11.57	9.12	10.12
...Deaf culture	57.89*	17.91	9.09

TABLE 7 . Combined percentages for “Strongly Agree” and “Agree” responses to survey questions about information sources according to race and ethnicity classification

Our decision about having our child fitted with a hearing aid or being implanted with a cochlear implant was based on...	Nonminorities	Minorities in general	African-Americans
...information received from hearing health professionals (e.g., ENT doctors, audiologists, etc.)	91.57	95.52	90.90
...information received from other parents with deaf or hard of hearing children	53.15	41.79	86.2*
...information provided in literature from hearing aid or cochlear implant companies	43.68	19.40	0*
...information provided in government documents on hearing loss	25.78	5.97	3.03

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TABLE 8 . Combined “Strongly Agree” and “Agree” responses to survey questions about parent use and acquisition of technologies according to race and ethnicity classification.

The hearing health care services and related technologies with which I am familiar ...	Nonminorities	Minorities in general	African-Americans
...are too expensive	52.6%*	89.9%	92.7%
...are not conveniently located in my community	.52%*	86.5%	78.7%
...do not have service providers who are representative of my social/cultural background	0*	94.02	96.96
...do not use informational materials (i.e. brochures, pamphlets, etc.) that I can easily understand.	14.73	34.32	42.42*
...do not have service providers who can relate to my individual hearing health care needs.	0	0	0
...are not decorated in a manner that is pleasing to me.	11.05	0	0
...have service providers who are unfriendly and intimidating	0	0	0
...have service providers who expect me to do all the work	1.05*	31.34	30.30
...have service providers who are not competent to provide services to persons with my racial and ethnic background	0	0	0
...have service providers who do not communicate with me in a way I can easily understand.	0	0	0
...do not provide timely services, forcing me to wait.	9.47	0	0

Income data aggregated according to nonminority, minority in-general and African American groups were also analyzed and interpreted. The summary of these data are presented in the narrative that follows.

DISCUSSION

Parent Knowledge/Experiences

The results of the survey revealed several notable differences between parent groups with respect to their experiences, knowledge (information obtained), as well as their acquisition and use of hearing rehabilitation services and related technologies. When the parent responses were aggregated according to non-minority, minority-in-general, and African-American group status, it was discovered that approximately 2/3rds of the African American deaf or hard of hearing children, not fitted with cochlear implants, were also not wearing any type of personal amplification. This is in comparison to 1/3rd of Hispanic American children, and in stark contrast to Anglo/Euro American children; none of whom were without a cochlear implant or personal hearing aids. These data are consistent with the findings of Hyde & Power (2005), which showed a five to ten 10 fold difference, respectively, in the use of amplification and cochlear implants by Hispanic American and African American

children compared to Anglo/Euro American children. It is important to note that severity of hearing loss associated with use, based on derived benefit from amplification, are factors that could easily explain why profoundly deaf or even severely hearing impaired individuals might choose not to use prescribed hearing aids. However, the data provided here regarding the levels of hearing loss for each group, showed comparable representation for all hearing loss levels. This would preclude the idea that one particular group of children (e.g., African American) had more severe losses than another group and therefore would be inclined not to use or need to use amplification. In point of fact, African American and Hispanic American children in this sample had quite similar levels of hearing loss represented as did Anglo/Euro American children, yet the use of personal amplification by minority children, in general, was substantially less than that of the Anglo/Euro American children.

Regarding information or knowledge parents acquired about hearing rehabilitation and hearing health care technologies (i.e., hearing aids, cochlear implants, classroom amplification systems) after being told their child was hearing impaired; over 80% of non-minority parents either strongly agreed or agreed that they learned

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that auditory rehabilitation ...is as important as the technology itself. This response was in contrast to 29% and 30%, respectively, of the minority parents in general, and African American parents who either strongly agreed or agreed with the statement. It might be surmised that only those parents whose children had or were actively participating in aural rehabilitation, having been fitted with hearing aids or cochlear implants, would be in a position to accurately judge the importance of those services. Those not participating would not likely be in a position to make any positive judgments, nor be inclined to do so. Similar disparate responses were reported to statements relating to information and knowledge received on the different methods of communication used with deaf and hard of hearing children (e.g., total communication, cued speech, text messaging, etc.). Jones & Kretchmer noted in their 1988 investigation of the attitudes and knowledge of Black parents of deaf children, that conventional models for parent education about hearing rehabilitation, hearing aids, communication methods, etc., were possibly ineffective in teaching culturally different and/or low-income families, and new models were needed.

There also appeared to be a substantial difference in parents' response to statements about the acquisition of knowledge for educational and vocational opportunities for deaf and hard of hearing children. Approximately 97% of the non-minority parents indicated agreement with the statement that they learned something about vocational opportunities for their children after being told of their child's hearing loss. Just 53% of minority parents in general and only 27% of African American parents responded affirmatively to this question.

The responses of non-minority, minority in general and African American parents were in far greater agreement with respect to statements relating to knowledge gained about the causes of hearing loss. Responses were again divergent, though, regarding parents' knowledge about Deaf culture. Approximately 58% of non-minority parents agreed to having learned something about deaf culture after discovering their child was hearing impaired. This, compared to just 17.9% of minority parents in-general and only 9.1% of African American parents. Finally, there were no substantial differences noted for parents' knowledge or experience gained about the different professionals providing hearing health services, nor any substantial differences in affirming their information about the use of sign language.

Parents' responses varied little with respect to statements about their decisions to have their child fitted with a hearing aid or a cochlear implant. Virtually all parents with children fitted with a hearing aid or cochlear implant, regardless of non-minority or minority status, indicated they based their decision on information received from their hearing health care professional (e.g., ENT physician, Audiologist, etc.). A little over one-half (53.1%) of non-minority parents indicated they received additional information from other parents of deaf or hard of hearing children. This compared closely with the 41.8% of minority parents in general and 44.2% of African-American parents. Divergence was seen, though, with respect to information provided through promotional literature and government documents. Forty-four percent of non-minority parents affirmed that information provided by hearing aid and cochlear implant companies helped guide their decision to have their child either fitted with a hearing aid or a cochlear implant. Only 10.4% of minority parents in general, and no African American parents indicated agreement to using such materials in making their decisions. A similar pattern of divergence was also seen for information on hearing health care provided in government documents.

Acquisition and Use

As for factors relating to the acquisition and use of hearing health care services and related technologies (e.g., hearing aids, cochlear implants, assistive systems, etc.), two distinct areas of divergence emerged. Substantial percentages, 89.9% and 92.7% of minority parents in general and African American parents, respectively, agreed with the statement that hearing health care services and related technologies were too costly. This was in contrast to the 52.7% of non-minority parents who agreed with the statement.

