15. Pre 1981 Electronic Assistive Technology

Assistive Technology unifies humanity. It's something we have always used for both good and evil. Perhaps it started with the earliest humans finding a good strong stick to help them cross rough terrain. Perhaps in sharpening a big rock to bash a rival's brain in with. Good or bad, sharing, and refining knowledge got us to where we are today.

Handicapped, Invalid, Disabled, Person with Disabilities. Words are important. Where I use the term "disabled person" it is in the context of them being disabled by a barrier in their environment or society. The joy in Electronic Assistive Technology (EAT or AT for short) is that is seeks to remove these barriers. The aim: to boost independence giving better access to a fairer world.

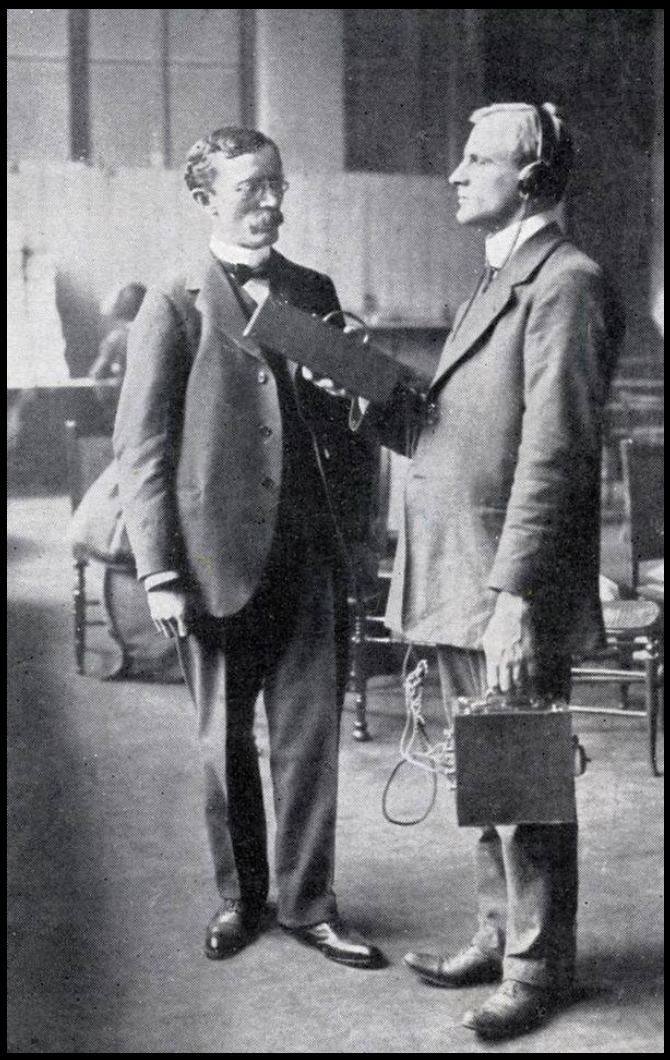
The following pages detail a lucky dip timeline of some Electronic Assistive Technology up until 1981: The United Nation's International Year of the Disabled. As a disclaimer, wherever I claim something is the first, that only means the first that I'm aware of. I could be wrong. I could be right. My apologies to all the under recognised inventors of the world.

1898: Following the ear trumpet and acoustic chair (!) came the first portable electronic hearing aid, the Aukophone. Inventor Miller Reese Hutchison would later go on to create the first electric car horn in 1908.

Pictured above from 1933 shows two dapper chaps on a train using their new-fangled "radio ears for the deaf". Possibly a pair of spivs up to no good.

1912: The Exploring Optophone. Invented by Dr. Edmund Edward Fournier D'Albe at the University of Birmingham in the UK. This handheld pointing device translated light to a graduated humming in a set of headphones, enabling the blind to hear the difference between light and darkness.

As written in his brilliant 1924 book The Moon-Element: “The blind are enabled to locate lamps in windows and other high lights and to trace the outlines of large, well defined-objects. The instrument makes the moonlight distinctly audible and sunlight a roaring noise”.



“I can hear the light”. The Travelling Optophone demonstrated at the 1912 Optical Convention of the United Kingdom at the Science Museum, London. Pictured above left, a blind man, listens to the sun. Pictured right, listening to a burning match held by Mr. Arthur Burrows (later to be the first person to read the news for the BBC). Fournier D’Albe is seen in both pictures wearing a bow-tie and serious expression.

Released to great acclaim and fascination, Edmund was brought crashingly down to Earth upon receiving a letter from blind solicitor Sir Washington Ranger: “The blind problem is not to find lights or windows, but how to earn your living.”, he wrote. The romance of hearing the sunrise was not enough.

This wake-up call galvanised Fournier D'Albe into developing his invention further. In 1913 he unveiled a Text Reading Optophone prototype. By 1914, two months before the Great War, Fournier D'Albe had a machine that could enable users to read from books and newspapers. At a time when only one in ten thousand books were translated to braille, the Optophone made them all possible to read.

In use, a book would be placed on a glass plate. The operator would use a handle to manually trace across each letter. Letters were scanned as a pillar of 8 divisions expressed as musical tones through a telephone headset. A full stop would sound a single low note. The letter I, a chord, like one blown on a mouth-organ. The diagonally shaped letter, V a descending and rising tune. A sound alphabet said to be similar in effort to learn as Morse Code.

Although the average speed of blind readers was typically under 5 words per minute, one or two experts could manage up to 60. Such a person was Mary Jameson seen above in 1921 who helped refine the Optaphone's usability and greatly boosted its reputation through numerous public demonstrations.

These typically consisted of a user reading from randomly selected text from impressively large books such as the Bible and Dante's Inferno. In July 1920, a demonstration was given to the King and Queen "who listened to the melody provided by a chapter of the Bible being passed over by the instrument". Earlier that year a group of academics heard Mary read aloud "Will Women Want to Vote? Wait and See."

1919: The RNIB (Royal National Institute for the Blind) starts research into creating talking books for the blind. “Thousands of soldiers lost their sight on the First World War battlefields. They returned to Britain no longer able to read and not all of them had been able to learn braille. Some found the language too difficult, while others had injured their hands making it impossible to read with their fingers. Without state compensation, it was up to RNIB to find another way for them to read books.” - From the RNIB’s “How Talking Books Were Born”.

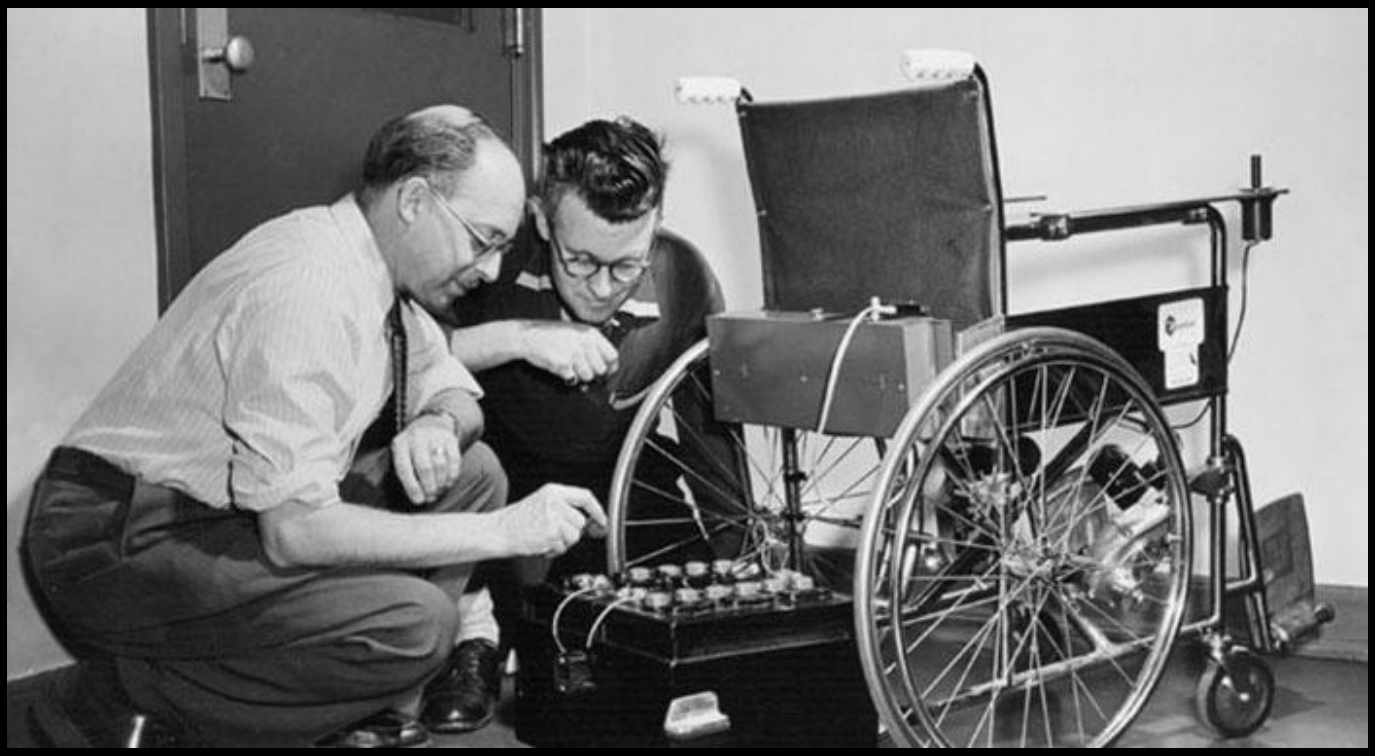
1928: Radio On: The American Foundation for the Blind distributes radios to help blind people gain easier access to news and entertainment. In 1928 you may have been listening to Ravel’s Bolero, Bertolt Brecht’s Mack the Knife and I Scream, You Scream, We all Scream for Ice Cream.

