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## Point of View/Article

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## POINT OF VIEW

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**ADAPTIVE TECHNOLOGY: THE KEY FOR TIME WARPING THE THIRD LARGEST NATION FROM 300 BC TO THE 21st CENTURY, Michael Tuceall, Florida School for the Deaf & Blind, St. Augustine, FL**

### Editor's Comment

This section provides a forum for exchange of reasoned ideas on all sides of issues in the area of deafness. The opinions expressed in this article, and others that appear in *Point of View*, are those of the authors and should not be considered the position of ADARA or the editors of JADARA. The editors welcome responses to the opinions expressed in this section.

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It is known that if deaf people were brought together in one place to form their own country, it would be the third largest nation on earth! That "nation," however, has barely begun to move out of the misconceptions and ignorance of Greece of 300 B.C. where statements by philosophers such as Aristotle influenced law, where the legal definition of deaf people made them second class citizens. A nation where deaf babies suffer the same fate as animal babies in that 96% of their hearing mothers are not capable of effectively communicating. A nation whose citizens suffer from a 75% unemployment rate and a 91% underemployment rate.

I am *persuaded* ... no, I am convinced that adaptive technology yet has to create an impact on this nation. Does this seem controversial? Yes, it does. I have never been known to retreat from issues ever since my mother convinced me that I

can be anything I wanted, no matter what doomsayers predicted of my future.

The impact of adaptive technology has yet to be realized. Yes, we have real-time captioning. Yes, we have hearing aids and cochlear implants and tactile devices. Yes, we have portable TTYs, signaling systems, captioning decoders, modems, fax machines, e-mail, the relay services and the mandated TV sets coming in 1994 with captioning chips built in. Yes, I am impressed by the real-time frequency shift hearing aid which enabled me to hear the high frequency "S" sound for the first time in my entire life. Yes, I am excited about computer software which enables a deaf child to do more in one hour of speech therapy than I accomplished in four years.

Do you know what most of this technology does to us? It makes the words of Helen Keller continue to be a self-fulfilling prophecy. She said being deaf was worse than being blind because while blind people were separated from things (this is no longer true today), deaf people are still separated from people.

Some deaf people are rightfully insisting *I am a victim*. From the deaf drug addict to the self-help deaf groups, the mantra is the same *I am not responsible; it's not my fault*. This is not an impulse to deny personal responsibility by stressing self-expression over self-control. Because of this, these deaf victims are expressing the conviction that the world is to meet their needs and desires. And deservingly so ... for the hearing world allowed this mess to occur through misconceptions, misinformation, and discrimination.

Why is this? Research, design, and marketing groups for adaptive technology groups have failed to create a horse to pull a cart. Hear me out.

Thousands of Americans have spinal injuries

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which give us a choice to institutionalize them for life (a young spinal paralyzed victim's lifetime caretaking cost at a conservative \$88 per day can translate to \$1,700,000 in 1993 dollars) or to design technology to enable them to use what motor control they have to operate computers, access information services, steer wheel chairs, use speech boards, etc. An initial investment in a \$12,000 system can translate into securing a job at \$20,000 per year for a lifetime earning of a very conservative \$600,000, not counting cost of living increases and merit pay raises, for an estimated \$170,000 contribution to society in various taxes.

I challenge marketing, research, and development groups to discover and explore and profit with honor from this hidden nation. Let me describe this nation and how adaptive technology can "time warp" it from the present 300 BC status into being an economic superpower of the 21st Century. We must face the isolation of deaf children in the home, and the wasting of their time in schools, where the education of a single deaf child can cost \$520,000 before college. College is presently out of reach for most due to the 60% illiteracy rate as documented by HEW in 1972. We need to have a horse to pull the cart that will be built!

The handicap of deafness is not in the hearing loss itself. When you are born deaf, life to you is normal, as if you've never heard, how can you miss speech sounds? Deafness is our way of life. However, let's take a closer look at Helen Keller's observation that deafness separates people from people.

It is absolutely and unequivocally necessary to provide language intervention at birth, otherwise it is all over by age three. It would appear that there is no way that any hearing-impaired child, identified at a later age can, even with the best of follow-up services, recover that from which they have been unnecessarily deprived. Even when hundreds of thousands of dollars are spent on ONE deaf child's education, deaf children fall

behind hearing children at an escalating rate each year. The average deaf child still progresses, at a rate of less than one month per year, in reading and language achievement.

