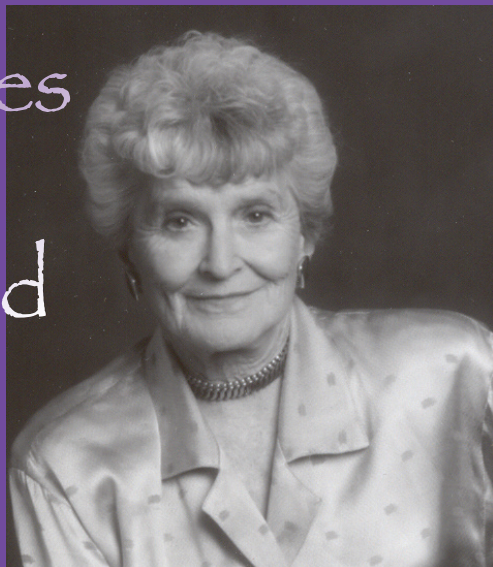


MEMORIES FROM A LIFE IN AUDIOLOGY

Sones
from
an
Old
Sound
Room



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Forward

In case you have forgotten your first sessions of Audiology 1, a Sone is a unit of loudness. It is a subjective judgment of a little piece of loudness snatched from some loudness-judging compartment in your brain.

Likewise, what you are going to read in this book is subjective pieces of recall from the remnants of an aging brain. Some of it may be useful; some of it may be pure drivel to you. But I offer it to you in honor of a profession that I hold in great respect — Audiology.



Preface

This little volume is being written for three groups of people:

Audiologists & Otolaryngologists

During my short professional life in Audiology, (some 60 years) I have developed friends in the field on whom I place great value. We have exchanged jokes, fun, professional information and personal understanding. Through my respect for them, their stature has become bigger than life, and I like to think that the same applies to their feelings for me. Many of them have indeed made me more than I really am, and for that, I am profoundly grateful. I am grateful for their tolerance of my foibles and weaknesses, which are many, and their real help in making my career productive.

There must be a mystique in professional relations like this, where people develop friendships that not only aggrandize each other, but also lift that profession to greater heights!

My family

Few people have an extended family that extends as far as mine, which now includes 46 people. I would like them to know a little more about the professional life that has occupied me during the years that perhaps I should have spent being a mother and grandmother and great-grand-mother. Their love for me has been a bulwark of strength, and I like to think they have kept me thinking Young! If they know anything at all, they know that I return their love.

Personal friends

I only have a few close friends, and they have enriched my life. One doesn't need many such friends-only a very few with whom one shares one's woes, one's dreams, one's joys. They too have been tolerant of all of my frailties, my imperfections, my inadequacies. But they too love me as I love them.

So it is with love that I am dedicating this volume to all those people who have shared my long life-and, with whom, God willing and the dikes hold, I will share a few more precious years!

MY LOVE AFFAIR WITH AUDIOLOGY

There is an old story about a girl who chummed around with a bunch of prostitutes, and was stunned when they revealed that they were getting paid to do what she was doing for fun!

That's how I feel about Audiology: If they hadn't paid me to do it, I would have done it for fun.

Every morning I looked forward to going to work just as one looks forward to opening a mystery story book.

I felt that every patient was a mystery waiting for me to solve — a challenge for my ingenuity, my cunning, my nose for sniffing out the answer. What gratification there was in going over to the otolaryngologists and saying: "I think we have a case here of otosclerosis — or serous otitis — let's do the acoustic tumor routine!" Of course, I wasn't always right — you can't win 'em all — but you can't lose 'em all either.



THE MIXED LANGUAGE PHENOMENON

My first language was German. When the first Great War came here I was forced to change to English. (Yes My Beloveds, there was another Great War before 1941, and our country got into it in 1918, after it had been going on for four years. It affected those of us third-generation Germans who thought we were Americans even while clinging to old customs. Alas, the frenzies of war hit us much as it did the Japanese in the second Great War. But that is another story.)

The fact of changing to another language at the age of four has always accounted, I feel, for my problem with understanding different accents.

