

# Closed-Captioned Television: Educational and Sociological Implications for Hearing-Impaired Learners

*by Doris C. Caldwell*

*Doris C. Caldwell was Special Assistant to the President of the National Captioning Institute (NCI). Formerly Coordinator of Programming for the Hearing Impaired at PBS, she has been involved in the closed-captioning system since it was launched as a research-development project in 1973.*

*Before going to PBS, Ms. Caldwell was Research Associate and Materials Specialist at the Southern Regional Media Center for the Deaf, University of Tennessee, Knoxville. It was here that she first became involved in television captioning, and one of her research projects in that area was published in the America Annals of the Deaf (August 1973) under the heading "Use of Graded Captions with Instructional Television for Deaf Learners."*

*She received a M.S. in Special Education—Deaf and a B.S. in Elementary Education from the University of Tennessee.*

*Ms. Caldwell's present position covers a wide range of activities related to the expansion of closed-captioning services for the benefit of hearing-impaired persons.*

---

This paper was written in 1981. It was prepared for the Symposium on Research and Utilization of Educational Media for Teaching the Deaf.

*The National Captioning Institute (NCI) has achieved stunning success in its first year of operation. Hearing-impaired viewers of all ages are enthusiastically grateful for the opportunity to read what they cannot hear on television. The closed-captioning service continues to be expanded by further technological developments and program offerings.*

*Educators of the deaf recognize that well-written captions directly attack many of the communications problems faced by their students and pave the way to improved achievement in other academic disciplines. Captions on television programs enliven the classroom environment and extend effective learning into after-school hours.*

*Closed captioning represents a significant sociological breakthrough as well. Hearing-impaired viewers are now able to communicate more freely with their hearing peers as they share information and entertainment gleaned from the television screen.*

For a significant segment of the U.S. population, an exciting new experience now takes place regularly in their homes and classrooms. Thanks to the advent of closed-captioned television in March 1980, citizens of all ages who suffer impaired hearing can now watch many of the same popular TV programs at the same time and with the same understanding and full enjoyment as their hearing peers. This technological development is being

hailed with great enthusiasm by hearing-impaired Americans as “the greatest breakthrough since the first school for the deaf was founded in this country over 150 years ago.”

## UPDATE ON CLOSED CAPTIONING

The closed-captioning service offered through the National Captioning Institute (NCI) has experienced steady growth during its first year of operation—national programming up from 16 to 30 hours per week; more than 70 major advertisers (as of mid-February 1981) committed to having their specials and commercials captioned; syndicators, independent producers, and other broadcasters joining the bandwagon in increasing numbers; and closed-captioned videotapes for home entertainment beginning to appear in the marketplace.

Outpourings of delight and gratitude from hearing-impaired viewers continue to mount. This enthusiastic response has caught the attention of major service organizations and started them on special projects to increase public awareness of the innovative service and to proliferate its availability among those who need and want it but cannot afford to buy it. Lions and Quota clubs across the country, for example, are donating decoding devices to public libraries, special classes and schools, homes for the elderly, hospitals, deaf clubs, and needy individuals. A massive in-store demonstration program was conducted last December by volunteer USA Lions and RID interpreters in 758 large Sears stores nationwide; plans are underway for staging a repeat of that endeavor in the near future. Quota International has adopted a “Shatter Silence” program to increase the amount of closed-captioned programming in 1981. Discrete projects aimed at the same public awareness/availability objectives are being drawn up in cooperation with the Sertoma Clubs and the General Federation of Women’s Clubs.

The most dramatic technical development during NCI’s first operational year was the “live” captioning of sports spectaculars and important public events. Scoreboard information was transmitted live via the Line 21 (closed-captioning) system from the stadium to owners of decoding devices during the Sugar Bowl and Super Bowl games last January. The presidential inaugural ceremonies and subsequent addresses to the nation by President Reagan have also been successfully closed-captioned for hearing-impaired viewers.