The most divergent response on this portion of the survey was to the statement about the availability of hearing health care services (e.g., audiology clinics, hearing aid outlets, etc.). Only one-half of 1% (.52%) of non-minority parents indicated that hearing health care services were not conveniently located in their communities. This is in stark contrast to the 86.5% and 90.7%, respectively, of minority parents in general and African American parents indicating that hearing health care services were not conveniently located. These two responses from African Americans, that hearing health care services and associated technologies are too costly and that services were unavailable in their communities had been identified previously by Jones

& Richardson (1994) as the major reasons hearing impaired African-American senior citizens gave for their underutilizing hearing aids and hearing support services.

Finally, parents were asked to respond to the statement *“The hearing health care services and related technologies with which I am familiar ... Do not have service providers who are representative of my social/cultural background.* Interestingly, none (0%) of the non-minority respondents affirmed this statement, whereas 94 % of minority parents in general and 96.6% of African-American parents agreed with it.

Parent Income

When the data were aggregated according to parent incomes, further disparities were noted between non-minority, minority in-general and African-American groups.. Calculating \$40,000 as the median income for all respondents, 73.7% of non-minority parents had incomes within the upper category; as did 30% of minority parents in general, and 6.1% of the African American parents. When responses to the statements in Sections 2 and 3 of the survey were aggregated, the findings revealed, in general, that parents with moderate to high incomes (>\$40,000), regardless of their racial or ethnic background, agreed to having knowledge of the nature of hearing rehabilitation services, and to acquiring such services for their children and using related hearing health care technologies to a greater extent than did parents with lower incomes (<\$40,000). These findings suggest that socioeconomic status rather than race or ethnicity could be the more critical or discernable factor to account for the differences some parents reported in this study.

Limitations of Current Study

Although “oversampling” is an accepted and more recently popularized research method (Beech & Goodman, 2004), it can introduce broad levels of bias, which in turn, can limit the accuracy and possibly the validity of a study’s findings. In this investigation, where only one of the two cohorts were randomly selected (e.g., parent members of the ASDC), and the other targeted for inclusion because of their potential to yield a larger racial or ethnic minority response, the data are inextricably skewed. Immediately, variables such as income, educational background, occupation, etc. need to be considered. If this study were replicated, the use of a more random and stratified selection procedure, similar to that used by Craig et al (2002) would facilitate a more empirical approach and would likely yield more definitive results.

SUMMARY AND CONCLUSION

Two specific outcomes in this study are worthy of noting, essentially because they align with the results of multiple other investigations (Hyde & Power, 2005; Jones, 1987; Bazargan et al, 2001; National Council on the Aging, 1999; Healthcare Research and Quality, 2004). These outcomes are: 1) racial and ethnic minorities use hearing health care services, hearing aids and cochlear implants at levels substantially below that of nonminorities, and 2) socioeconomics rather than race or ethnicity appears a more discernable factor to account for hearing health care disparities among minorities in general.

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ECHO

APPENDIX A

July 2008

Dear Parent,

Please take a moment to read this letter. The information you are asked to provide in this survey will be used to help hearing health care providers determine why racial and ethnic minorities, who are Deaf or Hard of Hearing, do not use hearing health care services and hearing aid technologies to the same extent as their non-minority counterparts. As a parent of a child with a hearing impairment your thoughts and ideas on this issue are very important. The information gathered will help health care officials like me to discover better ways of providing hearing health care services and technologies to more people who need them.

You should understand that the information you provide will remain anonymous. Only the code number, which you select, will identify your survey responses. Your name will not appear in any reports, briefings, or in any future mailings you might receive regarding this survey. Know also that you have the right to withdraw your information from this study at any time.

I want to thank you in advance for your cooperation.

Sincerely,

Ronald C. Jones

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APPENDIX B

“I understand that the information I provide in this survey will be anonymous and used to help determine why Deaf and Hard of Hearing individuals from ethnic minority backgrounds do not use hearing health care services and related technologies to the same extent as non-minority individuals.”

I agree to participate in the survey _____ (Check Here)

Please return this sheet and the completed survey in the pre-stamped, self-addressed envelope. Thank you.

I do not agree to participate in this survey _____ (check here). Please return the unanswered survey in the pre-stamped, self-addressed envelope. Thank you.

Signature _____ Date _____



APPENDIX C

THE SURVEY

Instruction: Please select a 6 digit number to write in the space below.

The number you select will be used to anonymously file your survey. You will want to keep a copy of this number available to refer to in any future contacts.

General Information –

What is your racial or ethnic background:

- White/Anglo American
- Latino/Latina/Hispanic
- Black/ African American
- Asian American
- Native American
- Other: please state _____

Your child’s racial or ethnic background:

- White/Anglo American
- Latino/Latina/Hispanic
- Black/ African American
- Asian American
- Native American
- Other: please state _____

Your child’s gender:

- Female
- Male

Your child’s age? _____

Where do you live?

City/ State/ Country _____

Family’s Income:

- Less than \$10,000 a year
- Between \$10,000 to \$15,000 a year
- Between \$15,001 to \$20,000 a year
- Between \$20,001 to \$25,000 a year
- Between \$25,001 to \$30,000 a year
- Between \$30,001 to \$40,000 a year
- Between \$40,001 to \$50,000 a year
- Between \$50,001 to \$75,000 a year
- Between \$75,001 to \$100,000 a year
- Over \$100,000 a year
- Other _____

ECHO

APPENDIX C

THE SURVEY (*continued*)

How did you discover your child was hearing impaired? _____

Does your child have a cochlear implant?

No

Yes. How long has your child been implanted? _____

Does your child wear hearing aids?

No

Yes. How long has your child worn hearing aids? _____

What style of hearing aid ?

Body

Behind the ear

Eyeglass

In the ear

Place an "X" in the space that best represents your response:

Statements	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Our decision about having our child fitted with a hearing aid or being implanted with a cochlear implant was based on...					
... Information received from professionals (e.g., audiologists, teachers, physicians, etc.)					
... Information received from other parents with Deaf or hard of hearing children					
... Information provided in literature from hearing aid or cochlear implant companies					
... Information provided in government documents on hearing loss					
... Other sources (_____)					
Our decision about having our child fitted with a hearing aid or being implanted with a cochlear implant was also based on...					
... Our concern about our child's ability to effectively learn to use normal speech and oral language					
... Our decision not to have our child become a member of a Deaf community					
... Our not wanting to have to learn sign language					
... Other reasons (_____)					

ECHO

APPENDIX C

THE SURVEY (*continued*)

Information and Knowledge

Place an "X" in the space that best represents your response:

Statements	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Since considering a hearing aid or cochlear implant for our child we have learned that...					
...hearing aids/cochlear implants work with everyone who wears one					
...Auditory rehabilitation following hearing fitting or implantation is almost as important					
...Our child can now hear perfectly					
...Our child wants to wear the hearing aid or implant all the time					

Racial and Cultural Perspectives

Place an "X" in the space that best represents your response:

Statements	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
My racial and/or ethnic background affects how I...					
...Interact with other people, particularly, those who are racially or ethnically <i>different</i> from me					
...Interact with other people, particularly, those who are racially or ethnically <i>similar</i> to me					
...Causes me to see things around me differently					
...Makes me more sensitive to the cultural and ethnic differences in other people					
...Makes me more suspicious of others who are racially/ethnically different from me.					
	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
...Makes me <i>less</i> suspicious of others who are racially/ethnically different from me					
...Makes me <i>more</i> suspicious of others who are racially/ethnically the same as me.					
...Makes me <i>less</i> suspicious of others who are racially/ethnically the same as me.					