An English accent play is gibberish to me until about the third act, when it is entirely too late to catch what is going on. I avoid them when I can. Also, my inability to understand deaf speech has been a great regret to me. The fast rendition of a one-liner loses me until I hear everyone else laughing. In the "Old Ears" study of Dr. Charles Berlin and Dr. Linda Hood I have had fairly good discrimination scores; but 40 years of giving Spondees and W-22's should certainly have sharpened my discrim!

The point is that I have seen quite a few people in for hearing tests because they were having trouble hearing in some circumstances, yet their hearing turned out to be perfectly normal. In such cases I always asked what their first language was. Often, they had spoken a language other than English. Of course, I didn't hesitate to tell them of my experiences with English as a second language, and it always seemed to relieve them of concern about their problem.

If I ever have a stroke, I wonder if I will revert to my first language? (Morbid thought!)



THE LINE LESS TAKEN

Many people have asked me how I decided to get into Audiology and had become centered on children's problems. They expect that I must have had a deaf child in my family, or that I had some sort of Epiphany. I am mortified to tell the true story:

After 15 years of being a housewife and raising three wonderful children to school age, I did have sort of an Epiphany: one day as I was finishing washing dishes (by hand in those days), I suddenly saw a Valedictorian in High School, a Phi Beta Kappa (Junior Year) in college, a Poetry-Reading contest winner, an editor and writer in various publications, and a 35 year old woman who would leave nothing in this world but with three children to whom I had given my best, but who no longer would be under my tender ministrations!

That morning the newspaper had announced registration at the University of Denver for Fall classes, noting that this would be entering college on the G. I. bill Congress has passed.

EUREKA!

I tossed off my Mother Hubbard and quickly put on something I thought might be appropriate, and dashed over to the University of Denver registration — fortunately only a mile away. I trotted into the field house, only to see thousands of people bobbing in endless lines waiting to register in different departments. My high enthusiasm nose-dived. There were the G.I.'s and it was wonderful for them - but not for my time frame. How to get into something that interested me: Pre-Law and Political Science, my undergraduate major? Psychology, my avid interest since hearing Watson speak at the University of Minnesota? English, a minor of mine? Speech or Drama, interests since doing theater work and debating? Oh — I know — I'll find the Shortest Line.

It was Speech Pathology and Audiology.

At the end of that short line was John Gaeth, one of the recent PhDs from Northwestern University, on his first teaching job. He was a great teacher and researcher who would develop the theory of Phonemic Regression. He persuaded me to enter the program — no, not persuaded — allowed me to enter before I knocked him over with fervor!

That's how I got into Audiology, Oh Best Beloveds, and from it please take a lesson: it doesn't matter what you decide to do, as long as you give it your total application and devotion.

*And I — I took the one less traveled by
And that has made all the Difference!*

—Robert Frost



ON MISTAKES

When supervising clinicians, I always told them: In your practice, if you haven't made any mistake that I haven't made in my life, I'll fall dead on the spot. All I ask is that you never try to cover up a mistake, and that you always report it honestly, and that YOU NEVER DO IT AGAIN!

Among my most egregious mistakes was the time I tested a man who turned up with a 45 dB air-bone gap, both for pure tones and speech. On the basis of that test, Dr. Vic Hildyard, who was head of Otolaryngology at that time, took the man to surgery to operate on him for a stapedectomy. As he started the surgery, he whispered something to the nurse, and the man heard what was said. Dr. Hildyard figured he was hearing too well for 45dB, and did a Rinne tuning fork test on him. It was positive: air conduction better than bone conduction, indicating better than 25dB hearing.

Fortunately for me, Dr. Hildyard terminated the surgery and sent the man down for another test. "This time," he said, "have him hand-hold the receiver loosely to his ear when you test bone conduction." That is what we did, and miraculously, his air conduction was normal!

So I learned two things: some peoples ear canals become occluded from the pressure of the head phones, and manifest reduced air conduction hearing. And — more important — always do tuning fork tests when you find a conductive loss, to be sure that you haven't been testing an occluded ear. As a matter of fact, I found it was a good thing to always do tuning fork tests, because if the docs did tuning fork tests and found something different from our audiogram... you'd be in trouble.

The days of tuning fork tests seem to be over. Who needs a Rinne test when one has immittance testing? Who needs a Weber or a Schwabach test when audiometers are so sophisticated they never make mistakes?

Well — almost never.