1934: “Books for the Adult Blind Project” is launched in America pre-empting the RNIB by a year. The first talking books in the USA included excerpts from the Bible, contributions from deaf-blind activist Helen Keller and a short story with a twist by O. Henry. In 1935 the RNIB released their format of 24 rpm 12” records. These included part of the Bible, an Agatha Christie murder mystery and a Joseph Conrad yarn, Typhoon, pitting man and machine against the fury of the seas.

Much of Typhoon is set in pitch blackness towards the eye of a terrifying storm. Many passages dealing with individual fear and courage battling against the odds must have struck a vibrant chord with the intended audience.

1949: The Garod Telezoom. A one button TV remote that toggled between a standard or zoomed in view. The Pittsburgh Post Gazette painted the benefits of this innovation as including being able to admire attractive women in more detail.

1950: Electric wheelchairs. George J Klein (pictured below left) developed the first practical electric wheelchair for veterans of World War II at the National Research Council of Canada labs in Ottawa. “It was wonderful to have been at the lab because it was fun. Serious fun.”



1952: “Man’s Breath Runs Typewriter. [Armenian American Emik Avakian] uses a complex code, four microphones and electronic impulses to type without hands”. Profiled in the 1st of December 1952 LIFE magazine, Emik’s story as an ingenious man with Cerebral Palsy was syndicated across the USA and beyond. Alongside the adapted typewriter a range of his other inventions were showcased. This included a a system of knee and foot operated buttons used to operate a tape recorder, radio, TV, electric razor, and lights.

TYPING WITHOUT HANDS

Sirs:

I was delighted to read your story, "Man's Breath Runs Typewriter" (LIFE, Dec. 1).

Two months ago Emik invited me to be the first cerebral palsy victim besides himself to operate his typewriter. My physical limitations are quite similar to his.

At first glance the weird assortment of tubes, wires and boxes led me to believe that Emik's invention would be very hard to operate. To my amazement within 20 minutes I was typing without error. Since I have good control of my feet, I discovered that the push-button method was easier for me than the microphone system. I experienced a real feeling of independence.

GIL S. JOEL

Mount Vernon, N.Y.

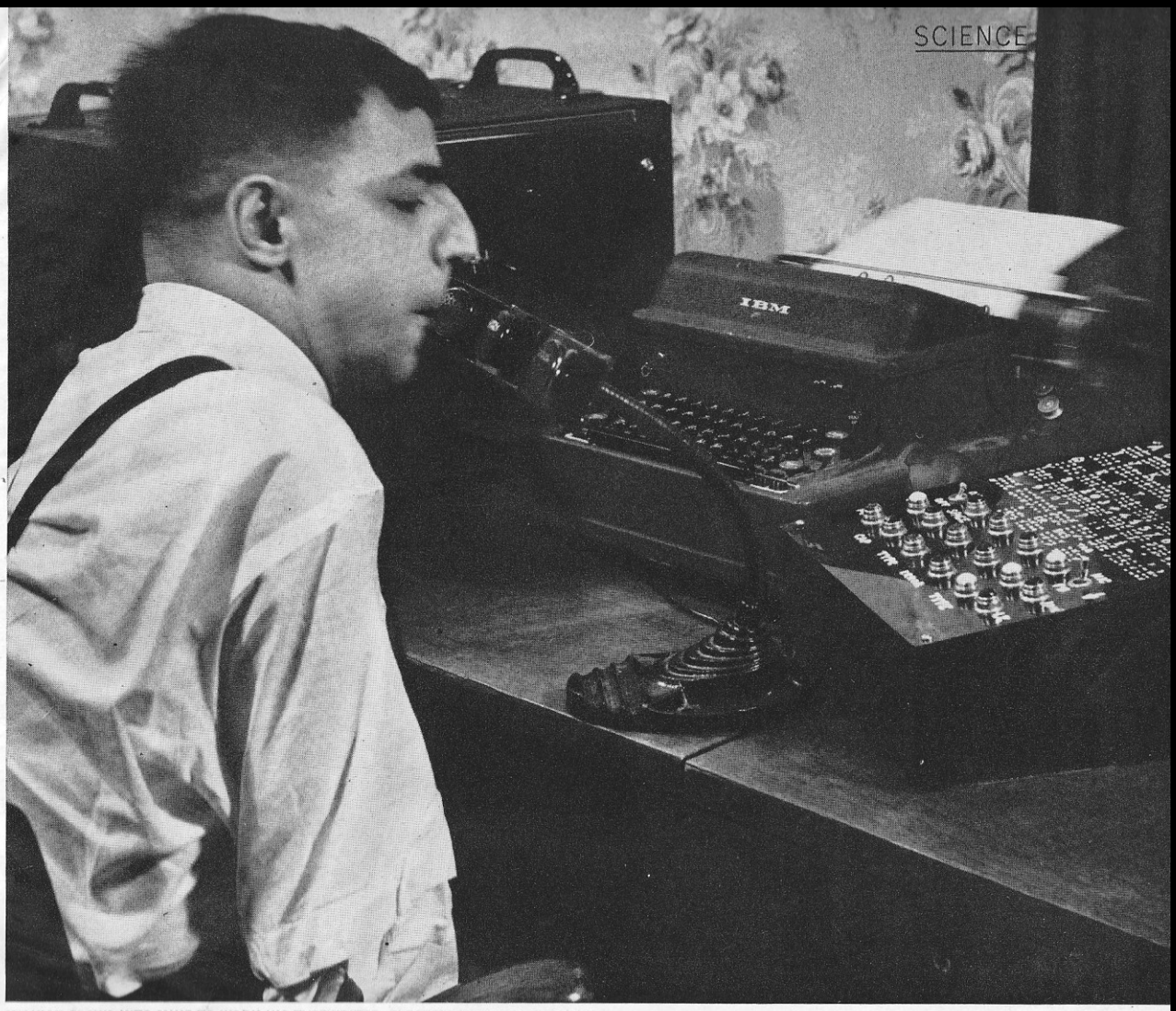
Sirs:

During 1949 I contracted polio and spent eight months in a hospital. Emik Avakian was in the same ward with me. His daily words of encouragement helped me orient myself both physically and psychologically.

Emik had already perfected a typewriter idea in his mind. I helped him put some of his notes on paper by typing while he dictated and other patients also assisted.

WILLIAM E. TALLON

Glens Falls, N.Y.



AVAKIAN BLOWS INTO MIKE TO WORK HIS TYPEWRITER. ELECTRIC IMPULSES FROM MIKE GO THROUGH CONTROL BOX (RIGHT) AND ELECTRONIC BRAIN (LEFT)

MAN'S BREATH RUNS TYPEWRITER

Palsied inventor uses a complex code, four microphones and electronic impulses to type without hands

Emik Avakian, a 28-year-old suburbanite New Yorker, is an M.A. from Columbia, electronics consultant for International Business Machines Corp. and an inventor. But he is also a victim of cerebral palsy and thus his remarkably active brain has at its command only halting speech, and almost useless arms and legs. In going through school Avakian had to rely on dictating to typists who could barely understand him to put his thoughts on paper. Now he has perfected a typewriter (*above*) which he can operate by sound of his breath blown into four microphones. It is slow but it is more accurate and much cheaper than hiring typists.

Avakian's typing machine utilizes an I.B.M. electric typewriter, to which is attached an ingenious junior-size electronic brain. Avakian uses a code (diagram at right) based on blowing four times into one or more of the mikes. The sequence in which Avakian blows is translated by the brain into a letter which the typewriter then prints. A director of the Cerebral Palsy Foundation thinks the machine would have great value to the seriously paralyzed or disabled, and Avakian estimates it could be marketed for about $550. Avakian now thinks that if he can teach himself to make two different brain waves at will, he could use the electrical impulses these waves produce to run his typewriter with lightning speed.

a 3344	A 3341	k 2322	K 2321	u 2344	U 2341	6 2134	¿ 2131
b 2422	B 2421	l 4344	L 4341	v 3422	V 3421	7 3134	& 3131
c 2232	C 2231	m 2122	M 2121	w 4122	W 4121	8 4412	* 4411
d 2112	D 2111	n 3222	N 3221	x 3212	X 3211	9 4112	(4111
e 2222	E 2221	o 3322	O 3321	y 3122	Y 3121	0 3412	) 3411
f 4434	F 4431	p 4212	P 4211	z 4312	Z 4311	/ 4134	? 4131
g 4244	G 4241	q 3434	Q 3431	2 3112	@ 3111	, 2434	: 2431
h 2212	H 2211	r 2244	R 2241	3 4234	# 4231	' 4144	" 4141
i 4422	I 4421	s 4222	S 4221	4 4334	$ 4331	- 2312	— 2311
j 3312	J 3311	t 3334	T 3331	5 2334	% 2331	. 3144	. 3244
BACK SPACE 4322		TABULAR 2411		CARRIAGE RETURN 2144		SPACER 1000	

FOUR-NUMBER CODE (in black) shows how each letter (in red) is typed. For example, to type small "a," blow into the third mike twice and then into the fourth twice. First three puffs set up the letter, last puff types it. If last puff is into the second or fourth mike, letter is lower case; if into the first mike, letter is in capitals. A letter set up by the first three blows can be canceled by blowing last puff into third mike. A single puff blown into the first mike makes a space.