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APPENDIX C

THE SURVEY (*continued*)

Statements	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Racial and ethnic minorities in this country do not participate in general health care as much as non-minorities because...					
...They are generally poorer and cannot afford the health care costs as can more non-minorities.					
...They are less informed than are non-minorities.					
...They do not live in areas where health care services are readily available.					
...They are less concerned about issues affecting their health than are non minorities.					

Thank you for your participation.

ECHO

USING VIDEO VIEWING TO EVOKE HISPANIC CHILDREN'S NARRATIVE SAMPLES

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ABSTRACT

Background. Discourse or narrative sampling is used routinely to examine children's language skills. Conclusions differ as a function of elicitation procedures. Some investigators suggest using multimedia with reconstruction tasks as a choice method. This study was a preliminary examination of the video, *Frankenweenie*, for narrative sampling to examine the language abilities of English-Spanish speaking and English-speaking children.

Method & Procedure. Participants were four normally developing 6 to 9-year-old Hispanic males (Mexican-American). After each narrative elicitation, subjects completed an attitudinal survey about the video.

Conclusions. All 4 children produced lower-level narratives in response to the video. Revision of the protocol is planned to determine the influence of different cues to increase use of episode elements.

Clinical Implications. The case studies were a first step for developing a video protocol for *Frankenweenie* as an alternative to *The Frog Story* and to examine the discourse skills of Hispanic children in the Rio Grande Valley of Texas.

KEY WORDS: Narrative Assessment, Narrative Sampling, Language Sampling, Language Development in Children, Bilingual Language Development, Hispanic Children's Language Development, Multicultural Issues

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INTRODUCTION

Discourse or narrative sampling is a technique routinely used by speech-language pathologists to diagnose communication impairments in children (Kayser, 1998).¹ Conversational discourse is well-established as a basic strategy in assessment. Westby (1991) refers to the oral style, or conversational discourse, as basic to regulating face-to-face social interactions, with topics centered on everyday objects and events. Conversational sampling is considered a lower-level language task, with conversation representing the first type of extended discourse to emerge during the preschool period (Westby, 1991). Narrative discourse emerges after conversational discourse, argued, by some, to represent a more complex form of discourse that serves as the vehicle for eventual comprehension and production of the literate style of discourse necessary for school success (Paul, 2007).

Story or narrative sampling, although used often by speech-language pathologists, is described with greater diversity of viewpoint regarding rationale, process, and outcome. Paul (2007), Hedberg and Stoel-Gammon (1986) assert that analysis of narratives provides useful information about the linguistic and cognitive abilities of the speaker. Hickmann (1991), McCabe & Rollins (1994) and Wigglesworth (1997) are examples of researchers who describe the developmental course of narrative abilities. Other researchers examine the use of narratives

for differential diagnosis between typically developing and language disordered children and adolescents (Liles, Duffy, Merritt, & Purcell, 1995; Miranda, McCabe & Bliss, 1998; Norbury & Bishop, 2003; Weather ell, Butting, & Conti-Ramsden, 2007). Fey, Cats, Proctor-Williams, Tumbling and Zhang (2004) asserted in their study of school-age children that story production tasks are highly educationally relevant and should be used in evaluation of children with Language Learning Disabilities (LLD). In contrast, Lamarque (2004) contends that too much is being expected of narratives based upon the divergent and skimpy evidence to support the numerous claims. Lamarque primarily asserts that not enough is known about the broad area of narratives and research addresses different aspects of narratives.

Despite such controversy as suggested by Lamarque, a preponderance of researchers suggest the utility of this method for inclusion in language assessment. Weatherell, Butting and Conti-Ramsden (2007), in a recent study comparing the narrative samples of 99 typically developing adolescents and 19 adolescents with specific language impairment (SLI), found that adolescents with SLI were distinguishable from their typically developing peers. Adolescents with SLI made more errors than their peers and the errors were found to be qualitatively different. Seven types of errors were analyzed from a retell storytelling task and from a spontaneous personal narrative. The error types included verb tense, subject-verb agreement, lexical errors (made-up words or incorrect word use), subject omission, other word omissions, added morphemes and other errors. SLI subjects produced a higher number of errors in tense and agreement during storytelling and personal narratives when compared to their counterparts. SLI children made errors classified as "other word errors," while typically developing adolescents made no "other

¹Discourse is the general term that encompasses different types of extended talk. Types include conversation and narrative, which can be further subdivided into other descriptors, such as personal, or procedural narrative. Throughout this paper, our discussion is limited to story-telling. The terms, discourse, narrative and story-telling will be used interchangeably.

word errors.” Interestingly, the SLI group produced fewer subject omissions than typically developing adolescents. Both groups, however, produced large amounts of subject omission during spontaneous personal narratives.

If appropriately designed, narrative or discourse sampling may be an excellent technique for assessing language development in bilingual populations and offers a rich opportunity to observe children’s integrated communicative abilities. When used to monitor language growth, sampling is a more accurate and reliable measurement of children’s expressive language and comprehension in comparison to standardized testing which may be characterized by unrepresentative normative samples (Paul, 2007; Weatherell et al., 2007).

Data collected from discourse samples may be used to assess the language of bilingual Hispanic children who speak a dialect of Spanish, code-switch, or speak Spanish-influenced English, or other dialects of English.

Caution, however, is warranted when using narrative assessment. Several factors warrant this caution, because, narrative studies vary in: (1) methodology and the way in which samples have been collected, (2) the ages and language backgrounds of subjects included in such studies, and (3) the claims made about what narratives reveal as suggested by Lamarque (2004).

Narrative discourse is a broad area of study and there is clearly a need to increase the research base to support the way in which assessment is devised, implemented and interpreted. The same studies that offer support for the utility of assessment are limited by various methodological issues. Studies are characterized by different approaches to narrative elicitation and analysis, different subject pools, variable elicitation procedures, and limited attention to cultural variation in narrative structure and content (Botting, 2002; Gilliam, Peña & Miller, 1999; Liles, Duffy, Merritt & Purcell, 1995.) The current study does address these issues by using subjects who are all of Mexican-American heritage, living in the same geographic location, and attending similar schools. Further, as is discussed more thoroughly later in the paper, detailed information is provided regarding elicitation procedures. The third investigator, who is bilingual and Mexican-American, elicited the samples.

