Deaf Consumers' Views About Captioning

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Caption Format Features Preferred by Deaf People Are Identified

by Carol J. LaSasso and Cynthia M. King

The Television Decoder Act of 1990 which went into effect July, 1, 1993 was a major step toward television accessibility for deaf viewers. That act requires that virtually every television set larger than 13" sold in the United States must be equipped with decoder circuitry. The soon-to-be widespread availability of captions will impact on other groups of television viewers besides deaf and hard-of-hearing viewers (King and LaSasso, 1992). Television viewers who are learning English as a second language are likely to find captions an excellent way to develop their English skills. Special education students, such as learning disabled students, are likely to find captions helpful. Once hearing people realize the potential benefits of captions, it can be expected that different lobby groups will be formed to lobby manufacturers and caption providers to have captions meet the needs of people other than deaf people. It will be important in the next few years to be sure that the decisions manufacturers and caption providers make are in the best interest of deaf people.

What kind of decisions will manufacturers be making that will impact on deaf caption consumers?

The Federal Communication Commission (FCC) has set technical standards for the new caption decoders, but manufacturers will have many options related to how to implement specific format features, including placement of captions, size of letters, use of upper-lower case of letters, and use of color. For example, the law requires that all decoders be able to generate a black box (background) around the captions, however, manufacturers will have the option of providing backgrounds besides the black box.

Instant Recall's Caption Master VCR, currently available, has a switch that viewers can use to eliminate the black box. Other manufacturers may use shadowed letters or letters with a black outline around the outside of the letters. Manufacturers are likely to use format features as a method of distinguishing their products from those of their competitors. For example, Zenith has a black lettering on a yellow background feature to represent italics. Zenith's letters are also larger than standard captions. Instant Recall offers the choice on their VCR to increase the size of captions by 15%. Thus, it is important that deaf people have early input into decisions made by television manufacturers and caption providers to ensure that captions meet the needs of the primary group for which they were developed.

What kind of decisions will caption providers be making that will impact on deaf caption consumers?

The Electronic Industry Association's new captioning standards require that it be possible to place captions anywhere on the screen instead of only at the top and bottom of the screen. Accordingly, caption providers, such as The Caption Center and the National Captioning Institute, will be making decisions about methods to (a) avoid on-screen titles (e.g., sports scores and the names of people on news programs or talk shows) and (b) identify speakers, represent non-verbal noises (e.g., music), and represent other aspects of the audio-visual picture (e.g., emotional tone). In addition, the new caption guidelines mandate the availability of seven different colors for captioning. Decisions will need to be made about how to use those colors.

The studies described in this article specifically address the need to get opinions of deaf viewers about current and future format features of captions. The two studies,

conducted between January, 1992 through June, 1993, were funded by the U.S. Office of Special Education and Rehabilitative Services. This article describes the method and results of the two studies and discusses their implications for NAD members.

Study #1

The purpose of this study was to determine which format features deaf and hard-of-hearing caption consumers prefer. Format features examined included (1) color or caption placement to indicate speaker identification, (2) location of captions (top, bottom, near mouth, or variable to avoid on-screen titles), (3) characteristics of captions including color, size, type of font (letters), (4) spacing of captions (mono versus proportional print) and (5) characteristics of the background box.

A video preference test was used in which deaf and hard-of-hearing people were asked to view pairs of 90-second television clips simultaneously on two television sets, and indicate which one they preferred. The length of each testing sessions was one hour during which subjects viewed 21 pairs of video clips.

Thirty-six testing sessions were held over a 6 day period at the SHHH, NAD and AGBell conferences during Summer, 1992. The size of the testing sessions ranged from 6-32 subjects who signed up at the conventions to participate in the study. Data from this study come from 234 caption consumers. From a questionnaire subjects completed, it was determined that 59% percent of the subjects were deaf, 31% were hard-of-hearing, and 9% were hearing. Sixty-two percent were female. The mean age of subjects was 50 years (range=13-80), and 73% had schooling beyond high school.