"The Four-Number Code (in black) shows how each letter (in red) is typed. For example, to type small "a" [a=3344], blow into the third mike twice and then into the fourth twice." This could also be controlled by foot push-buttons.

2231 2222 2244 3122 1000 2232 4344 2222 3422 2222 2244

1953: Breath controlled TV. Polio was rife in the 1950s confining people, such as Mary Kitsmiller above, to long spells within an iron lung. When the president, Ray Moloney, of the Lion Manufacturing Co. and gaming giant Bally, learnt of Mary's incarceration, he set the Lion engineering team to work on a breath-controlled Television that she could operate herself. Mounted on a goose-neck stand, one sensor would turn the TV on/off and the other would cycle through two or three channels. News of this invention was reported by Mary's local press and within the USA wide coin operated gaming newsletter Coin Machines.

1957: Light-beam controlled communication system. "Ricks Communicator" gave an electronic method of pointing at a specific word, letter, number, or picture for those who could not easily do so otherwise. Breaking a light-beam moved a motorised pointer around a range of communication tags. Removing a hand, leg, head, or finger from the light would stop the motor and make the selection. Master A-Z and anything could be said.

1960: POSM (Patient Operated Selector Mechanism. An electronic environmental control and communication system operated via sip-puff, switches, or joysticks. Made available free at the point of assessed need via the UK's National Health Service. Promoted, copied, and eventually improved upon around the world. Perhaps the most important moment in electronic assistive technology history. See Chapter Two for more on this world changing invention.

1965: Dr. Leslie Kay of New Zealand brings the “KASPA Sonic Torch” and “Binaural Sonic Glasses” to market: A far more practical evolution of the 1912 Exploring Optophone.

During the Cold War Dr Kay worked as a scientist for the British Navy developing underwater sonar technology using sound waves to find submerged objects such as submarines, torpedoes and mines.

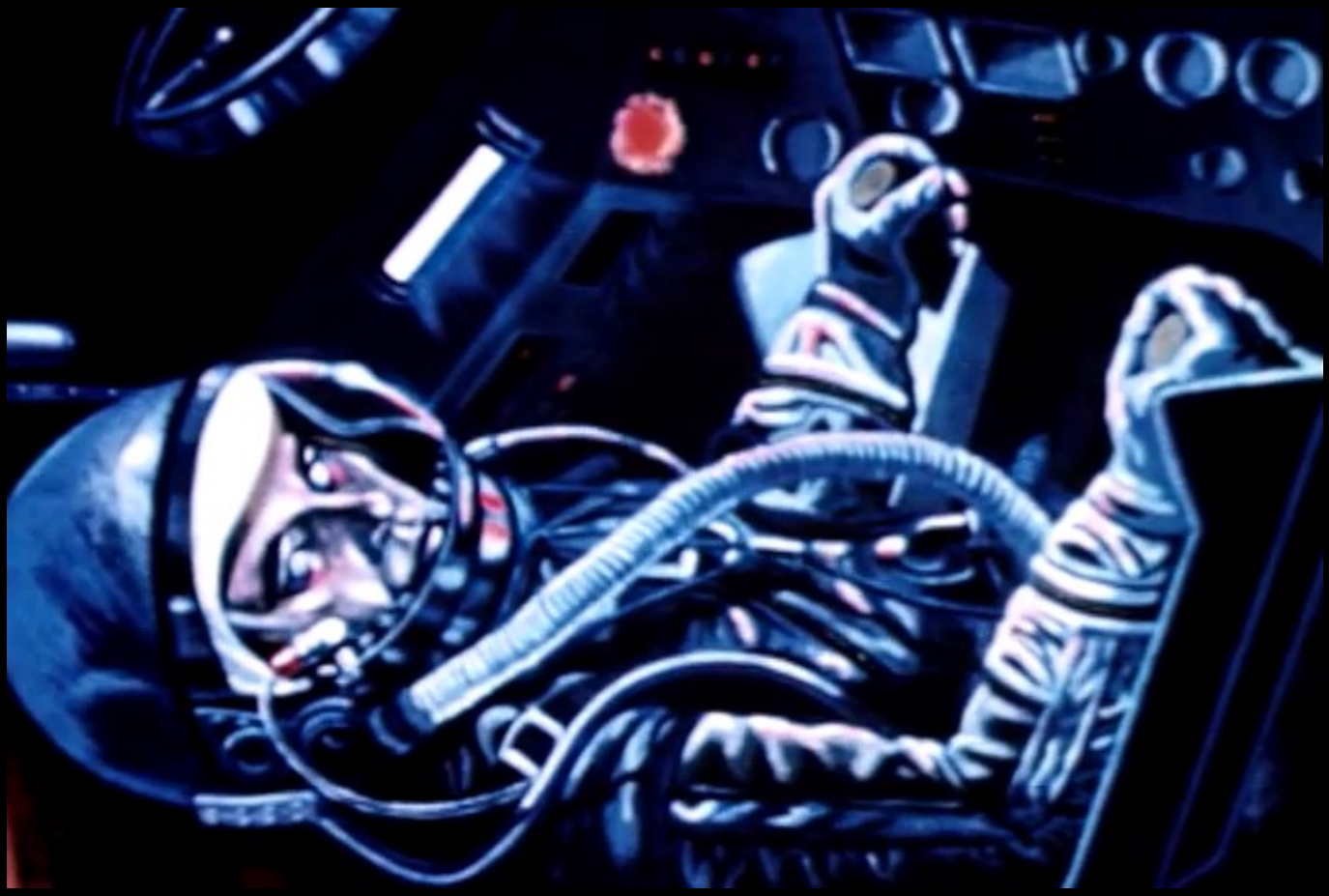
In 1959 Dr Kay’s interest was sparked by a news item covering the Queen Mother’s visit to a school for the blind to open some new facilities, including a swimming-pool. He wondered how the children would find their way about in water and decided to make a sonic device for them to use in the pool.

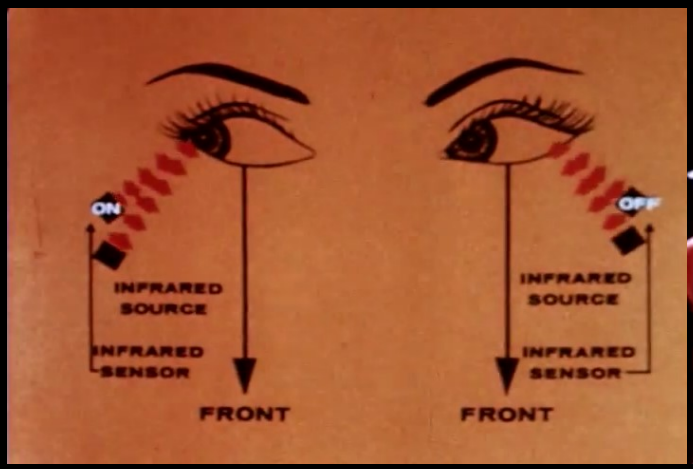
The resulting KASPA (Kay's Advanced Spatial Perception Aid) devices mimicked the navigational ability of bats and dolphins. Ultra-high frequency sound waves would be emitted into the environment with some of those waves bouncing back to the receiver. These would then be converted to a form the user had a chance of making sense of. For the babies to adults using a KASPA, this was in the form of very fast changing electronic sounds, fed through a small earpiece.

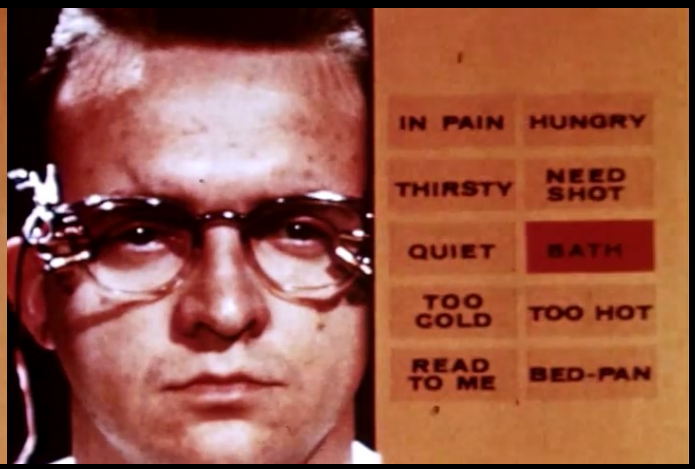
Though a lot of training and practice the proximity and solidity could be gleaned. Water sounded different to a brick wall. The approach of a person different to nearby swaying leaves.

Sighted people must have stopped and stared in wonder. Similar technology would be found 19 years later in the Sound Beam accessible musical instrument that converts movement to music.