Overview Of Narratives Elicited For Assessment

Narratives may be broadly characterized as personal, script or fictional, according to Hughes, McGillivray, and Schmidek (1997). Personal narratives recount significant personal experiences. Script narratives concern a particular

routine or series of events, while fictional narratives refer to generation of a story or retell of a story, television show or movie. Story generation is considered more difficult than retell tasks.

Narratives are characterized by macrostructure and microstructure. Macrostructure refers to the overall structure of story elements or story grammar elements. A classic system for developmental classification of narratives that is frequently referenced in speech-language pathology literature was developed by Applebee (1978), as described in Paul (2007). Five developmental stages are summarized by Paul, with Stage 1 consisting of Sequence/Primitive Stories and Stage 5 culminating in true narratives, containing a central theme, character, and plot. True narratives are temporally organized and will contain at least five story grammar elements. Basic grammar elements are the setting and episode. An episode consists of five elements: an initiating event, internal response of the character, a plan, an attempt based on the plan, a consequence and reaction. The most complex stories may contain multiple episodes, complex episodes, embedded episodes or interactive episodes.

In addition to setting and episode, cohesive devices are considered part of the macrostructure that hold a story together. Cohesive ties are pronouns, conjunctions and conjunctive adverbs that connect sentences together in discourse. For a more complete discussion of the subject, see Applebee (1978) and Westby (2005).

Microstructure is a reference to the structure of individual sentences and would include sentence type (simple vs. complex), sentence length, and vocabulary.

Culture and Ethnicity

Culture and ethnicity should be taken into account when narration is used for assessment. Researchers should consider differences in story-telling across cultures when devising sampling procedures, comparative criteria, and normative milestones. A case in point is the attention to detail that may distinguish the narratives produced by Hispanic children. In contrast, for example, the narratives of African American children are characterized by emotional appeal to the audience (see, for example, Curenton, Wilson, & Lillard, 2000). In the Hispanic culture, listeners judge storytelling or “cuentos” excellent when every detail is told (Winkler, 2003). Therefore, the listener will have the full effect of the story. African Americans value the emotional appeal and judge a story excellent if storytelling engages the audiences’ emotions—even if details are exaggerated

or omitted.

Heath (1986) suggests that many Hispanic children are socialized in a context of unequal roles and status from adults. These experiences might lead to wide individual variation in the size of samples and the quality of discourse samples produced by Hispanic children. Some Hispanic children may be unaccustomed to conversing freely with adults when adults solely use an interview or adult-child play strategy to elicit narratives.

Language Variation

Gutiérrez-Clellen, Restrepo, Bedore, Peña and Anderson (2000) published methodological considerations for spontaneous language sampling in Spanish speaking children. Methodological issues included effects of codeswitching, and dialect as assessed with the Developmental Assessment of Spanish Grammar (DASG), mean length of response in words (MLR-w), mean length of terminable unit (MLTU), and mean length of utterance in morphemes (MLU-m) (Gutiérrez-Clellen, et al., 2000).

Children's Social and Learning Experiences

It is also important to consider children's experiences with toys, books, computers, and videos. For some Hispanic children, using a book may be an unfamiliar interaction between an adult and child. Moreover, it may be an unfamiliar style of telling stories (Kayser, 1998). The studies currently available whose subjects are Hispanic children have used books and videos to elicit narratives.

The Influence of Input and Task Type On Narratives

Gibbons, Anderson, Smith, Field, and Fischer (1986) examined the influence of input and narrative type on children's productions. Children, ages 4 to 7 years of age, were presented brief stories through an audio or audiovisual media. Authors produced alternate story types, with one story consisting of narration matched to character actions. In the audiovisual version, stop animation was used instead of auditory narrative of character actions. Younger children were more likely to report action than utterances regardless of input. Audiovisual input produced superior performance on explicit information produced by the four-year olds. The authors also found that reconstruction was superior to recall for children's narrative production.

This study provides some guidance regarding key factors that must be considered for future studies. A retell/recall task is different from a reconstruction task which may involve the child having some choice to generate a

unique viewpoint or reaction to the stimulus. Retell may be a task more heavily weighted by memory than discourse (Gibbons et al., 1986). Thus, retell activities may reveal less about the child's ability to construct macro narrative structures, but reveal more about what the child can recall immediately about sentences heard. Further, the type of stimulus does seem to have an influence on narratives produced by children, according to Gibbons et al. (1986), with audiovisual described as a superior input, given that the children have multiple sources of input, which appear to enhance comprehension and retelling. Recall, also, that for many Mexican American children, storytelling routines between parent and child may not include experiences with books (Gutiérrez-Clellen et. al., 2000). In Southwest Texas, inclusion of dramas, plays and movies are common in the schools and local churches. This lends some support to incorporation of film, video or DVD for narrative elicitation.

Gutierrez-Clellen and Hofstetter(1994)used movie retellings of 77 school-age, Spanish-speaking children to examine the children's development of oral narrative organization, with focus on the use of temporal and causal coherence devices. The authors reasoned that children's use of complex syntax in narratives may reveal important information about their facility with school literacy. The subjects were 28 preschoolers, 26 first-graders, and 23 third-graders who were all native Spanish Speakers. A strength of the study is that they describe the children's background to provide additional insight. There were 46 Puerto Rican and 31 Mexican American children sampled from two public schools in a school district located in New Jersey and from a third school in Southern California, respectively. The Puerto Rican and Mexican American children were attending inner-city schools. All children were enrolled in bilingual classes. At the time of the study, all children were receiving content instruction in Spanish and English as Second-Language instruction one hour daily, through pull-out.

The children viewed a short silent movement, "Frog Goes to Dinner", lasting about 7 minutes. A Spanish-speaking interviewer pretended she had not seen the film and asked the child to tell the "whole story." Preselected prompts were used, including, for example "Keep going, keep going, I really want to know the story." Stories were audiotaped and transcribed verbatim. Transcripts were coded for T-units which were further analyzed into their constituent structures, including relative clauses, nominal clauses, infinitive clauses, adverbial clauses, adverbial phrases, and

prepositional phrases. The investigators identified a number of developmental differences in syntactic complexity. The investigators found some differences across the two Spanish language groups in syntax between Puerto Rican and Mexican American children. The investigators described the study as preliminary and provide an example of a methodology that incorporated video with story retell.

Gillam, Peña & Miller (1998) utilized the same story as used by Gutierrez-Clellen & Hofstetter ("Frog Goes to Dinner") (Mayer, 1974 in Gutierrez-Clellen), A wordless picture book and the film were used to study Spanish-speaking children's syntactic skills. The task involved the same story, presented in a wordless picture book and in a 7-minute color movie with no dialogue. The interviewer was Spanish-speaking. After each child watched the movie, they were asked to tell the story. The interviewer pretended to have not seen the video to encourage children to provide expanded story-telling. After retelling the movie, the child looked at the picture book and retold the story a second time. The researchers found no significant task differences in complex language use between children with low and average school achievement from kindergarten to fifth grade. One can assume that there were reduced memory demands for narrative production in this study since the children had the opportunity to tell the same story twice. Further, this study involved only retell, with a focus on syntax rather than narrative generation. The few studies that are available demonstrate the usefulness of film/video input and retell tasks to find out about children's syntax and use of cohesive ties. None of the studies that focus specifically on Spanish-speaking children provide information regarding the influence of reconstruction or novel generation of narratives. To our knowledge, researchers have not examined the quality of narratives based on retell of a familiar story vs. generation of a narrative based on retell of an unfamiliar story.