THE PHENOMENON OF "TYCOONITIS"

Early on at the University of Denver, when I was the only audiologist in the state (heavenly bliss!), many of the important business, political and medical men would come for hearing evaluations. They all came with the same complaint: they had a hard time hearing in important meetings, usually when sitting at a conference table — at the head, of course.

The large majority of these men had perfectly normal hearing, yet were showing real concern over their inability to hear. They were all in the category of "tycoons," so I gratuitously coined the term "Tycoonitis" to describe their condition.

"Tycoonitis" is defined by hearing normally, yet having a brain so cluttered up with garbage from that particular profession that they lose concentration for hearing what is going on. It is like a sensory overload of the grey cells: these Important Men have so much to think about and so many responsibilities that their thoughts seem to become garbled and prevent them from concentrating on the present situation.

Do women ever have Tycoonitis? I hope not. We are too level-headed, too perspicacious, too well organized, to become victims of such nonsense!



I WAS HARD ON AUDIOMETERS

Some time in the 1960's I found myself on the way to an ASHA meeting in New Orleans, carrying with me a small Rudmose High Frequency audiometer. With it we had planned to test young ASHA members to see if we could obtain calibration data for the instrument. We took off handily in a DC-9 and we had reached 200 feet when suddenly the pilot damped the engine and we started to descend rapidly. The crash was sudden and quixotic, and we hit electrical installation. Flames were licking around the plane, and from my front seat I ran to the door and tried to open it. As I was struggling with the handle, a stewardess came to the other door, opened it, and said, "Go out here." I did not stay to argue, but jumped out that door onto the slide and whizzed down it. Then I ran so fast that I must have been two blocks away before anyone else came out of the plane. (Fire and a full gas tank?!?) Fortunately, everyone evacuated safely and the plane never blew up. The audiometer came out a little smoke coated, but we found it had survived impact.

So I took the next plane to New Orleans and we did our survey.

In 1970 I found myself in Saigon carrying a Rudmose clinical audiometer and sound level meter. Our sponsor, the Minister of Education, took us one Sunday night to test the hearing of the Prime Minister. Afterward, the Minister dropped us off at our hotel. We left the instruments in his car, as he was to pick us up the next day. Unfortunately, on his way to pick us up, a motorcyclist threw a grenade covered with plastic explosive into the window of his car, and both the Minister and his driver were killed.

When I finally retrieved my instruments, the audiometer was a molten mass of metal the size of a football, and the sound level meter was just a scrap of metal. I didn't dwell on what would have happened had I been sitting next to the audiometer.

I have since allowed my audiometers to rest happily in the clinic.

ON WRITING A BOOK

It is rare to find a kindred professional spirit who understands you completely and whom you also understand. What fun it was to have that person, Jerry Northern, who proposed that we do a book together entitled *Hearing in Children*.

There were very few book conferences necessary: we both knew exactly what the other could write about, and merely compared notes from time to time. It was an implicit competition to see who finished first — resulting in the book's being completed in six months' time during 1972. I'm sure that was a record for collaboration on a book!

Like teaching, while writing a book one learns more than one had expected. I had found that when I taught audiology it was like an iceberg: only 1/8 was visible in the lectures but the other 7/8 had to be known in order to give substance to the lecture, and to prepare for any questions that might arise. Our book was like that: there was no way one could write about everything that was available, but you had to know it well to explain it for student readers.

Jerry was a great person to work with aside from the book: he kept me in stitches with his take on the contemporary scene, and kept me moving forward to meet all deadlines by cracking his whip. We were so pleased with the final product. It was an absolute labor of love.



A SKIRMISH IN THE BATTLE FOR EARLY DETECTION

It's amazing that so many of us knew, even in the 1950's, how important it was to identify and treat hearing losses just as early as possible. Doreen Pollack is really responsible for my conversion to that idea. She came to us from England, stopping at Columbia Hospital to work with Dr. Henk Huizing of Holland, and the two worked hard to find ways to identify hearing loss in young infants. At the University of Denver, from 1953 on, Doreen and I tried to fit hearing aids and give training to children in the first year of life.

But the idea was not a popular one; throughout the country it was accepted that two years was the youngest age one could start with hearing aids and training.