1966: Sight Switch. In the race against the USSR to put the first man on the moon, the NASA space agency developed an eye-controlled computer interface. The fear was that astronauts under the great gravitational forces of a space capsule spinning out of control or re-entering Earth atmosphere, would be unable to lift their hands to operate critical controls. A two-switch eye-gaze system with scan and select interface (likely inspired by Possum) could offer a solution.







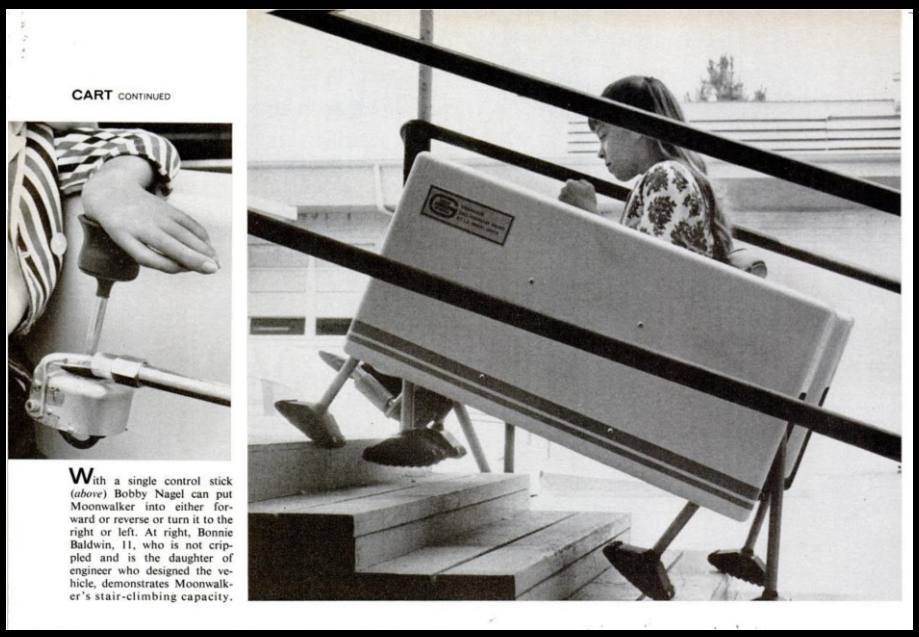
Although discarded for use in the Moon landing, the technology was integrated into an eye-controlled wheelchair and environmental control system. In use it was found to be expensive and unreliable compared to more conventional systems.

From the 1960s onwards NASA showed great commitment to passing on the benefits of their work to disabled people, as shown in “The Conference on Technology and the Neurologically Handicapped” run in September 1971.

1966: Moonwalker. Based on a rejected 6-legged prototype vehicle to explore the moon, a walking wheelchair was developed with encouragement from NASA Engineers. Three 8-legged open cockpit chairs were built in total that could be controlled by one hand or a chin cup arrangement.

MEDICINE A lunar vehicle becomes a joy for crippled children

A Cart Made for Walking



CART CONTINUED

With a single control stick (*above*) Bobby Nagel can put Moonwalker into either forward or reverse or turn it to the right or left. At right, Bonnie Baldwin, 11, who is not crippled and is the daughter of engineer who designed the vehicle, demonstrates Moonwalker's stair-climbing capacity.

From R.F Brodsky's book "On the Cutting Edge": The whole effect was a natty speedster begging for the kids to apply a full regalia of car names and stickers worthy of an Indy racer." The young children testers were said to love the 2 MPH Moon Walker, especially for steps and on sand, but found they could not race down corridors as fast as a conventional wheelchair, nor do wheelies. Cost, practicality and an increase in wheelchair accessible curbs and lifts saw an end to this idea.

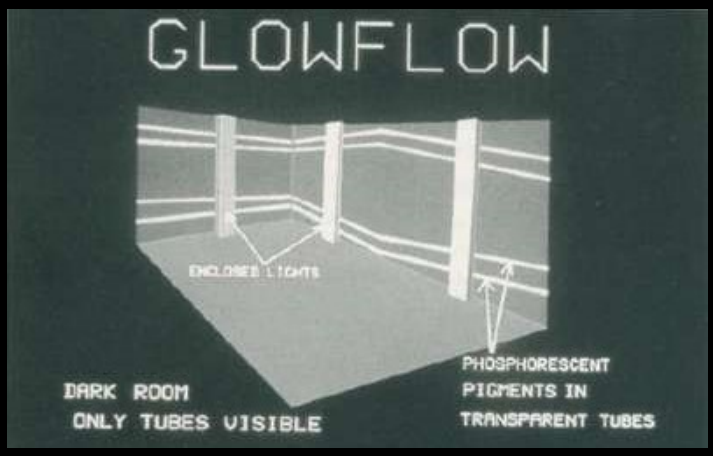
1968: Text-to-Speech. Noriko Umeda heads the first demonstrated English text-to-speech system at the Japanese Government's Electrotechnical Laboratory. Built by Hitachi with a 1500-word vocabulary it had three voices: robotic male, robotic female, and robotic child. A reading of Sleeping Beauty from Grimm's Fairy Tales to Read Aloud was given in Tokyo to showcase the possibilities.

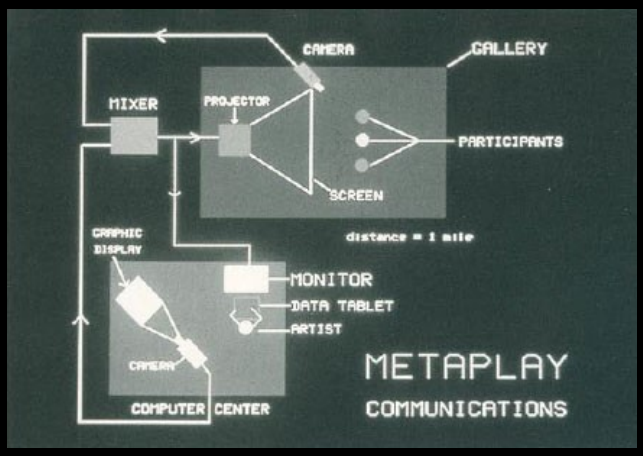
1969-1971 Responsive Environments. In effect, electronic playrooms, in which people used their bodies to interact with computer assisted sound and vision. This movement was driven by the pioneering computer artist Myron Kreuger.

"Glow Flow" was the first of these Responsive Environments, exhibited to the public at the University of Wisconsin, USA in 1969. Imagine a dark room enfenced by six pillars intersected by tubes of ultra-violet reactive water. By each pillar was a floor pressure switch that the shuffling 15-20 people inside could trigger, often by accident. Each press would step through a sequence of lights in the pillar radiating a neon effect down the adjacent tubes. It would also play electronic sounds that could swirl around the room.

Running this magical Human Computer Interaction was a hidden DEC PDP-12

minicomputer and Moog synthesiser. By design, the delayed speed at which these interactions occurred left people in a state of wonder… wondering if they were controlling anything at all.





The 1970 “Metaplay” environment addressed this confusion with a much more direct cause and effect relationship. The technology consisted of a video camera, projector, mixer, and behind-the-curtain Wizard of Oz computer operator.

In a dark gallery room, one to three participants would be greeted by a life-sized black and white video projection of themselves. One mile away, a computer artist would start to paint on this live feed using vector graphics. Gallery participants and the computer operator were free to play together in this new artificial reality.

A treasure trove of ideas were explored: “The artist could draw on a participant’s image or could draw around it so that the participant appeared to be standing in a shower. Or, she could draw a graphic door that opened whenever a participant touched it. Alternatively, the artist could communicate directly by writing words, or could attempt to induce the participant to play a game, such as tic-tac-toe [noughts and crosses]. Finally, she could play with the act of drawing itself, as she transformed one kind of picture into another.

The operator could make an outline dance to music in the gallery. The artist would try one idea after another to try to involve the participants. The artist could also direct the cameraman in the gallery to focus on any individual.