The present investigators decided to examine the effectiveness of videos as a general purpose method for gathering samples, using a silent black and white video characterized by multiple episodes, with an obvious conflict that motivates the main character's actions: his pet dog that he loves is run over by a car. The Frog series of wordless picture books are excellent stimuli and well-established in the literature; however, research supports that audio-visual input may be associated with superior narrative production in some children (Gibbons, Anderson, Smith, Field, & Fischer, 1986).

Videos are readily available in both home and school

environments. Further, television viewing and exposure to media is common among low, middle and high socioeconomic status homes. Therefore, videos or DVD may be the choice material for evoking samples from a wide variety of children of diverse backgrounds.

With this in mind, the present investigators made the foray into the forest of narrative assessment for the purposes of focusing on some basic methodology issues: (a) use of video to elicit narratives, and (b) the content and structure of narratives generated by normally developing, school-age bilingual children who viewed the videos.²

The purpose of this study was two-fold including (1) an opportunity to examine a protocol for discourse sampling that involved a video and (2) an opportunity to examine the effectiveness of the video for eliciting narrative samples from Hispanic children with the sample involving both story retell and reconstruction.

The questions addressed by this study were:

- How do bilingual children respond to videotapes in discourse samples in comparison to monolingual children?
- What level of narrative development do the children exhibit?
- Can videos be used to effectively evoke representative samples of children's narratives?

METHOD

Subjects

Hispanic children living in the Rio Grande Valley region of south Texas in the United States represent the complete continuum from monolingual (Spanish or English) to bilingual (Spanish-English). Mexican Americans constitute the majority of the population in this region of the state, with a population just under 200,000, combined for the two cities from which subjects were recruited (U.S. Census Bureau, 2007). Persons of Hispanic or Latino origin are estimated at 88.7% of the population, based on current census data for 2003, with 81.8% of individuals reporting speaking a language at home other than English.

Four normally developing Hispanic males between the ages of 8-6 and 9-2 years were recruited via the professional contacts of our third author. All procedures were explained to the parents prior to the investigation. Two of the males

²Even though children varied in English-Spanish proficiency, all had been exposed to both languages and represent a range along a continuum from Spanish to English.

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were bilingual (English/Spanish) and two of the males were monolingual (English). All participants were natives of the Rio Grande Valley and were similar in socio-economic status based on parental education and employment, with frequent exposure to Spanish even for the monolingual English speakers.

In order to qualify for this study, the subjects had to:

- be performing at grade level,
- have passed a hearing screening across the frequencies of 250 Hz to 4000 Hz at an intensity of 25dB during the past six months,
- exhibit normal language skills as indicated by the CELF Screener (Semel, Wiig, & Secord, 1989) and the Spanish Language Assessment Procedures, (Mattes, 1995).

Subjects were visited at a site that was most convenient for their parents or at school. The two bilingual subjects were recruited two weeks prior to the investigation. Our third investigator met the two bilingual subjects in their aunt's home approximately four hours prior to gathering the data.

The third investigator maintained a similar routine for each subject. A meeting would occur with the parent. Informed consent was obtained and arrangements would be made to collect the sample.

Subject Descriptions

M.M., the monolingual English-speaking male, age 8-11 years, attends third grade at a private school located in the upper western region of the Rio Grande Valley. He is an only child and resides in a household with his mother and grandparents. English is the primary language spoken at home; however, parents and grandparents are bilingual.

G.G. was introduced to the third investigator one week prior to gathering data. Data was gathered at school in a quiet room away from the regular classroom. G.G., the second monolingual English-speaking male, age 8-7 years, attended third grade at a private school in the upper western region of the Rio Grande Valley. He is the middle child with two other siblings, an older brother and a younger sister. He resides in a household with his parents and siblings. English is the only language spoken at home. The two bilingual males, E.G. age 8-6 years and K.G. age 9-2 years, were siblings attending third grade at a public school in the upper western region of the Rio Grande Valley. The school district offers a dual (English/Spanish) curriculum for children until the third grade. Both children were enrolled in school as non-Limited English Proficiency (S.G., personal communication, January 3, 2002). The

subjects are the youngest of four siblings and reside in the home with their mother. So, the children differ in age by only 8 months - an unusual circumstance. In addition, the youngest subject was born premature (S.G., personal communication, January 3, 2002). It is not known if the prematurity was due to gestational age or birthweight, or both. All developmental milestones were met at the appropriate times. A combination of Spanish and English are spoken at home.

GENERAL PROCEDURES

Subject Recruitment and Testing

The third investigator observed subjects in a routine setting, such as school or home. The two monolingual subjects were observed interacting with other children during the after school program. The two bilingual subjects were observed interacting with their family. Only the two bilingual subjects, K. G., 9-2 and E. G., 8-6, exhibited code switching (interchanging Spanish and English during their conversations with family such as: "Yo quiero play ese game!" "Ya, you won?"). All four children were observed to be active conversationalists, exhibiting assertive and responsive acts such as requesting information, clarifying, and using language to seek attention or actions (Fey, 1986). Subjects were individually administered the CELF Screener (Semel, Wiig, Secord, 1989) and/or the Spanish Language Assessment Procedures, (Mattes, 1995) which indicated normal language use by all four children (Mattes, 1995).

After completion of all testing, each subject was shown the same 10-minute video sequence from the video *Frankenweenie*®. After viewing the video sequence, the subjects participated in a controlled conversation using the language sampling directions for the *Frankenweenie*® video to explain what they had seen in the video and to construct an ending for the story (see Appendix B). The sample was audiotaped on a Sony Cassette-corder model number TCM-929, which was equipped with a Radio Shack boutonniere microphone, model number 33-3013 attachment, to insure speech clarity. After the sample was obtained, each subject answered a 21-question attitudinal survey regarding the video (see Appendix A).

Data Analyses

Each sample was transcribed orthographically. One week later, a sample was randomly selected for a second transcription for intra-judge reliability. Intra-judge reliability was 92.4% and was determined using the

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following formula: (total # of words in agreement/total # of words·100). After orthographically transcribing each sample, the third author and first author met to discuss the criteria for analyzing the samples.