When in 1959 the philanthropist, Mr. Fox of Toronto, sponsored the first large international conference on hearing in children I was ecstatic — here finally was a platform for early identification. Professionals from throughout the world were invited — many from the U.S. Dr. Hallowell Davis chaired the event. I was early on the program, encouraging the development of programs for very young infants, “just as early as possible” — even at birth.

I was followed by the Father of Audiology, Ray Carhart, who immediately said, in no uncertain terms that, “no baby should be fitted with a hearing aid before the age of two. Before that time the neurons are unmyelinated, and it would harm them irrevocably to introduce loud sound into their auditory system.”

Well, I was devastated. If this were true, of course, it would be inappropriate to fit the babies with aids until they were two. But then, I thought, a lot of sounds in a normal baby's environment get up to 80 and 100db — does that hurt the normal baby's hearing?

The final guidelines were to be enunciated the next day by Dr. Davis. If he wrote into the guidelines that babies should not be aided until two years, it

would set us back 20 years, or longer. I sought him out that evening and asked him, “Do you really believe that the unmyelinated neurons can be harmed by loud sound?” Dr. Davis thought a while and then he said, “No, I'm really not sure that it's true.” “Then, I said, please don't put it in the guidelines — it might set back the whole identification program.”

The next day the guidelines came out — without the two year probation!

We had won the skirmish, but not the entire war.

THE PHENOMENON OF TRANSITION

One of my greatest pleasures was reassuring a worried mother that her baby could hear. This event happened most often with babies of three to four months, particularly if there were older siblings who created a noisy environment for the baby.

I theorize that there is a transition period between three and five months when the babies have been listening to so much *unmeaningful* noise that they are *unresponsive* to what we think they should be hearing. As a result, their mothers come in complaining that their babies don't seem to respond to any sounds. Over my 40 years of work I have perhaps seen hundreds of such incidents.

The solution is simple: put the infant in a sound room on the mother's lap, in total silence for about five minutes. Then introduce just 10sB of soft speech: “Hello, baby.” At that point, or within 5 or 10dB louder, the baby will turn his head if hearing is normal.

Poor kid — he's perhaps never known the luxury of complete silence, and just a little exposure to it activates his natural curiosity, which should be operating at that age.

He's been frozen in the transition period between being barraged with sounds that have no meaning and he is beginning to find meaning in them.

ON FEMINISM

Yes, I am a feminist to the core. Where does one get that yearning that says, as Queen Gertrude lamented in Updikes's clever prequel to Hamlet:

“When, tell, do I serve the person I carry within, the spirit that I cannot stop from hearing, that sought expression with my first bloody cry?”

I suppose that somewhere one must first have affirmation of one's importance in the scheme of things — from one's parents, of course. I was fortunate in having a father who supported and encouraged me in every intellectual activity I undertook, and in addition gave me the feeling of being loved and admired. I found common ground in a statement I once read by Freud. Let me paraphrase it as I recall it: “When one has been the sole object of devotion of an adoring mother, one can go through life without ever being hurt by any of life's arrows.”

Upon visiting some old family friends after both parents were gone, I heard from them the theme: “Ah yes, Marion, for your father you could do no wrong.”

One can be led astray by such devotion, of course, and make sure it doesn't result in blind arrogance. If it ever has, in me, I beg pardon if I hurt or offended anyone.

And so the feminist movement struck a responsive chord in me, coming from an age that demanded women should be bound to “Kuche, Kinder und Kirchen” — Kitchen, Children and Church — and implicit of course, was “Braut” — Husband.

Been there — done that.

WOMEN AND AUDIOLOGY

Where were the women when Clinical Audiology was gestating at Northwestern University in the latter 1940's? They were working very hard at rehabilitative audiology with both children and adults. The thought of a woman PhD in clinical audiology was anathema at that time. Of all the people who had been in the Hearing Rehabilitation services at DeShon Hospital, only the men went on to get their Ph.D.'s under Dr. Carhart at Northwestern. Any women who were trained in clinical audiology remained as technicians — the dial twisters.