However, there is hope. A 1987 study of 432 deaf children who had early language intervention showed an average receptive language performance increase of nearly 13 months. These children will be like myself ... able to read to learn and compete with children without disabilities; able to complete all legally mandated formal schooling without a cent in increased costs; able to campaign as a mayoral candidate; able to administer a Wisconsin school as a principal; able to contribute significantly to medical research, joining team discussions without utilizing an interpreter; able to complete Ph.D. studies. Families with deaf infants quickly pass the narrow window of opportunity to learn a language and become productive members of society. Dr. Ben Bloom stated that up to 50% of intelligence is determined before the age of four. A. H. Streng responded that unless language is begun as early as possible, the more difficult education is for both teacher and the child. Northern & Downs insists that sensory input deprivation during the first two years of life will result in a complete inability to perceive speech sounds.

In spite of all of our communication technology, the fact is that the most powerful communication method is still face to face. Mele Koneya and Alton Harbor, in their book *Louder Than Words ... Non Verbal Communication*, stated that only 7% of communication is in words. Thirty-eight percent is in intonation. This leaves 55% in non-verbal cues. Thus, most technology available to deaf people restrict us to only 7% of potential to communicate with other people.

When research and development improves upon present voice to print technology and makes available portable calculator-sized devices to allow deaf people to read in real time what is being said, I am sure that when business sees the enormous

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market of the third largest nation in the world, great advances will occur in providing real-time voice to print technology.

Can you imagine what it will be like to be with a group of people at lunch conversing about a multitude of topics? As people converse, they will often listen in on the conversations of others, and will feel free to jump in and out through the course of the lunch. Each person is able to keep up with what is going on at and contribute to the overall dynamics as he or she chooses.

I will be lucky enough to have an interpreter sitting at my table then. Her hungry expression will make me feel guilty enough to tell her to eat and not to interpret. If and when she does, perhaps she will say "They're talking about..." By that time, the talk will be about other things. I will have no control of what I want to hear. I will be receiving, as I have for my whole life, filtered information. Others will determine what is important for me to know or not. I long for and want to use this adaptive technology to alert me to who is talking about which topic, so I can jump in and contribute!

It is strange, but true, that most parents will fight to get an "appropriate education" for their deaf child, but will do nothing about ensuring that their deaf child understands all communication at home. Sure .. the child can be told to shut up or pick up his clothes. What about abstract ideas and feelings? Can the deaf child and parents sit down and talk about the nuts and bolts of everyday happenings?

This adaptive technology dream to liberate myself and my fellow deaf citizen will allow us to walk up to anyone, maintain eye contact which is so crucial to making a good first impression, and understand what is being said real-time via reading through high-tech voice to print technology. Unless I choose to disclose that I am deaf, the other person wouldn't know the same as many people have artificial limbs but are so adept with these technological marvels we wouldn't know

they are disabled unless we were told. We would then be able to get a job on our own merits, and not because of the ADA stipulations causing certain employers to feel they are doing us a favor.

I can already see other deaf people calling me a traitor to our cause. They may see me trying to destroy deaf culture by adopting some hearing culture values and norms. These people must face reality and see that the present day mess of unemployment and lack of communication at home being solved by the whole world learning sign language is sheer wishful thinking. If they don't want to take advantage of this pending technology, it is their choice and they will have to live with it. As for myself, I want to have the freedom to choose to use ASL with my deaf friends and English with my hearing friends. I do not want these militants to deny deaf infants of hearing parents an opportunity to reach their fullest potential in the 21st century.

The announcement of this adaptive device's development and production will spark a sharp increase in funding for early intervention simply because it will save school districts billions of dollars. My doctoral research shows reading comprehension to be the best predictor of future success. In order to use this "horse" (voice to print technology), the "cart" (producing deaf children who can read well via early intervention) will be made. By the 21st Century, the USA representation of this third largest nation on earth will finally be out of the Dark Ages. This device will be looked on as favorably as a \$12,000 investment to allow the young quadriplegic I mentioned earlier the chance to be competitively employed than to be a two million dollar drain on society.

I look forward to your rising to meeting this challenge to allow us Deaf people to forever remove that legal stigma of being labeled as an idiot all these centuries due to your own misconceptions on deafness.