

THE MOVING POWER OF SPOKEN LANGUAGE

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Take a look at the page of print in front of you. Look again in five minutes. It won't have changed. All being well, this copy of *RESPONAUT* will be around to be consulted 1000 years from now. Records of writing go back over 5,000 years, after all. Writing is stable, static. And because of this, people feel it to be authoritative—the best standard by which to judge a language.

Speech, by contrast, has always had the reputation of a poor relation. People often blame speech for not living up to the standards of writing. 'How sloppy to drop the *t* in *often*', they say, 'when it is there in the spelling'. 'How slovenly to say *gonna*, instead of *going to*—it's written as two words, after all'.

Poor old speech! So many people want to control it, condemn it, reshape it in the image of writing. There's no justice. For speech came first. Man has been capable of speech for at least 20,000 years. All natural languages exist in a spoken form before they come to be written down. And children learn to speak long before they learn to write.

But speech steadfastly refuses to be subjugated. It will *not* be controlled by grammars, dictionaries, or guides to usage. It moves too fast for grammarians and lexicographers to keep up. Imagine, if *you* had to compile a new dictionary of spoken English, and had at your disposal an inexhaustible team of researchers. You send them out into the English-speaking world with their tape-recorders for a month. They record everything. When they return, you begin to write it down, file it, and ultimately print it. But it will take you a decade or more—by which time, old words have died, and new words have been invented, not in your collection. You lose. The dictionary-writer always loses.

In fact, the scientific study of speech has developed but recently. The tape-recorder wasn't invented until the 1940s; and without a tape-recorder, how can you capture speech on the wing? People speak too quickly, in everyday conversation, for it to be written down with accuracy. Most conversation moves at a rate of 250 to 300 syllables a minute—about 5 syllables a second. 5,000 words an hour is not at all uncommon. In a day, many people have to handle upwards of 100,000 words, when they speak and listen.

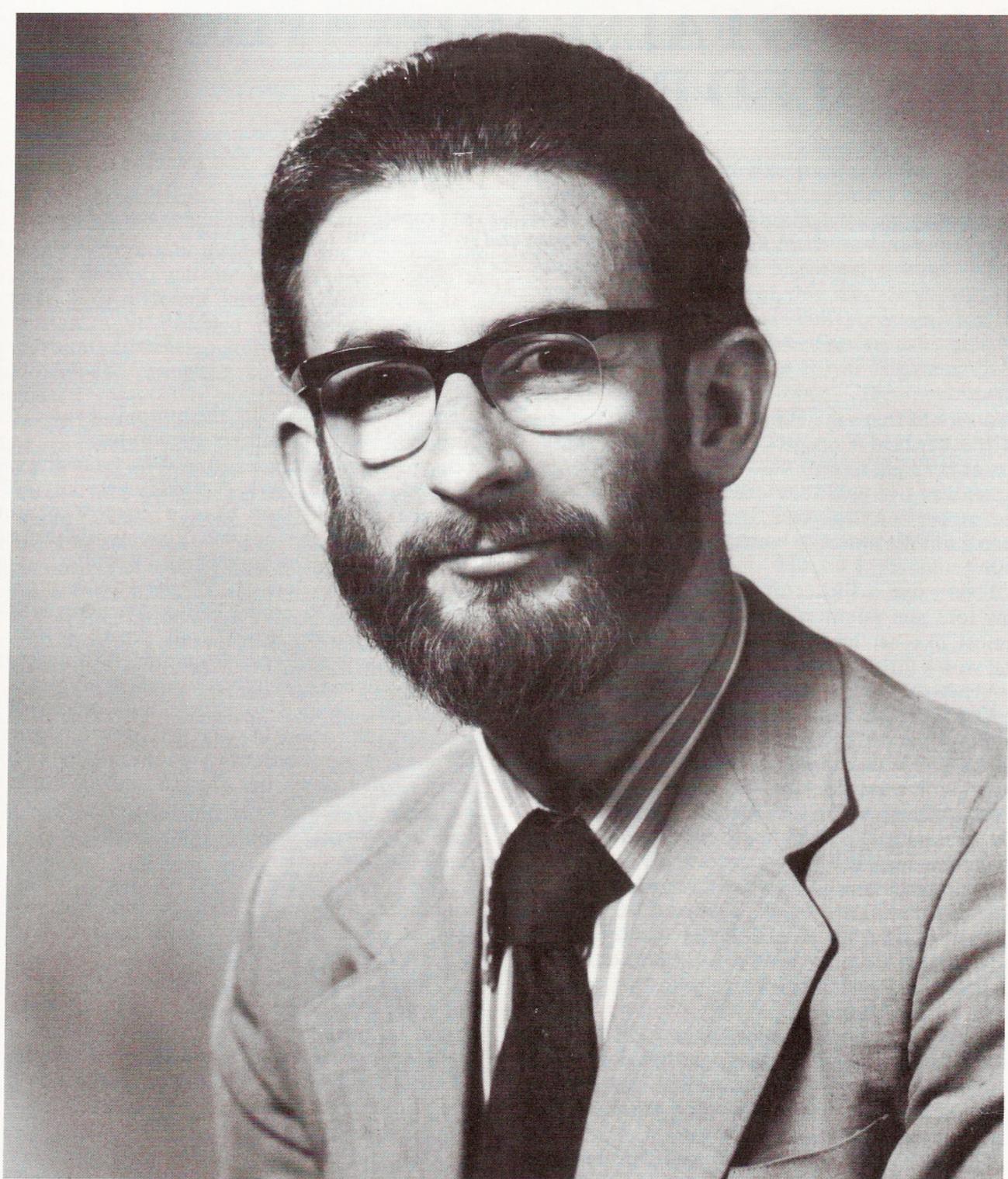
Instrumentation for the detailed analysis of how we speak and hear is also the product of recent invention—machines such as the *spectrograph*, which analyses the acoustic properties of speech, or the *laryngograph*, which plots the output of