This attitude was still extant in 1953. I had lucked out by being in the right place at the right time and headed the Audiology program at the University of Denver, where I inherited the Veterans' Administration contract for hearing testing (\$10/test) and Hearing Aid Evaluations (\$25/each). These were princely sums in those days, and highly valued. In order to protect their interests, the V.A. sent around monitors to make sure that their contractors were doing it RIGHT. Mine was Dr. Frank Lassman, who turned out to be one of the finest men and smartest audiologist I've known — but at that time appeared to be what we now call a Male Chauvinist. He told me that he totally disapproved of women going into audiology — that they could not be the scientists that men could be, and that if a woman earned a PhD she would price herself out of work.

I didn't argue with him. In those days one didn't think of fighting for women's rights. All I knew was that I must work harder and do better than a man if I were to hold down a job. (I like to think I did all of that!)

When Women's Liberation came along, I espoused it with a vengeance — such a vengeance that I refused to attend the ASHA convention in Georgia because Georgia was a holdout on the ERA. I did it despite the fact that at that meeting they were giving me the Honors of the Association. It was one of the hardest decisions of my lifetime, but I felt that I had to take a stand on an issue that I believed in strongly. Unfortunately, Women's Lib has been eroded in recent years — one of those pendulums that swung too far and are now swinging in the other direction. I think that if we just continue to do our best, stay steadfast for women's rights, and BELIEVE, Equal Rights will indeed become a reality.

THE SOUNDS THAT GREAT MINDS MAKE

The beginning of wisdom is knowing your own limitations. Next, of course, is knowing your strengths — but first we must know our limitations. I have always known that although I have a decent-enough Mind, it would never achieve Greatness. It would never think Great Thoughts; it would never produce break-through research; it would never write the Immortal Book. But there is a Law of Compensation somewhere in this relentless Universe, and my recompense was this:

I could recognize the Sounds that Great Minds make.

Listening to a speech, reading a book, scanning a research report, I could always spot an Authentic Voice. Conversely, I could spot a Phony a mile off. (Now, please don't anyone suggest that it takes one to know one! Oh, I guess that may be partially true: I have just enough of the Phony in me to know how they operate!)

The great advantage in being able to identify an Authentic Voice is that one can use that finding to base action on. Early on, I identified Great Sounds coming from people like Chomsky, Lenneberg, and from less known voices like Paula Menyuk and E. P. Edwards. These sounds were saying that infants and young children undergo decisive learning phases in their younger years, and if these stages are missed there will be permanent retarding of their language skills. No one at that time ventured to suggest that sensitive periods start at birth, but I willingly made that leap. Once that I believed that those sounds were authentic, it was no problem to do a reduction *ad absurdum*. And, it turned out, there was nothing absurd about it, as has been proven by the excellent research of Yoshinaga-Itano and others. Now, there was a Great Sound!

A fundamental tenet of my life has been: “Count that day lost that you do not find yourself out on a limb.”

RESEARCH FOR THE COMMON MAN

Not everyone is programmed to be a researcher — some of us have to make our contributions in other ways. If your forte is to be a clinician, as mine was, you can contribute by being a darn good observer. How do you think that the definitive study on the effect of kanamycin, neomycin, and ethocrynic acid in kidney transplant patients by Bergstrom and Thompson came into being? It was because we clinicians who had to fit hearing aids on the transplant patients began to wonder why one after the other with severe to profound hearing loss were turning up. (The University of Colorado did the first surviving kidney transplant patient.) So we did our own little study, cataloging the patients and doing tests to show the sensory nature of the losses. We presented our data to the physicians, and Bergstrom applied for a grant to investigate the effects of these antibiotics and other drugs. It was a great study, further buttressed by the obtaining of a temporal bone on one of the patients which showed almost a total hair cell loss — a pure sensory loss. We had made our contribution.

How did the Down Syndrome study that filled the whole first issue of *Seminars in Hearing* originate? In the same way: by observations of a series of Down patients who appeared with conductive hearing losses of uncertain origin. Some of them clearly had otitis media of long-term duration; others simply had no evident reason for the hearing loss. So we wrangled a grant and tested 100 Down Syndrome patients, including otologic examination of their ears under the microscope. Some Down Syndrome patients were brought to surgery with surprising results: what was thought originally to be otitis media was actually an acquired ossicular fixation. Again we had made a contribution.

Never stop asking questions. If you smell a “Why?” follow it up. Every anomalous condition has a solution.