Each sample was assessed for total word count (TWC), total morphemes, sentence complexity, clausal types, T-units, type token ratio (TTR), narrative structure and fluency. Criteria for rating narrative structure were based on descriptions by Applebee (1978), Botvin and Sutton-Smith (1977), Westby (1984) and others. Criteria for determining total word count (TWC), total morphemes, type token ratio (TTR), sentence complexity, and fluency were based on Shipley and McAfee (1998). Guidelines for segmenting utterances or T-units were based on Lund and Duchan (1993). These measures with descriptions of the calculations appear in Table 1.

Table 1. Summary of Measures and Description of Calculation

Measure	Description	Reference
Total Word Count (TWC)	Total # of intelligible words in entire sample counted	Shipley & McAfee (1998)
Total Morphemes (TM)	Total # of free/bound morphemes	Shipley & McAfee (1998)
Sentence Complexity	Total # of sentences (Simple vs. complex sentences)	Lund & Duchan (1993)
T-Units (Clausal Units)	Total # of main clauses with all subordinates and phrases attached or embedded	Shipley & McAfee (1998)
Type-token Ratio (TTR)	To measure lexical diversity (tndw/tnw) X 100	Shipley & McAfee(1998)
Narrative Structure Each narrative was classified		Applebee (1978)
Narrative Structure Classifications		
1. Sequence/Primitive	1. No central theme or organization.	
2. Sequence/Primitive	2. Labeling events around a theme, with events not necessarily temporally related.	
3. Primitive Narratives	3. Central person, object or theme, with at least 3 story grammar elements.	
4. Chain Narrative	4. Cause-effect and temporal relationships, first evidence of some plan or discussion of character motivation.	
5. True Narrative	5. Stories with a central theme, character and plot. All 5 grammar elements included: setting, initiating event, an action, consequence, resolution	
Fluency	A Dysfluency Index was calculated for each subject.	Shipley & McAfee (1998)

Five microstructure measures (total morphemes, sentence complexity, T-units, clausal types and sentence types) were syntactic and one, the type-token ratio, was semantic. The type-token ratio is used to assess a child's functional vocabulary skills and also reflects the diversity of words used by the subject during the language sample (Shipley and McAfee, 1998). The formula for determining type token ratio is: (tndw/tnw)·100. Total morphemes were assessed also using criteria based on Shipley and McAfee (1998). A morpheme is the smallest meaningful unit of language (Shipley & McAfee, 1998). Both free and bound morphemes were analyzed for each sample. The utterances were segmented based on guidelines by Lund and Duchan (1993). Partial utterances, unintelligible utterances, discourse markers (um), and noises were

excluded from the count. Plurals, gerunds and participles that are not part of the verb phrase, irregular past tense, uninflected lexical morphemes and grammatical morphemes were counted as one morpheme. T-units were segmented using pitch intonation patterns, which were the most reliable and distinct in the samples. Each T-unit was distinguished using slashes to indicate pitch change and numbered individually on each sample. No capitalization or punctuation was used. Sentence complexity was another measure used to assess each sample. The first 20 utterances of each sample were assessed for clausal structures such as: clause type (independent or dependent), complex verb structure, subject type, relative or compound. Sentence types analyzed included the four basic types: declarative, imperative, interrogative or negative. In addition, each

sample was analyzed to determine the occurrence and types of dysfluencies exhibited. Each subject's data is described subsequently in order.

The macrostructure measure used was semantic-pragmatic (narrative structure). Criteria for rating narrative structure were based on the descriptions by Applebee (1978), Botvin and Sutton-Smith (1977) and Westby (1984). Sequence/Primitive narratives have no story macrostructure, relationship or organization among elements or individual microstructures. Text organization comes from whatever attracts attention. Sequence/Primitive narratives are a step above Sequence/Primitive narratives.

RESULTS

Bilingual Subjects

In order to examine discourse samples evoked with a videotape, several language measures were obtained. E.G. produced a total word count of 460 with 476 total morphemes (see Figure 1). His type token ratio was .27 (see Figure 2) with 55 T-units in the sample (see Figure 3). E.G. had a total dysfluency index of 3.91%, the lowest index between the four subjects (see Figure 2). Dysfluencies included phrase repetitions and revisions, word and part word repetitions, word revisions, broken word, and interjections. Narrative maturity rating indicated that E.G. was in the Sequence/Primitive Stage of narrative development. Of the 20 sentences analyzed for syntax, E.G. produced 13 independent clauses, the most between all four of the subjects. In addition, E.G. produced 2 dependent clauses, and 5 conjoined clauses. No complex verb phrases, subject or compound clauses were noted. Nineteen of the 20 clauses were declarative and one clause was negative.

K.G., the second bilingual participant, produced 294 total words in his sample with 285 total morphemes (see Figure 1), the least among the four subjects. His sample included 37 T-units and a type token ratio of .35 (see Figures 2 and 3). K.G. produced the least amount of words and morphemes of the four subjects, but used the greatest variety of words in comparison to other participants. A total dysfluency index of 3.74% included whole and part word repetitions, phrase repetitions, and word and phrase revisions, the lowest total dysfluency index between the four subjects. Narrative maturity rating indicated that K.G. was in the Sequence/Primitive stage of narrative development.

Of the 20 sentences assessed, K.G. produced 11 independent clauses, three dependent clauses, one

compound clause, 2 conjoined clauses and three embedded clauses. No complex verb phrases or subject clauses were noted. K.G. produced 18 declarative clauses, and 2 negative clauses.

Monolingual Subjects

G.G., a monolingual participant, matched with E.G. his bilingual counterpart, produced a total word count of 452 with 473 morphemes (see Figure 1). His type token ratio was .33 (see Figure 2) with 48 T-units in his sample (see Figure 3). The total dysfluency index of 3.98% included interjections, phrase and part-word repetitions, word revisions and a prolongation (see Figure 2). Narrative maturity rating indicated that G.G. was in the Sequence/Primitive stage of narrative development.

Of the 20 total sentences assessed, G.G. produced 7 independent clauses, zero dependent clauses, 3 complex verb phrases, one subject clause, and 6 compound clauses. No conjoined or embedded clauses were noted. Eighteen of the clauses were declarative. One interrogative clause occurred. In addition, no negative or imperative type clauses occurred.

M.M., the second monolingual participant, produced a total word count of 431 with 486 total morphemes (see Figures 1). A type-token ratio of .34 was calculated (see Figure 2) and his sample included 69 T-units (see Figure 3), the most among the four subjects. M.M. had the highest dysfluency index of 5.56% that included sound/syllable interjections, word and phrase repetitions and revisions. Narrative maturity rating indicated that M.M. was in the Sequence/Primitive stage of narrative use.

Of the 20 sentences analyzed, M.M. produced 9 independent clauses, 1 dependent clause, 3 complex verb phrases, no subject clauses, 1 compound clause and 6 conjoined clauses. Seventeen of the sentences were declarative; two sentences were negative and one sentence was imperative.