Video clips were prepared by The Caption Center at Station WGBH in Boston. Clips used in the study came from The Cosby Show, Murphy Brown, Murder, She Wrote,

and CBS Nightly News with Dan Rather, and NOVA: An Astronaut's View of Earth. In each pair of video clips, the picture and the wording of the captions were identical except for the format of the captions. For example, on one Cosby clip, the picture and wording of captions was the same on each television set, however, on one screen, color was used to indicate speaker identification and on the other screen was standard captioning. After viewing each clip, viewers were asked to indicate which one they preferred.

Results indicated that subjects tended to prefer captions that were centered at the bottom of the screen to indicate speaker, over captions placed left-center-right (depending where speaker was on screen), colored captions, or captions placed near the mouth. The order of preference for the color/nature of the background box was black (most preferred), blue, translucent, outlined background boxes, or drop shadow letters. Subjects preferred the font used in current Line 21 captions to character-generated monospaced or proportional fonts. Subjects preferred sans serif (tailored) letters to serif (more fancy) letters and preferred monospaced letters over proportional letters. The colors of letters subjects preferred, in order of preference, were yellow, white, green, and cyan.

Subjects in this study tended to prefer format features characteristic of the current Line 21 captioning in comparison to format features that will soon be possible on captioned television. Specifically, subjects in this study preferred the size, color and shape of Line 21 letters and the black background box as well as the placement of captions used in Line 21 captions. They tended to dislike captions placed near the mouth and captions placed in different places on the screen during the same clip. They did like moderate movement of captions to avoid covering on-screen titling. In an exit

questionnaire, subjects revealed that captions that were placed in different places on the screen, e.g., under the speaker's face took more time to locate than those at the bottom or top of the screen. They preferred captioned being placed predictably at the bottom of the screen.

There are a number of possible explanations for the data obtained in this study. First, subjects may have preferred format features similar to the current ones because of their familiarity. Conceivably, once caption consumers become accustomed to new format features, they will feel more comfortable with them and actually prefer them to current features. Another possible interpretation is that caption consumers may be resistant to change. A third interpretation relates the quality of the character-generated captions that were used. Clearly, more research is needed to determine which of these interpretations is correct.

Study #2

The purpose of this study was to determine caption consumer's views about format features of current and future television captioning. A questionnaire was developed to obtain viewers opinions regarding features including verbatim versus rewritten captions and format features e.g., size of captions, shape of fonts (letters), upper and lower case versus all capital letters, caption background, speaker identification, location of captions, sound effects, background noises and emotional information.

A short description of the need for deaf and hard-of-hearing caption consumers to be involved in studies related to captioning was placed in the SHHH Journal, NAD Broadcaster, and A.G. Bell's Newsounds during Fall, 1992. A form was included in each publication inviting readers to request a questionnaire about format features of captions.

Usable data was received from 867 caption consumers. Demographic data supplied by the respondents indicated that 45% percent of the people completing the questionnaire were deaf, 46% were hard-of-hearing, and 8% were hearing. Sixty-two percent were women. The mean age was 51 years, and 69% of the subjects had schooling beyond high school. Eighty-five percent reported needing captions to understand television. The mean number of hours of television watched per week was 19 hours and the mean number of hours of uncaptioned television watched per week was 7 hours. Sixty-three percent of the subjects have at least one old decoder (Sears TV, Telecaption I or II, and 51% have at least one new decoder (TeleCaption 3 or 4, VR100, Zenith TV, Instant Replay VCR).

Two types of questions were used in the questionnaire. There were 30 questions requiring a response of "agree," "disagree," or "no opinion/undecided." There was one open-ended question asking respondents what, if anything, they would change in current captions.

A variety of "agree-disagree" questions were asked to determine deaf and hard-of-hearing subjects' preferences for verbatim (word for word) captioning versus simplified language. Eighty-two percent of the subjects indicated a preference for verbatim captions, but 43% indicated they thought viewers should have a choice of verbatim or simple English. In terms of font (letter) size, shape, and case (upper or lower) and background box, subjects indicated preference for the current caption size and font, background box, and placement of captions, but they indicated a desire for choice of these features. In terms of possible format features to identify the speaker, 63% of the subjects said captions should not be near the mouth, but 53% indicated that captions should use the name of the speaker. Eighty-seven percent wanted captions to

indicate background noises, 66% thought background music should be indicated, and 45% wanted the emotional tone of the speaker identified. When asked what they thought priorities should be for user controls, 67% indicated font size, 48% indicated background box, and between 43-45% indicated font style, language level, and font case.