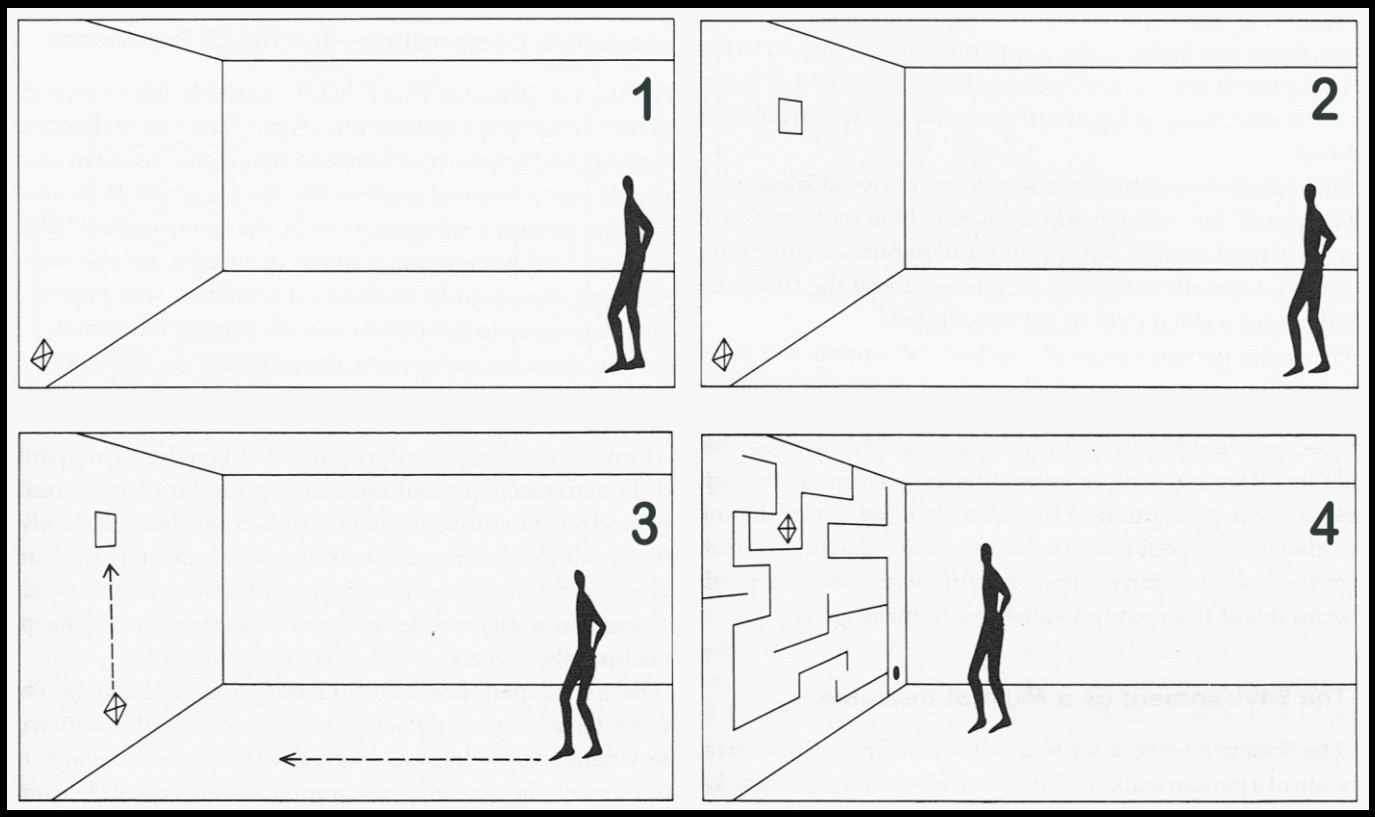
By drawing on a user’s hand and not erasing the mark, participants could draw on screen. Some would pass the drawn line to another’s hand so they could continue the artwork. These interactions were terminated by the lights-dimming and artist writing ‘Good-bye’ or something similar.”

This experience built-upon the work headed by computer graphics pioneer Ivan Sutherland at the MIT Lincoln Laboratory. His 1963 “Sketch Pad” graphical user interface system made the Metaplay artist’s job far more intuitive and immediate. “The Sword of Damocles” tethered and cumbersome virtual reality headset (1968) showed how the real world could be mixed with the virtual world of computers. Psychic Space (1971) took ideas from Glow Flow and Meta Play with an almost fully computerised experience. People queuing up the enter this single-player

experience were let in one at a time, often by a child at the door who would restart the programme and keep an eye on the time.

Upon walking in, you would see a computer-generated diamond symbol appear on a projected screen (1). If the player moved, the symbol would move with them, up, down, left and right, tracked by a grid of floor sensors. As the player moved a different musical note would play depending upon which part of the floor they stood on. The floor became a giant musical keyboard.

A couple of minutes later a mysterious square would appear (2). If the player should lead their diamond symbol to touch the square (3) a maze would appear (4). Taking careful steps to keep within the lines, players could traverse the labyrinth. Cheating had been anticipated. Players cheating by crossing a virtual line might find their symbol disintegrate, or have the line stretch elastically to pen them in. Their symbol might push the maze across the screen, or the maze might rearrange itself. They could never win.



For those more interested in playing musical tunes, the note layout would rotate from time to time to further disorientate the user. After 15 minutes of fun or frustration the player would be ushered out of the room.

From these early Responsive Environments, Myron Kreuger would go on to form the Artificial Reality Corporation paving the way for the likes of the Sony Eye-Toy and Microsoft Kinect. All ways to control a computer unencumbered by anything more than your own body.

1971: Optacon (OPtical to TActile CONverter), a commercial reading device for the blind is produced by Telesensory Systems Inc. With it, two dimensional shapes and symbols could be distinguished through touch alone.

The idea had distant roots. A device using light-sensors, electro-magnets and 64 tactile iron pins to convert text to touch was proposed by French inventor Camille Grin in 1881. Due to lack of funding, and perhaps, it being impossible with the technology of the time as suggested by Fournier D'Albe years later, the "Anoculoscope" did not come to pass.

And yet, in 1964, John Linvill, a professor of Electrical Engineering at Stanford University, alongside his blind daughter Candy Linvill and researcher James Bliss proved the concept. In a filmed demonstration, a gargantuan computer drove a scrolling message simultaneously to an air-fed tactile display and magnified display box of 96 light-bulbs. Candy, read aloud what she sensed through her fingers alone: "There was a time before our time…".