Figure 1. Total Word Count and Total Morphemes

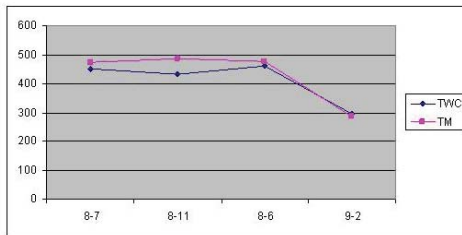


Figure 2. Type Token Ratio and Total Dysfluency Index

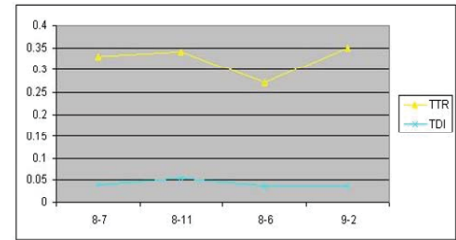
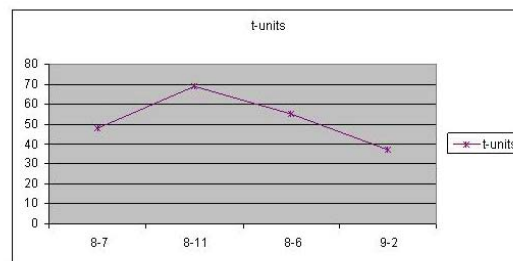


Figure 3. T-units



Survey Responses

Each participant's response to the same 10-minute segment of an unfamiliar black and white 30-minute video, Frankenweenie©, about a little boy and his dog, was measured via a twenty-one item survey to determine their attitude to the videotape (see Appendix A). Eight of the questions on the survey questioned the children's likes or dislikes regarding the video. Five questions pertained to the number of videos each subject watched at home or at school. Two of the questions pertained to favorite pastimes that subjects enjoyed at home. One question was about a like or dislike for reading, and one addressed what subjects enjoyed doing during free time. Another question was about the amount of time subjects spent watching videos. The last question asked each subject to name at least three videos that they thought children like to watch. Two of the questions were transition questions to be used if a subject would answer negatively.

Questions 1 thru 5. All four of the subjects spoke favorably of the video. However, subjects E.G. and G.G. did not like the color (black-and-white); M.M. did not like the main actor and K.G. did not like the neighbors.

Questions 6 thru 10. All subjects indicated that they would recommend the video to other children. Both monolingual subjects stated that they would recommend it because it was interesting. Both bilingual subjects stated that they would

recommend it because the "boy made the dog come back to life." Both monolingual subjects and one bilingual subject agreed that the video was a good way to find out how well kids can talk. K.G., 9-2, stated that it was not. M.M., 8-11, indicated that talking about videos was a good way to find out how kids talk because it would increase their memory. G.G., 8-7, stated that it would get the kids to tell you how they felt about the movie. E.G., 8-6, gestured that he didn't know and K.G., 9-2, indicated that having seen the movie would make him want to tell his friends, and then they would not enjoy the video as much afterward because he would have already told them about it.

Questions 11 thru 15. All four subjects indicated that they watched videos at school. However, the reasons for watching videos were because of bad weather, as a reward, or to learn new things. Three of the four subjects indicated that they watched videos with family. M.M. indicated that he watched videos with friends.

Questions 16 thru 21. All four subjects indicated that they liked to read. Three of the four subjects indicated that their favorite thing to do at home was play videogames. M.M. indicated that he preferred to draw. G.G. also indicated that he enjoyed riding his bike. K.G. indicated that he also enjoyed playing with his cousins.

During free time, E.G. indicated that he preferred to play videogames, play sports and play with friends.

ECHO

G.G. indicated that he preferred to play videogames. M.M. indicated that he would prefer to read a book, play videogames, and sports. K.G. indicated that he preferred to play sports with friends during his free time.

Each subject was asked to name at least three videos that “kids” like to watch. E.G. named Pokemon: The Movie, Mew Two Returns and Mew Vs. Mew Two. G.G. named The Borrowers, Tall Tale and The Magic School Bus. M.M. named The Borrowers, Jumanji, and Mickey Mouse. K.G. was the only subject to name only two movies, which were Balto and Jurassic Park.

DISCUSSION

The purpose of this study was to determine how four normally developing bilingual/monolingual males would respond to a videotaped narrative sampling procedure. A strength of the study was that the students exhibited a spectrum of exposure to the Spanish language, in that two were Spanish-speakers with exposure to Spanish through bilingual education and at home. In contrast, one was English-speaking, with exposure to Spanish at home, and one was English-speaking with exposure to English at home and school. Ten minutes of the video, *Frankenweenie*, were shown to participants who were instructed to retell the story and construct an ending for the story and explain how the story may have started. The purpose of the protocol was to evoke reconstructed narratives, with research indicating that reconstruction is superior to recall (Gibbons, Anderson, Smith Field, & Fischer, 1986). The data collected was a first step toward acquiring profiles for normally developing children in the Rio Grande Valley, and providing insight regarding their expressive language development.

Three questions were addressed. First, how do bilingual children respond to videotapes in discourse samples in comparison to monolingual children? Monolingual English-speaking and Bilingual, Spanish-English speaking children produced comparable samples, with similar results for morpheme use, vocabulary, and syntax. Recall that sentence complexity was analyzed based on the first 20 sentences of each sample, serving as a screening indicator for normal syntactic development.

Secondly, what level of narrative development did the children exhibit? All children demonstrated early narrative types. Three of the four case study subjects produced Sequence/Primitive narratives, which are a level above *Sequence/Primitive* narratives. E.G., the bilingual subject, produced a true *Sequence/Primitive* narrative. Sequence/

Primitive narratives are the earliest, simplest attempts at storytelling. E.G. ended his story abruptly by saying “the end.” This was the only behavior he exhibited that can be described as evidence of a *sequence* narrative. Both bilingual subjects told specific and numerous details of the action in the video. The children were alert to weather, the dog barking, and many actions by the dog.

The monolingual subjects did not state as many details, in comparison to their bilingual counterparts. When asked to “tell everything you saw,” the monolingual subjects began with a very general answer (i.e., “I saw a movie about a boy and his dog.”) as compared to the bilingual subjects who told specifics about what they saw in the video (i.e. “A kid named Victor and a dog named Sparky.”). The third author and investigator used more probes with neutral queries (Oh, Hmmm and Uh-huh) and general comments with the monolingual subjects than with the bilingual subjects.

As attitude does influence children’s performance, we assumed that subjects who did not like the video might have produced a poorer sample. All of the case study subjects had positive attitudes toward the video, and all subjects produced representative samples that reflected their typical language abilities as confirmed by teachers and parents. E.G., age 8-6, and K. G., 9-2, produced 17 of 19 positive responses when surveyed, while G. G., age 8-7 and M. M, age 8-11, produced 19 of 19 positive responses regarding the video.

Third, can videos be used to effectively evoke representative samples of children’s narratives? It is apparent that in this study, videotapes were found to be useful in evoking narrative samples. Detailed profiles have been provided that can be used for devising future studies.