There were 635 responses to the open-ended question asking what, if anything, would they change about captioned television in the United States. Most responses could be grouped into four categories related to: (1) caption format (2) amount of captioning, or (3) accuracy/glitches of captions, or (4) obstructing on-screen titling.

Thirty-eight percent (n=242) of the responses indicated a desire to have more programs captioned. In terms of the types of programs respondents would like to have captioned, news/local programming was cited most often, followed by re-runs and old movies, cable and public television, day-time shows, and children's shows. Figure A contains a representative listing of comments regarding the need for additional captioning.

Insert Figure A About Here

Twenty-two percent (n=156) of the responses related to problems of faithfully representing the spoken word. Concerns related to spelling or grammar problems, missing captions, missing details, synchronization of captions, or verbatim versus condensed captioning. Comments representative of these concerns expressed can be found in Figure B.

Insert Figure B About Here

Sixteen percent (n=101) of the responses related to problems of obstructing the view of on-screen titling. Concerns related to obstructing the view of information at the bottom of the screen, e.g., the name of the speaker, sports information, or weather warnings. Examples of concerns are listed in Figure C.

Insert Figure C About Here

Fourteen percent (n=88) of caption consumers' concerns related to the format of captions. Most of the concerns related to characteristics of the font (size, color) or the background box (solid versus transparent). Others related to the position of the captions. Still others related to non-lingual problems, e.g, speaker identification, emotion of speaker, or background music. Examples of concerns about caption format are in Figure D.

Insert Figure D About Here

Data from this survey indicate that there are many old decoders in existence which will not accommodate many of the format features that became available in July, 1993. An educational campaign is needed to encourage deaf viewers with older decoders (e.g., Sears TV, TeleCaptioner I) to upgrade their equipment.

Data from the survey also provide clear direction for caption providers, television manufacturers, and researchers regarding the desires of deaf and hard-of-hearing

caption viewers. Judy Harkins at Gallaudet University is already investigating methods to caption non-speech information. The authors of this article are currently studying the effect of color to identify speaker identification. In addition, we have obtained federal funds to investigate the use of a graphic coding system to identify non-linguistic information such as speaker identification, sound effects, mood, and emotional tone.

Impact of the Results of these Studies.

Results of these two studies are expected to impact on (a) decisions made by manufacturers of decoder circuitry and captioning systems and caption providers concerning which format features to implement, (b) standards established for future captioning systems (in cooperation with the Electronic Industries Association Television Data Subcommittee and other organizations), and (c) recognition by the U.S. Department of Education and the captioning industry that research on caption features must be an ongoing and continuing effort if future captioning systems are to remain flexible and dynamic in the face of ever-changing technological capabilities. It is essential that the needs and desires of deaf and hard-of-hearing people continue to be of primary concern to television manufacturers and caption providers. Active involvement by deaf people and projects such as this one are important to ensure that the needs and desires of the first audience for captions--deaf and hard-of-hearing people--are never forgotten or given lesser importance than those of other groups of caption viewers.

Figure A
Examples of Deaf People's Comments
About the Need for Additional Captioning

- "Caption more of the "oldies" (pre-1970) so we can catch up on lost historical background that everyone else in society knows about. For example, people talk about 'Play it again, Sam', and I didn't know what it meant until 'Casablanca' was closed captioned."
- "Old sit-coms and re-runs should be captioned." "All children's shows need to be closed-captioned."
- "I would make it a law that everything on television be captioned."
- "It's very frustrating not to be able to understand live TV and weather reports - particularly since I live alone and rely on the TV to alert me to major weather conditions."
- "The lack of captioning on local and CNN news is deplorable."
- "Why aren't afternoon soap operas captioned?"
- "We need more local news programs with captions at earlier hours - 6:00-8:00 p.m. Real-Time captions are needed for emergency and important announcements, weather, and special reports."