The term “live” connotes that captions can be prepared from advance copies of the speeches and stored in computer memory to be called up for display on home TV screens in pace with the speaker’s actual delivery. The advent of “live” captioning is a major milestone in the long developmental history of the Line 21 system in that it marks the final step toward “real time” captioning of national newscasts, sports commentary, and public affairs events as they occur.

While the basic technology of the Line 21 system is sound and firmly entrenched, closed captioning to supplement the audio track of popular television programs is merely the beginning of innovative services to hearing-impaired audiences and others. New areas still under development include:

1. closed captions on film as well as videotape;
2. second-language captioning;
3. a full-screen “printed radio,” tentatively called “Infodata,” to provide non-program-related pages of information at the flip of a switch; and
4. compatibility with television broadcasting formats and equipment used in other countries.

Technical progress on all these fronts is unfolding rapidly.

The success of closed captioning and enthusiastic acclaim from hearing-impaired Americans have not gone unnoticed in other countries. All Canadian broadcasters have unanimously adopted the Line 21 system for immediate use while continuing their experiments with teletext (called "Telidon" in that country) and seeking to make the two systems compatible. Keen expressions of interest from around the world have prompted NCI to propose to other English-speaking nations the launching of an international exchange of closed-captioned programs and technical information during 1981—the International Year of Disabled Persons.

The Line 21 system is unique in that it was developed specifically for the benefit of a worthy and previously neglected segment of our society, yet satisfying no profit motive. Indeed, the service is all the more noteworthy in that it has been developed and introduced with little fanfare in a nation dominated by commercial television, which too often heretofore has been accused of crass commercialism. Closed captioning owes its creation to government funding, but its future is dependent and secure in the commercial world. The infrastructure has been set for a self-sustaining service. As the viewership steadily increases, so also will the closed-captioned television offerings expand in volume, variety, and value.

## EDUCATIONAL IMPLICATIONS

It is no secret to this audience that deaf youngsters typically function in a verbally impoverished environment. Reading is their prime tool for developing independence in learning, yet reading retardation and language deficiencies have long been positively identified as prime contributors to their existing cumulative deficit in academic achievement means. As schooling progresses and effective reading becomes increasingly a major source of educational input, it is reasonable to suspect that their meager level of vocabulary and information may be a result of the reading retardation rather than the cause of it. Any child who is a retarded reader is quite likely to reject reading in all disciplines and become increasingly less able to learn.

The typical deaf learner suffers not from lack of mental ability for reading but from insufficient opportunity to grow in reading. When all senses are functionally operative, the reading act conjures up visual images stored in the brain from previous experience. If, however, the aural sense is impaired, verbal information must be highly visualized to evoke information processing (learning). Deaf children, physically unable to rely on auditory input, must be visually bombarded with language if they are to overcome the handicap. Theirs is a trapped intelligence in serious need of educational help.

Accepting the very simple and sensible premise that children learn to read by reading, parents and educators instantly recognize the enormous educational value of closed captions accompanying a visually entertaining TV program, which the hearing-impaired child desperately wants to understand. Teachers and media specialists in schools for the deaf across the country have reported that their young students voluntarily and eagerly watch captioned TV shows (recorded on videotape cassettes) over and over again to absorb the words on the screen. Unconsciously but inevitably, these youngsters are also engaged in the complete act of reading with its many dimensions and functions. They are forced to read more but are now more eager to read. In the pleasant environment of television, improved reading and comprehension skills are extended beyond the mastery of content to enhanced language skills and refined thinking skills.

Adult deaf persons, too, have commented on noted increases in vocabulary as they jot down unfamiliar words while viewing captions and later look up those words in a dictionary. Since large numbers of hearing-impaired people of all ages depend upon reading to provide or supplement verbal information presented vocally, perhaps it is logical to assume that their skill in reading captions may be enhanced by the intensity of their desire to understand the content of a television series which has long titillated their interest and curiosity on the strength of its appeal to the visual sense alone. Indeed, well-constructed captions can be considered a

form of continuing education to improve communications skills for hearing-impaired persons of all ages. As one well-known educator of the deaf recently said, “It (closed-captioned TV) is like making castor oil taste good.”