Limitations

Interpretations are limited because of the study size, use of only male subjects, the birth history of one subject, narrow age range, elicitation procedures, and exclusion of mazes or nonfluent speech. The narrative samples evoked were based on exposure to an audiovisual stimulus for ten minutes, with the task of retelling what was seen, and generating a novel ending for the story and predicting how the story may have begun. Based on work by Gutierrez-Clelland and colleagues, perhaps allowing the child to view the video twice, with retell occurring after the first and second viewing, followed by story generation might result in higher-level narratives.

A different set of preplanned prompts might influence a more mature form of narrative production for some

children during fictional narrative elicitation, in addition to modifying the protocol to allow for two viewings of the video. Future studies will include different narrative types (personal, script and fictional) and their relationship to literacy as well as different prompts to provide all study participants opportunity to produce macrostructures (setting and episode elements).

Conclusions

Frankenweenie is a useful and enjoyable film to use for narrative elicitation and should be used in future studies with larger samples and a modified protocol for elicitation of story grammar elements (setting and episodic structure). See Appendix B for a description of prompts used to elicit the samples. At some point, *Frankenweenie* may be used as extensively as *The Frog Story* for elicitation of complete narratives. The story is multiepisodic with clear portrayal of a dilemma (the dog dies), character's internal motivation (the boy loves his dog and wants him back), and resolution of the problem by the boy bringing his dog back to life. In the current study, the four normally developing children produced lower-level narratives. Prompts for specific macrostructure elements may have influenced production of higher-level narratives and a more complete record of their narrative skills.

Despite limitations, investigators conclude that, in this study, the audiovisual presentation was effective in evoking at least lower level narratives, and effective in evaluation of syntax. This pilot study was insightful regarding how *Frankenweenie* might be used more effectively to elicit samples. Elicitation procedures have been modified, and will be incorporated in an experimental design comparing narratives elicited after one viewing versus two viewings. Future studies will incorporate measures as suggested by Wetherell et al. (2007) which examine narratives in four areas: productivity, syntactic complexity, syntactic errors and performance, using both CHAT and CLAN for narrative transcription (MacWhinney, 2000 in Wetherell et al., 2007). In addition, future studies will address children's attitudes about storytelling and the influence upon the narratives produced.

ECHO

APPENDIX A

Survey Regarding *Frankenweenie* And Children's Video viewing Video

By

Nola T. Radford, Ph.D., CCC-SLP

1. Did you like the video? (Go to question 2 if the child liked movie; Go to question 3 if child did not like the movie)
2. Because you like the movie, I need to find out how much you liked it. I will give you some choices; listen to all of them before you choose. (Go on to 4)
 - a. I liked it a little.
 - b. I liked it a lot.
 - c. I liked it better than most movies I see.
 - d. I like it better than all of the movies I have seen.
3. Because you did not like the video, I need to find out how much you did not like it. (Go on to 5)
 - a. I didn't like it much.
 - b. I did not like this movie
 - c. I really did not like this movie
 - d. This was the worst movie I have ever seen.
4. Tell me what you liked about the video.
 - a. The characters?
 - b. The dog?
 - c. The story and what happened?
 - d. Something else? (May indicate something about the color)
5. Tell me what did you not like about the video.
 - a. The characters?
 - b. The dog?
 - c. The story and what happened?
 - d. Something else? (May indicate something about the color)
6. Do you think other kids would like this video?
If 'no' go to 7 and if 'yes' got to 8.
7. Follow-up: if kids say no: Why wouldn't other kids like this movie?
8. Follow-up: If kids say yes: Why would other kids like this movie?
9. Do you think talking about videos is a good way to find out how well kids can talk?
10. Why is talking about videos a (good/not good way) to find out about how kids talk?
11. How many videos do you watch?
 - a. I watch a video or movie about once a week.
 - b. I watch more than 3 videos a week.
 - c. I watch about 5 or more videos a week.
12. Have you watched videos at school?

ECHO

APPENDIX A (continued)

13. Think about how many videos you see at school, do you see:
- Not a lot of videos
 - Videos sometimes at school
 - A lot of videos at school (once a month or more)
 - Too many videos at school (every week)
14. Tell me all the reasons you watched videos at school.
- For inside recess when the weather is bad.
 - As a reward for my class when the teacher says our behavior or work is good.
 - To learn new things
 - Any other reasons
15. At home: Do you watch videos:
- By yourself (sometimes or most of the time)
 - With friends (sometimes or most of the time)
 - With family (sometimes or most of the time)
16. What is your favorite thing to do at home?
17. Do you do your (name favorite thing)
- Everyday
 - At least 3 times a week
 - On the weekends
 - Sometimes, but not a lot
18. Do you like to read? (Yes or no)
19. When you have free time would you rather:
- Read a book
 - Watch a video
 - Play a video game
 - Play basketball, baseball, or football
 - Ride my bike
 - Anything else?
20. Do you think you watch?
- Videos sometimes
 - Videos a lot
 - Videos too much
 - I watch about the right amount of videos
21. Tell me some of the videos kids like to watch. (Have child name at least 3)

ECHO

APPENDIX B

Directions For Language Sampling With Frankenweenie© Video

Dr. Nola T. Radford, Ph.D., CCC-SLP

CLINICIAN: You are going to see part of a video. It's called "Frankenweenie." Have you seen it before?

[CHILDREN'S RESPONSE HERE]

If you have seen it before, that's OK. Make sure you watch and listen carefully. In a while, I will ask you to describe what you saw to someone else who has not seen the video. I want you to try to describe everything you see, from the beginning until the end.

The story is about a boy named Victor and his dog Sparky.

*Who is in the video?

[CHILDREN'S RESPONSE HERE/IF THE CHILD DOESN'T REMEMBER THE NAMES, REMIND HIM/HER AND REPEAT QUESTION ABOVE]

SEGMENT TO SHOW

Directions. Make sure you have checked that the video is at the correct starting point beforehand. Fast forward past the opening, movie credits and first classroom scene. Begin playing the segment at the point where Victor is walking into his house after school. His mother is on the phone.

Show about 10 minutes of the video.

Then provide the following instructions:

INSTRUCTIONS AFTER VIEWING

CLINICIAN: Alright, now I'm going to bring _____ in. I want you to tell him/her everything you saw.

INSTRUCTIONS FOR LISTENER/INTERVIEWER

Directions. Talk as little as possible. Begin with a statement, such as "Tell me all about the video you just watched". While the child is talking, you may use any of the following:

NEUTRAL QUERIES-- "Hmmm, Oh, Un-hunh..."

GENERAL COMMENTS-- Repeating something the child just said.

STATEMENTS -- "Wow, he really loved his dog..."

CLOSING-- "I wonder how this story might end."

"You tell me."

"I wonder how this story began."

"You tell me what you think happened before as the story began."

Avoid "wh" questions during this sample, except those listed.

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