'AH' VS "CCC-AUDIOLOGY

When ASHA first began to certify audiologists there was no staggering written exam to struggle through; instead, one was confronted with all the Great Ones of the profession who hurled oral questions at you. During the first two years these orals were conducted by a large group of these Invincible ones — twelve in number, as I recall, and when I faced them at the end of a long table I felt that these indeed were the Twelve Apostles about to wreak judgment on me. After all, I was only a woman, and hadn't I been told that women have no place in audiology?

I don't remember all their names, but there was, of course, Dr. Raymond Carhart, Dr. Frank Lassman, Dr. Moe Bergman, a Dr. Norton Canfield (an otolaryngologist who had headed the War-time hearing program), Dr. Richard Silverman. These were the Eminent Fathers of Audiology, whose words were infallible and who made the ground tremble when they spoke. They proceeded to grill me on my knowledge of Audiology, and I did fairly well until they asked me to list and describe the psychophysical methods of reaching threshold. I did all right on the Method of Constant Limits, but then I hit the Glass Wall. No matter that I was teaching these things in my classes at D.U.; when you hit a block there's nothing to do but admit it, which I did. Fortunately, the Great Ones thought I had displayed adequate erudition, so let me off gracefully.

Later, when Dr. Lassman told me I had passed my advanced hearing certification exam, he said that the group agreed that it might have been a bit intimidating to face up to all those Greats, and discounted my block.

I don't know whether there were other women who went up against that Inquisition: I don't recall any. But the next year ASHA decided to have just two people interrogate each candidate, as the applicant numbers were increasing rapidly - and, *mirabile dictum*, I was asked to be on one of the examination teams.

I hated that. The first time I had to sit on anyone's examination we had a very fine audiologist whose reputation I knew and admired. Old Meanie Me, I asked him to describe the Sound Pressure Level of normal hearing thresholds

and how the measure was obtained, and he had to ask what SPL meant, having no idea of how it related to audiometric threshold. We had to flunk him, reluctantly; an audiologist must understand SPL and threshold. I felt terrible. Fortunately, that audiologist passed next year, and went on to a distinguished career.

Luckily, after a couple of years ASHA went on to devise written exams that entitled one to the Certificate of Clinical Competence, and I was Grandfathered in with my arduously acquired AH (Advanced Hearing certification).

I would never have been able to pass those written exams!



HOW THINGS HAPPEN - THE BIRTH OF THE JOINT COMMISSION ON INFANT HEARING

It was 1962, and the time was ripe to see whether early identification of hearing loss could be accomplished at birth. I knew that babies respond to sound in different ways, but what kind of a sound would be suitable to identify hearing losses in babies? Pure tones were not effective, I knew, but, perhaps a narrow band at a high frequency would not only give an arousal response but would determine whether a high frequency loss was present. Arbitrarily I selected 3000Hz as the best signal, at an intensity of 90dBHL.

Fortunately, a hearing aid company by the name of Vicon had located in Colorado Springs with a brilliant electronics man, Dr. John Victoreen at the head. I brought the idea to him of developing an instrument for screening children at birth, and suggested the specifications that I had dreamed up. He was immediately interested, and before I knew it I had a prototype model, the "Apriton" in my hands. (Named after the "Auro-palpebral Reflex" or APR.)

A psychologist with a fine record of research, Graham Sterritt, volunteered to work with me on a project to see whether or not two people could see the same response in an infant when the signal was presented. He felt that before we started on any program, we should know whether or not the observations of the infants' responses were reliable, i.e., could be repeated. So we enlisted the Junior League of Denver, who cooperated in a program of trying out the procedure. The result of the testing was favorable, and we reported in the *Journal of Auditory Research* that indeed, two people could independently see the same response to the signal.

On the basis of that research, we started a city-wide program in Denver, screening 17,000 babies, using trained Junior League members. Seventeen babies were found with hearing losses, as we reported in the *Archives of Otolaryngology*. We could not report the number of babies with hearing loss who were missed, of course, but there must of been many, as the 90dB signal was loud enough to arouse any child with a moderate or severe hearing loss.