Technology often reaches beyond the uses for which it was originally intended. The telephone, for example, was invented in an effort to develop a hearing aid; instead, it opened up communications for the world. Braille was originally intended for military use in the dark; instead, it expanded communications for the blind. Similarly, closed captioning—specifically developed for television viewers with impaired hearing—can be expected to extend its benefits to a myriad of learning disabilities. NCI’s research department is presently exploring, for example, avenues for determining the effectiveness of captions in reading and bilingual teaching disciplines.

## SOCIOLOGICAL IMPLICATIONS

Evidence is mounting that closed captioning is far more than a technological breakthrough. It is a sociological triumph as well. Hearing-impaired people of all ages are already enabled to communicate more freely with their hearing peers as they share information and entertainment gleaned from the television screen. Here, for example, are a few quotes from letters received at NCI and elsewhere after the closed captioning of the Presidential Inaugural ceremonies:

- “I was thrilled. I have never voted because I could not hear to understand what the candidates were promising. The more NCI close captions, the more I will become interested in politics.”
- “My (junior high school) class saw President Reagan’s speech with captions on it, and they like to read the captions. Please make more captions.”
- “Quite wonderful. It means so much to me to feel a part of the United States of America.”
- “I have seen every inauguration since John F. Kennedy, but this was the first one I really ‘took part in’ and I cannot explain the feeling of it all.”
- “There it was, closed captioning, like a message from heaven! Thank you so much.”

Letters from both educators and parents of hearing-impaired children also reveal positive psychosocial results of closed-captioned TV, e.g., “stirring emotions in my young deaf daughter which she had not exhibited before”; “They are very surprised at what is going on in this world and their immediate surroundings”; “My son . . . has discovered a new dimension in his world. This ability to share TV with his family has dramatically changed his personality and attitude and has greatly improved our family relationship.”

It appears that this new access to the pervasive world of TV through closed captions is exerting a powerful influence on the lives of hearing-impaired viewers and breaking down communications barriers which historically have inhibited their efforts to mingle fully in society’s mainstream. A long-awaited dream has become reality, and its positive impact is electrifying.

## BIBLIOGRAPHY

Ball, J. E. D. “The Visual Voice.” *The Lion*, 1980, 62, 6-9.

- Caldwell, D.C. "Use of Graded Captions with Instructional Television for Deaf Learners." *American Annals of the Deaf*, 1973, 118, 500-507.
- Caldwell, D.C. The Line 21 System: "Closed-Captioned Television for Hearing-Impaired Viewers." *Media Information Australia*, 1981, 19, 56-60.
- Cronin, B.J. Closed-Captioned Television: "Today and Tomorrow." *American Annals of the Deaf*, 1980, 125, 726-728.
- Davis, H., & Silverman S.R. (Eds.). *Hearing and Deafness* (4<sup>th</sup> ed.). New York: Holt, Rinehart and Winston, 1978.
- Gunnerson, V.F. "The Silent Screen." *Pacific Coaster*, December 1980, pp. 10-12.
- Hardy, R.E., & Cull, J.G. (Eds.). *Educational and Psychosocial Aspects of Deafness*. Springfield, Ill.: Charles C. Thomas, 1974.
- Jensema, C., & Fitzgerald, M. "Background and Initial Audience Characteristics of the Closed-Caption Television System." *American Annals of the Deaf*, 1981, 126, 32-36.
- Levine, E.S. *The Psychology of Deafness*. New York: Columbia University Press, 1960.
- Mindel, E.D., & Vernon, M. *They Grow in Silence*. Silver Spring, MD.: National Association of the Deaf, 1971.
- Myklebust, H.R. *The Psychology of Deafness* (2<sup>nd</sup> ed.). New York: Grune and Stratton, 1964.
- Shroyer, E.H., & Birch, J. "Captions and Reading Rates of Hearing-Impaired Students." *American Annals of the Deaf*, 1980, 125, 916-922.
- Smith, F. *Understanding Reading* (2<sup>nd</sup> ed.). New York: Holt, Rinehart and Winston, 1978.