By 1971, the Optacon had been miniaturised to a pen-like camera, wired to a small box holding the battery, intensity controls and tactile array. This array was formed of 6 x 24 pins that jostled up and down under the user's forefinger, buzzing like furious bees as material was manually scanned. 50-100 words per minute reading times were possible by uncommonly skilled users. The material read might be the text on food packaging, newspapers, sheet-music, record labels or computer printouts. Early computer games played using an Optacon, keyboard and printer included Lunar Lander, Star Trek and Dungeon.

```
TRY AGAIN?
(ANS. YES OR NO):YES
FIRST RADAR CHECK COMING UP


COMMENCE LANDING PROCEDURE
TIME,SECS   ALTITUDE,MILES+FEET   VELOCITY,MPH    FUEL,LBS    FUEL RATE
       0             120     0        3600.00      16000.0       K=:0
      10             109  5016        3636.00      16000.0       K=:0
      20              99  4224        3672.00      16000.0       K=:0
      30              89  2904        3708.00      16000.0       K=:0
      40              79  1056        3744.00      16000.0       K=:0
      50              68  3960        3780.00      16000.0       K=:0
      60              58  1056        3816.00      16000.0       K=:0
      70              47  2904        3852.00      16000.0       K=:170
      80              37  1474        3539.86      14300.0       K=:200
      90              27  5247        3140.80      12300.0       K=:200
     100              19  4537        2710.41      10300.0       K=:200
     110              12  5118        2243.83       8300.0       K=:200
     120               7  2284        1734.97       6300.0       K=:200
     130               3  1990        1176.06       4300.0       K=:200
     140               0  5040         556.96       2300.0       K=:170
     150               0  1040      -   21.21        600.0       K=:0
     160               0  1087          14.79        600.0       K=:0
     170               0   606          50.79        600.0       K=:30
     180               0   436      -   27.90        300.0       K=:0
     190               0   581           8.10        300.0       K=:8
     200               0   425          13.17        220.0       K=:10
     210               0   253          10.30        120.0       K=:9
     220               0    96          11.11         30.0       K=:100
FUEL OUT AT   220.30 SECS
ON THE MOON AT   226.12 SECS
IMPACT VELOCITY OF    21.36 M.P.H.
FUEL LEFT:     0.00 LBS
CONGRATULATIONS ON A POOR LANDING
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You are in a clearing, with a forest surrounding you on the
west and south.
There is a grating securely fastened into the ground.
There is a pile of leaves on the ground.

> use egg

I don't understand that.

> egg

What should I do with the jewel-encrusted egg?

> egg on grating

What should I do with the jewel-encrusted egg?

> open grating with egg


You rather indelicate handling of the egg has caused it
some damage.
The egg is now open.
There is a golden clockwork canary nestled in the egg. It
seems to have recently had a bad experience. The mountings
for its jewel-like eyes are empty, and its silver beak is
crumpled. Through a cracked crystal window below its left
wing you can see the remains of intricate machinery. It is
not clear what result winding it would have, as the
mainspring appears sprung.