the vocal cords. Now *there's* movement for you! The vocal cords are two bands of muscular tissue lying across the windpipe, just behind the Adam's apple. Air from our lungs makes them vibrate rapidly, and it is this vibration which generates the sound of speech. You can feel the vibration if you place your forefinger and thumb firmly on either side of the Adam's apple and say *zzz* loudly. For men, the vocal cords vibrate on average about 120 times a second—which corresponds to a note on the piano about an octave below middle C. For women, the average is just less than an octave higher, about 220 times a second. The higher the pitch of your voice, the more vibrations there will be. A new-born baby's cry averages 400 vibrations a second. The cries of brain-damaged infants often exceed 1,000 vibrations a second.

But the ear can do better than this. A young adult can hear vibrations, carried by tiny changes in air pressure, occurring with a frequency of 15,000 to 20,000 times a second—very high-pitched sounds. Our ability to hear these high frequencies deteriorates with age, but most adults can still hear frequencies of up to about 10,000 vibrations a second. The lowest frequencies which we hear as continuous sounds are around 30 vibrations a second. The sound waves of speech all fall within this range of 30 to 10,000.

So, speech is moving all the time—in our vocal organs, in our ears, in the society around us. Our brains cope effortlessly with all the programming, decoding, synthesising and interpreting which has to be done. It is the enormity of the ability which is so humbling, to those who study it. And it is this same enormity which makes the task of therapy so daunting, when a person's ability to speak and understand language breaks down.

Handicaps of spoken language affect about 20 per cent of the population, it is thought. They range from the mildest of handicaps, where communication is hardly affected, to the total loss of all communicative ability. Severe physical handicap can play havoc with spoken language skills, so much so that a great deal of thought is these days being given to devising alternative methods of communication, using charts of pictorial symbols, and the like. Mental retardation likewise. There are 30,000 new stroke victims each year, and over a third of these will have major problems of spoken language, due to damage to the speech or comprehension centres of their brain. Hearing-loss affects a million. One in a 1000 children is born with a cleft palate. Two per cent of all school-



children have such severe spoken language problems that they are in need of speech therapy. I could go on and on, piling up statistics.

The task of starting the language-handicapped child moving is a massive one, as is the task of starting the language-handicapped adult moving again. The speech therapist and remedial language teacher are the professionals at the centre of the problem, and a more awesome task is difficult to find. But of all the children and adults who will need special help in 1984, only a tiny minority will obtain the help they need. There are only about 4000 speech therapists, and only a few

hundred special language teachers, in this country. Most speech-handicapped children are lucky if they get half-an-hour's therapy *a week!* The remedial language professions desperately need more personnel and resources to cope—but in the year of Big Brother (or perhaps it should be Big Sister!), the tale being told is the dispiriting one of cutbacks everywhere.

It is a crying shame, which only public opinion can put right. And what better way to celebrate the gift of language than to speak out on behalf of those who have to suffer the solitude of a silent, static world, where words do not move?