Figure B
Examples of Deaf People's Comments About
Accuracy/Glitches of Captions

- "My deaf child often finds the spelling errors and garbled captions confusing."
- "Get better spellers. No more gobbledygook."
- "Leave 'written' verbatim alone just like 'oral' verbatim for hearing people - EQUAL ACCESS!!"
- "Please do not insult my intelligence or opportunity to expand my vocabulary by simplifying the language of captions."
- "Verbatim captioning except for children's programs that need editing for rate."
- "Eliminate lost captions and caption drop-outs at end of programs."
- "Slow down display of captions. I am considered a speed reader but even I can't always keep up with speed of captions."
- "Improve real-time captioning. I have not seen any improvement in 3 years."
- "Every spoken word and associated sounds should be captioned."
- "Much captioning appears to be speed writing in a foreign language that is completely unintelligible to me."

Figure C

Examples of Deaf People's Comments
Regarding Obstructing the View of On-Screen Titling

- "Placement of captions so as not to obscure graphics is long overdue."
- "News captioners have a difficult time keeping up with newscasters and their choice of words often is nonsensical and bears no relationship to what was actually said."
- "Better spelling of words and fewer words left out."
- "I'd put the captions outside the TV picture, so that the captions won't interfere with on-screen titling, such as the names of individuals in newscasts."
- "Don't cover up weather warnings or sports information, e.g, second down, two yards to go." "I get very frustrated when captions cover up the identification of a speaker on shows like 'Meet the Press.'"
- "Lipreading condensed captions makes me crazy."
- "Captions should be verbatim at all times, even for children's shows. This should greatly improve the deaf person's command of the English language."
- "Do not overlay open captions, i.e., football players' names, with closed captions. Either avoid closed captions if same as open captions or put closed captions elsewhere."

Figure D

Examples of Deaf People's Concerns
About Format Features of Captions

- "Captions need to indicate in detail who is speaking, emotion, background music, etc."
- "If the speaker says one word in a different tone, put the word in italics." "Use different colors for different speakers - I want equal access!"
- "We need better contrast between letters and background."
- "Use two-line format whenever possible. Three lines are more of a strain on the eyes."
- "Use clear box so less of the picture is covered," "Wider captions from one side of screen to other,"
- "Different size letters for different readers. Older people with vision problems need larger letters and more contrast with background. Choice, choice, choice for individual situations."
- "Yells, screams, higher tone, etc. should be in upper case captions. Others in upper and lower case."
- "Upper and lower case letters - start using them."
- "Move captions to the top of the screen." "Put captions near the mouth of speakers."
- "Use Helvetica or Futura fonts for quicker and easier reading."

National Association of the Deaf

CAPTIONED FILMS/VIDEOS PROGRAM

Captioning Preferences

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CAPTIONING PREFERENCES

by Carol J. LaSasso, and Cynthia M. King

Questionnaire Determines Deaf Caption TV Viewer's Opinions About Format Features of Current and Future Captioned Television

In January 1993, a short article describing the need for deaf and hard of hearing people to be involved in studies related to captioning appeared in *THE NAD BROADCASTER*. The article was similar to articles appearing in the *SHHH Journal*, and A.G. Bell's *Newsounds* at about the same time. A form was included in each publication inviting readers to request a questionnaire about format features of captions. Those who filled out that form were sent questionnaires. The questionnaire was designed to determine viewers' opinions regarding verbatim versus rewritten captions and format features such as the size of captions, shape of fonts (letters), upper and lower case versus all capital letters, caption background, speaker identification, location of captions, sound effects, background noises and emotional information.

Usable data was received from 867 caption consumers. Information provided by those who completed the questionnaires indicated that 45% were deaf, 46% were hard-of-hearing, and 8% were hearing. Sixty-two percent were women. The average age was 51 years, and 69% had schooling beyond high school. Eighty-five percent of those completing the questionnaires reported needing captions to understand television. The average number of hours of television watched per week was 19 hours and the mean number of hours of uncaptioned television watched per week was seven hours. Sixty-three percent of the subjects reported having at least one old decoder (Sears TV, Telecaption I or II), and 51% have at least one new decoder (TeleCaption 3 or 4, VR100, Zenith TV, Instant Replay VCR).

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- "Placement of captions so as not to obscure graphics is long overdue."
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- "Captions need to indicate in detail who is speaking, emotion, background music, etc."
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