Our report brought a clamor from the scientific community, who (rightly) protested that the observations, even by trained observers, were subjective and could not be relied on. They also objected to the signal of 90dB, which would arouse a child with an 80dB loss. So we stopped the program. And, feeling that we must continue to find a way to screen for hearing, I requested that a Joint Committee on Infant Hearing be formed by ASHA.

In 1969 the newly formed Joint Committee, composed of representatives from ASHA, the Academy of Pediatrics, and the Academy of Otolaryngology, met and, while censuring subjective observations, suggested that a High Risk Register be developed, and that those babies on the Register be tested by audiologists in sound rooms.

The High Risk Register was adopted and changed many times by an expanded Joint Committee. It was widely used in every hospital that had an audiologist, for many years. In the late 70's we at the University of Colorado Hospital were fortunate to adopt a program sponsored by the Telephone Pioneers of America, who had supported the development of an Automated ABR instrument. Although an early detection of the AABR, it worked, and the trained Telephone Pioneers did an excellent job of screening babies. In addition, we continue to use the High Risk Register.

I credit the Joint Committee for saving us from the kind of program that England and many other countries in Europe espoused: the observation of babies' responses to noisemakers. In 1980, the Joint Committee, while continuing the Register, recommended the investigation of ABR in screening. From then on, Automated ABR soon became the method of choice for us and for many other hospitals.

Of course, it was the report by Dr. Christine Yoshinaga-Itano that finally convinced the medical community to adopt universal screening. And at the same time neurologists were confirming that the early plasticity of the infants' brains required early stimulation, so everything fell into place.

To quote Ghandi:
First they ignored me;
Then they laughed at me
Then they fought me;

AND THEN WE WON!

BEFORE LIFE AT 90 - IF YOU LIVE TO BE 90

Never let yourself fall into the trap of feeling that you're getting old. The new statistics are showing that if we continue to exercise both mind and body, there need be no very significant decline in either our mental or physical processes. Of course, you have to enlist all the medical sciences at our disposal to keep the old bod' going at optimal.

We've learned so much during our professional lives. Don't let that go to waste! Perhaps with all your experiences, you will find some novel idea that can be put to use. So NEVER GIVE UP!

There are some lovely passages in Tennyson's "Ulysses" that can inspire us.

"And this gray spirit yearning in desire
To follow knowledge like a sinking star,
Beyond the utmost bound of human thought."

"Old age hath yet his honor and his toil.
Death closes all; but be something ere the end,
Some work of noble note, may yet be done,
Not unbecoming men that strove with gods."

"Though much is taken, much abides; and though
We are not now that strength which in old days
Moved earth and heaven, that which we are, we are,
One equal temper of heroic hearts,
Made weak by time and fate, but strong in will
To strive, to seek, to find, and not to yield."

"To strive, to seek, to find, AND NOT TO YIELD." Take it to heart!

LIFE AT 90

I wake up after seven hours of sleep interrupted by infrequent bathroom visits (helped by surgical bladder repair), breathe in my inhalants for my COPD (Chronic Obstructive Pulmonary Disease otherwise known as Smoker's lungs, though I quit 40 years ago), loosen up my hip bursitis, put in my partial (nicely anchored to my tooth implants), put on my reading glasses over my 20-20 vision (thanks to surgically implanted plastic lenses), put drops into my drying eyes, do a quick head maneuver (to eliminate dizziness associate with Benign Paroxysmal Postural Vertigo), stick my hearing aids into my ears, take my high blood pressure pills and my Premarin, then my Vioxx for all my arthritic joints, do my Theraband therapy for my torn shoulder ligaments, place a band-aid on another bloody scuff o my sun-fragile skin, take my Dilantin to protect my brain after that benign brain tumor surgery, do my stretchies, lift my weights, look at the Obit Column, and if I'm not there, breathe a thankful prayer to modern medicine and go out and play tennis. If it's winter, I'll head to the ski slopes — the bunny runs, of course. I go slowly.



That's what it's all about: how to deal with all the ailments of Old Age, forget about them, and "Get a Life!" Not only that — get a life that's dashing, exuberant, a little crazy, but one that becomes a model for all those 65 year olds who think that the Fun Life ends at 65.



CODA

The woods are lovely and dark and deep.

But I have promises to keep,

And miles to go before I sleep.

And miles to go before I sleep.

Robert Frost