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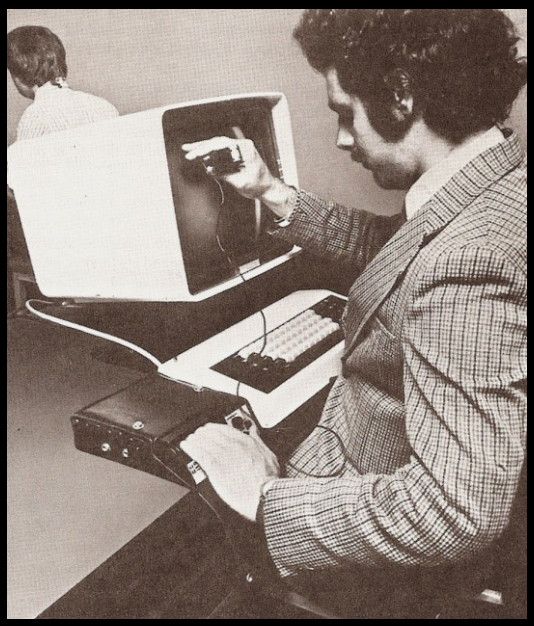
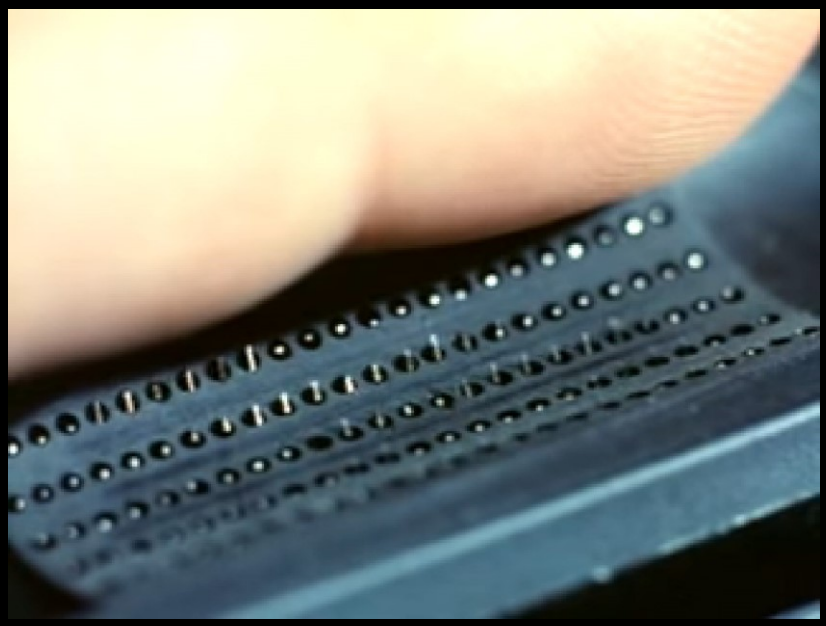
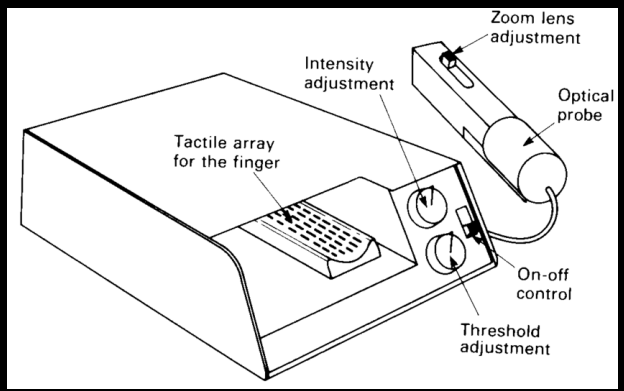
Accessories for the Optacon included a range of camera lenses, including one for screen-reading directly from computer screens: Ready for the explosion of “work” and home computer text games.







SECTION MISSING – TO BE COMPLETED IN 2021

1971-1974: Blissymbols used for the first time by children with cerebral palsy at the Ontario Crippled Children's Centre school (OCCC) in Toronto, Canada.

Blissymbols, previously known as Semantography, and before that as “World Writing” was first published in 1949 by mandolin playing chemical engineer Charles Bliss. It wasn’t originally aimed at giving a voice to disabled children but at giving the entire world a unifying logical language to end all war.

“Sticks and stones may break my bones (but names can never hurt me)”: Bliss (then Karl Blitz), an Austro-Hungarian Jew living through the rise of National Socialism knew this to be untrue. Torn from his wife Claire and his work in electrical patents at the German radio equipment company Telefunken, Blitz was imprisoned at Dachau concentration camp in 1938.

How words were used was the problem. Twisting the meaning of ambiguous words could manipulate ordinary people into justifying all manner of evil acts. The first line of the German national anthem, “Deutschland über alles” (Germany Above All) was made a declaration of racial and moral superiority. However, when first written in 1841, the line was intended as a call for a unified Germany, at a time when Germany was divided into 30 or so separate principalities. “A united Germany above all our divided interests”. Perhaps.

Blitz won release from hell thanks to the tireless petitioning of his German-Catholic wife. It came with the condition that he left for England immediately, never to return. Claire would not be permitted to follow her refugee husband. They saw each other briefly. Karl left for England. World War II exploded.

His new homeland was soon to be bombed mercilessly day after day in the German “Blitzkrieg” (lightning storm). In a tiny act of defiance, Karl changed his name from the war-like Karl Blitz, to the peaceful Charles Bliss.

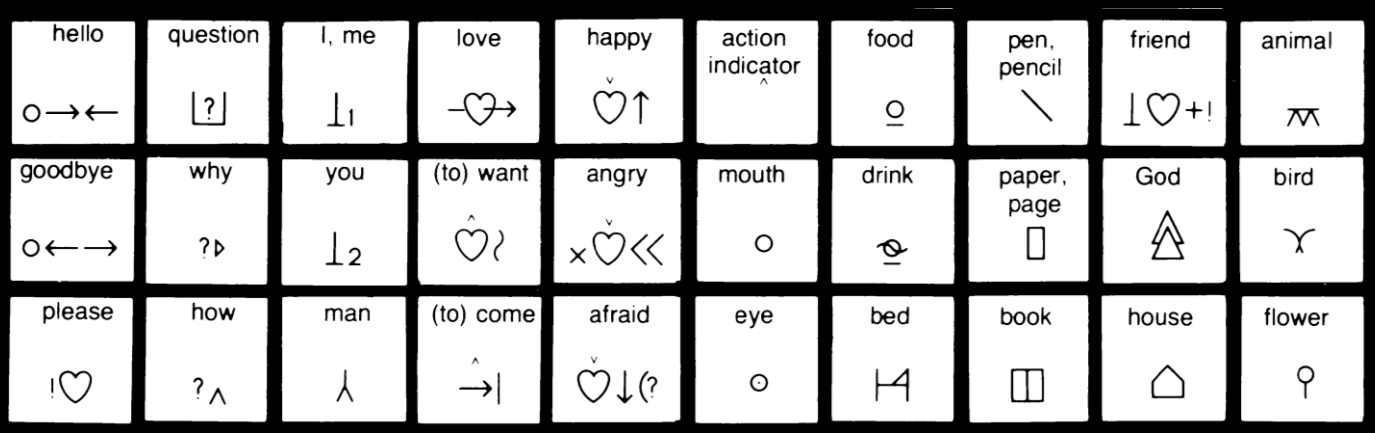
After two painful years apart, Charles and Claire travelled the globe to reunite in Shanghai, China on Christmas Eve 1940. Here they started to make a new life together. Surrounded by Chinese symbols, something clicked for Charles.

Each symbol, so it seemed, was a word which once learnt could be read aloud in any language. The symbol for a person looks like a person. He remembered the electronic diagrams his father used to work on. He thought of basic road signs and chemical symbols; things that can be understood around the globe.

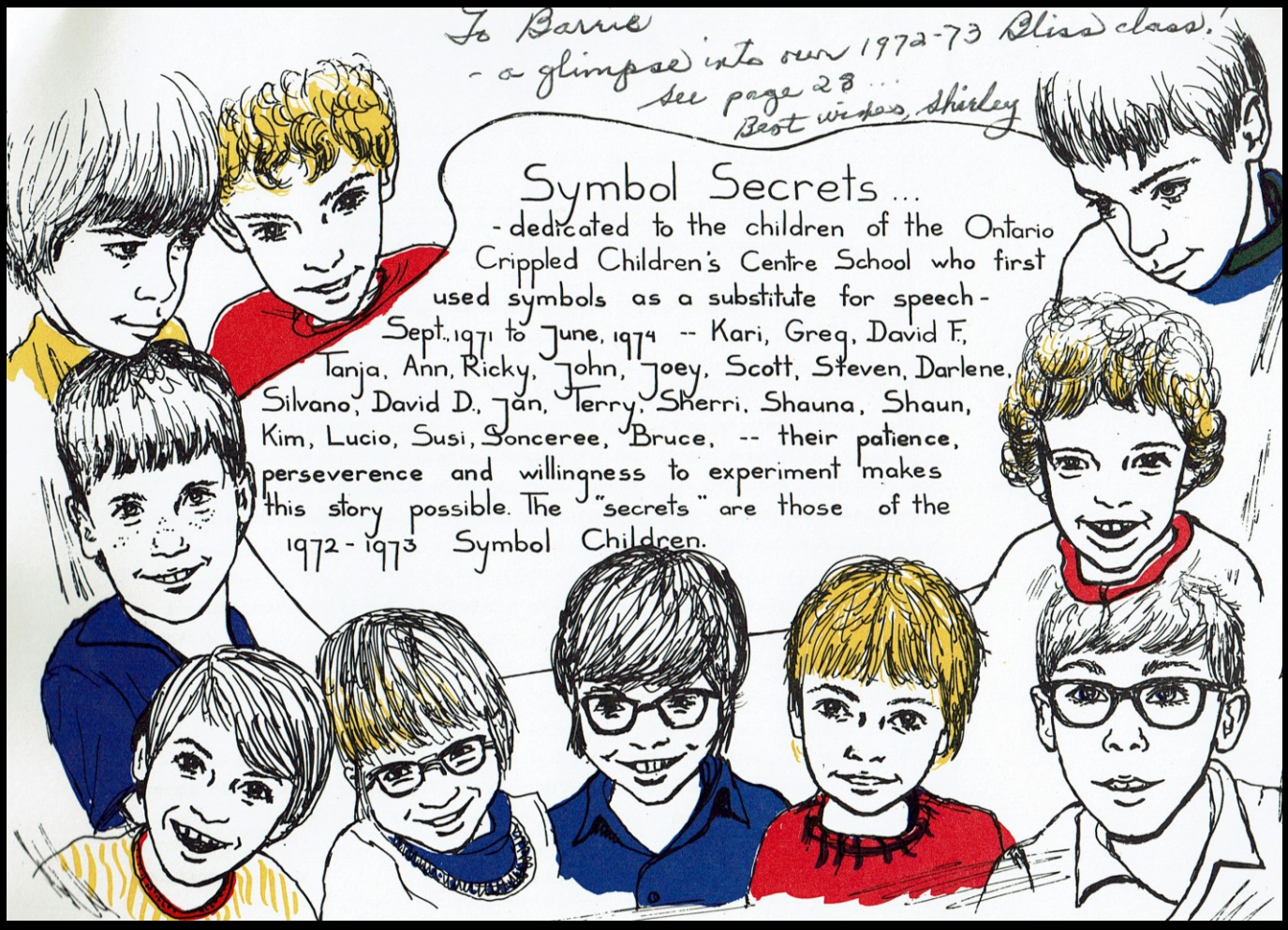
At war’s end, without citizenship, they were forced to move on once again, deciding to settle in Australia. Here, Charles’ dream of a universal language to unite humanity was set to paper, publishing “International Semantography: A non-alphabetical Symbol Writing readable in all languages”. When sent to the United Nations, to academics, philosophers and journalists, the dream was met with an almost total brick-wall. Aside from the occasional brilliant mind, such as Bertrand Russell, no one seemed to care. Twenty years of disillusionment passed.

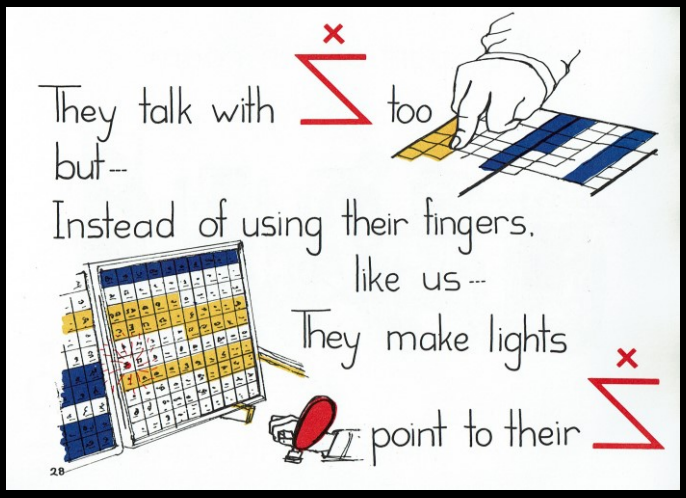
In 1971 out of the blue, a letter floated onto the desk of Bliss of a “beautiful dimpled child using his symbols”, addressed from the teacher Shirley McNaughton from Canada.

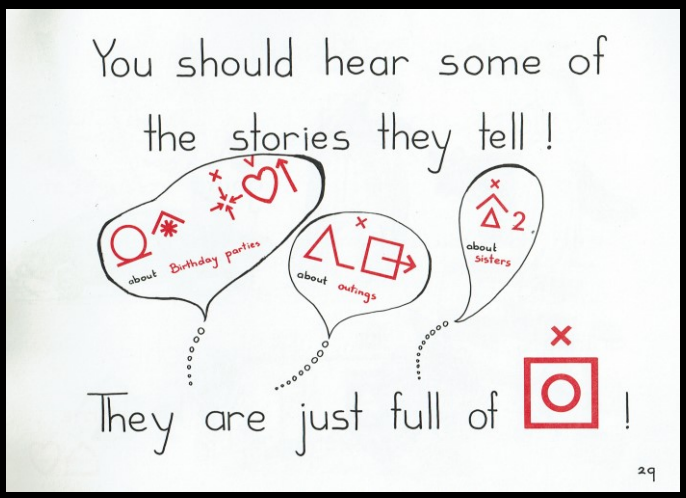
Children who struggled to make themselves understood were being taught how to communicate using Blissymbolics. At first Shirley found that some professionals doubted the intelligence of her students, but it was the sparkle in the eyes that convinced her otherwise. Bliss gave them the means communicate with the outside world. It enabled someone without a clear voice, who couldn’t use a pencil or typewriter to better express hopes and fears, to be cheeky, to ask questions, to tell someone special: I. love. you.

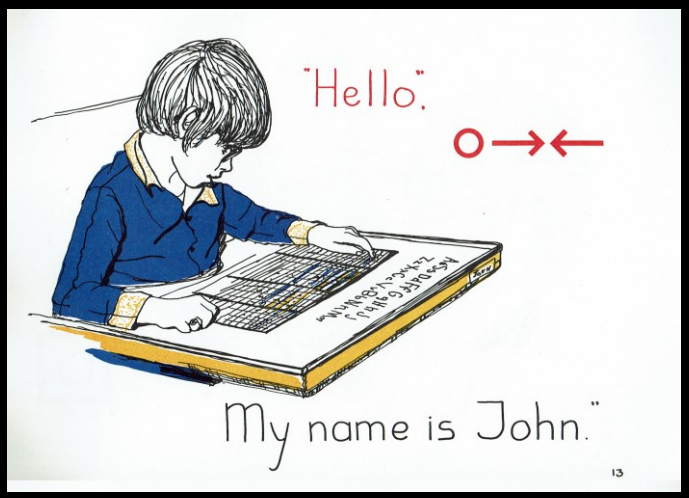


Children started with about 10 basic symbols to point out, such as drink, toilet, bed, growing to around 500 for the most able, about as many as could be put within reach. Symbols could also be combined to make new words. The symbol for long and the symbol for food put together could mean Spaghetti. One child, Terry Martin, when asked what he wanted to dress up as for Halloween pointed to Creature. Drinks. Blood. Night…. He wanted to be a vampire.



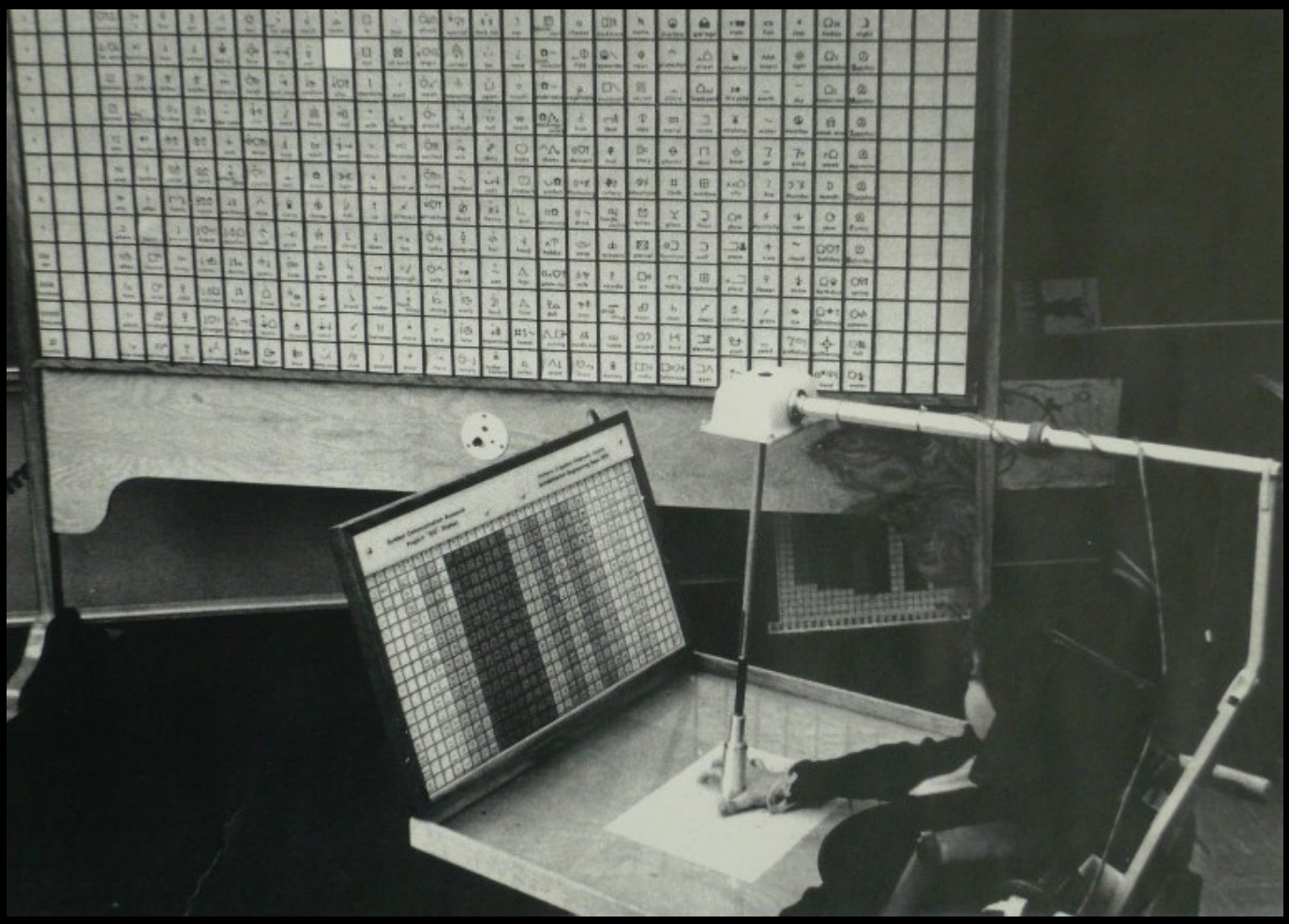






Pages from Symbol Secrets: The wonderful story of the first Blissymbol users.

The OCCC team headed by Shirley McNaughton and Margrit Beesley alongside their engineering department tailor made communication systems to match each child. Some used electronic aids if they could not control their arms well enough. A 512 symbol lightboard system enabled children to use a gated joystick and radio communication to speak to the entire class in illuminated symbols.

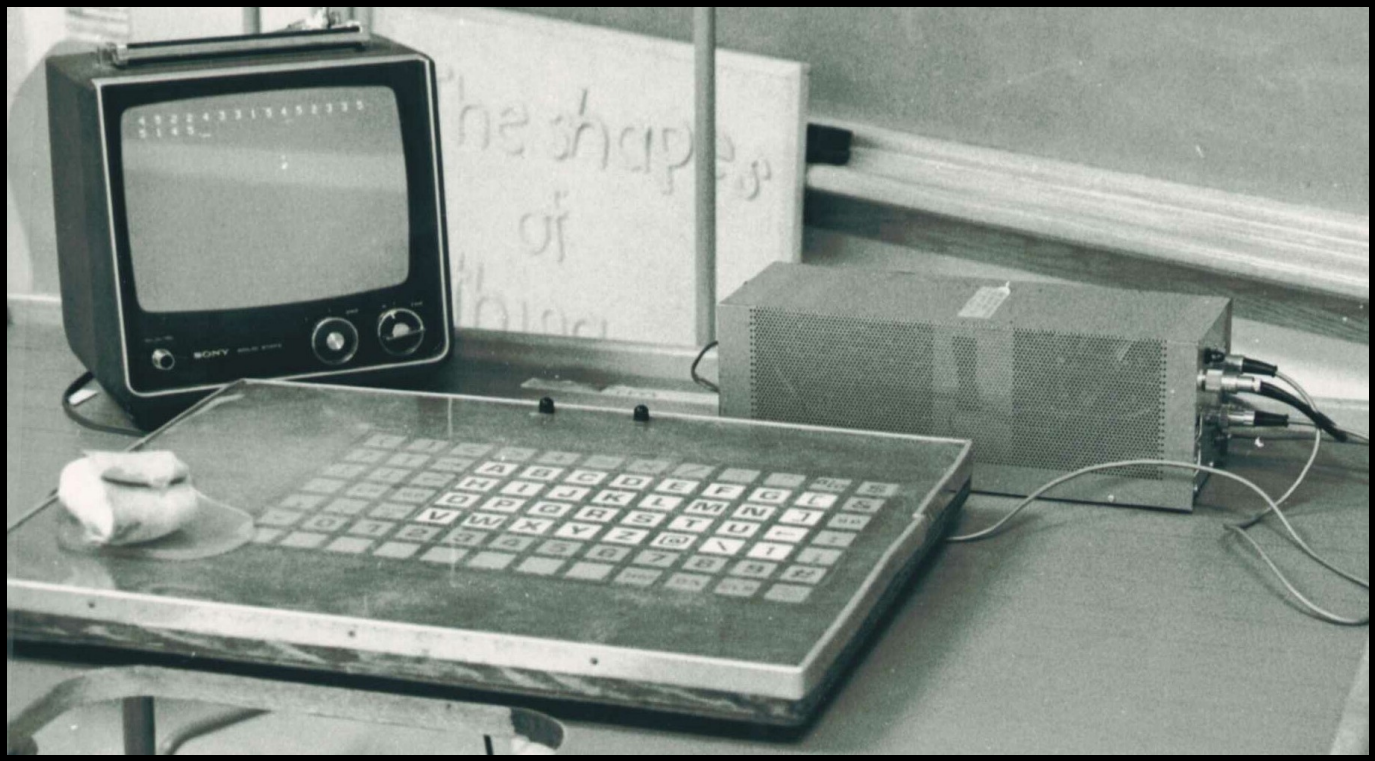


Charles had battled for so long for recognition, that he was said to have danced around and played his mandolin upon receiving Shirley's letter. He mortgaged his home and travelled to Canada to see this all with his own eyes.

He was thrilled and charmed at first, until he started to feel his dream of a pure logical language slipping through his fingers. He was horrified to find his system modified and used as a steppingstone to English. He felt this was a perversion of Blissymbolics, badgering the OCCC team at every turn to revert to his ideals. This escalated to legal action and threats to have Shirley put away for life.

Against this backdrop, Shirley spear-headed Blissymbol Communications International (BCI) in 1975 to further spread OCCC's work. Pockets of specialist children's services started to use Bliss, including England, Hungary, France, Sweden, Israel (with reverse order symbols) and Zimbabwe. Also, Argentina, Brazil, Finland, Iceland, Italy, Bermuda, Guam, Japan, Portugal, Spain, Netherlands, Switzerland, Venezuela, Madagascar and Yugoslavia. Improved electronic Blissymbol devices followed, including the portable one-switch accessible Prentke Romich BSS-100. A World Writing. For a time.

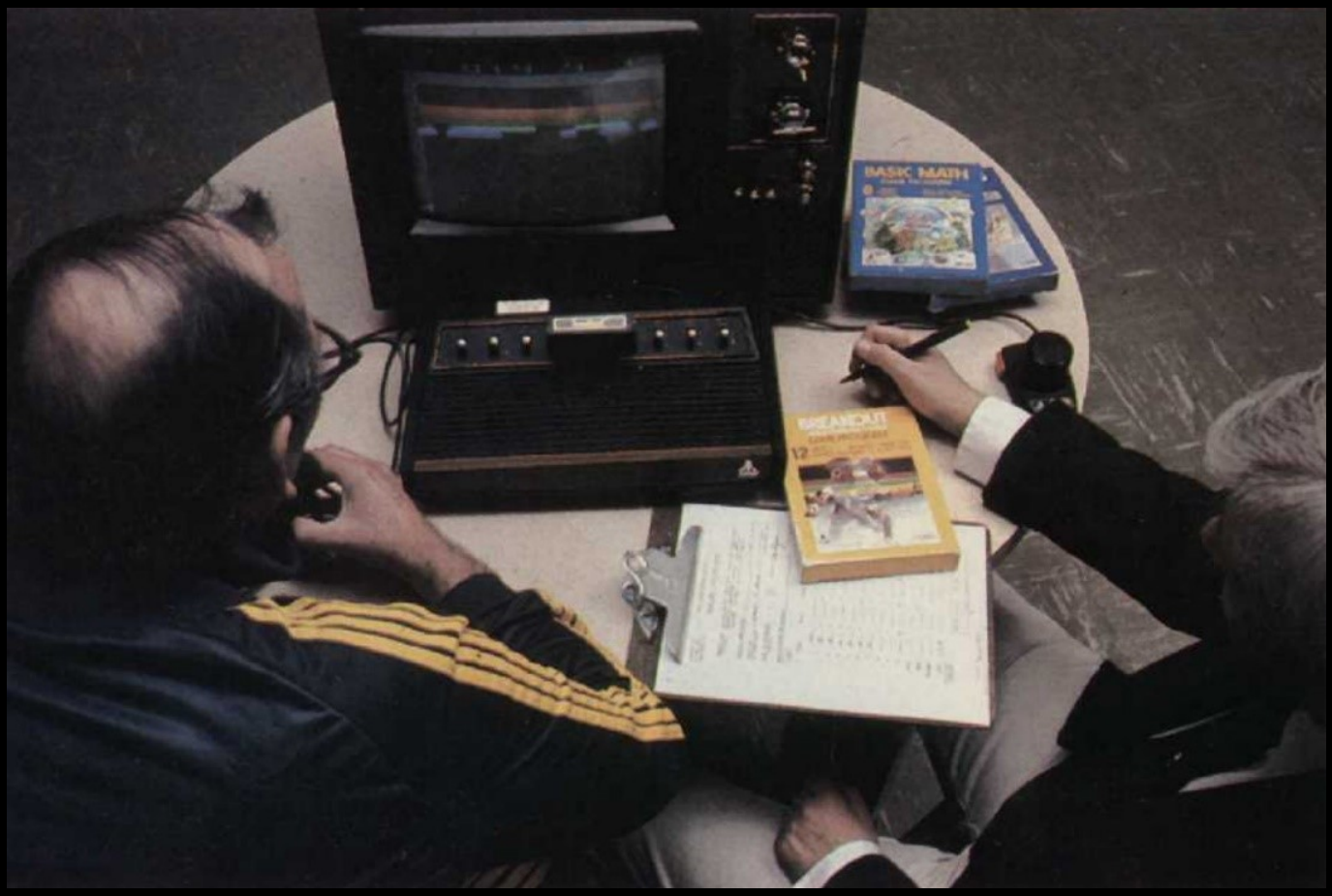
SECTIONS MISSING – TO BE COMPLETED IN 2021



SECTIONS MISSING – TO BE COMPLETED IN 2021

HANDICAPPED CHILDREN ENJOY ATARI GAME

SECTIONS MISSING – TO BE COMPLETED IN 2021



SECTIONS MISSING – TO BE COMPLETED IN 2021

Apl 3rd-7th and Oct 2nd-6th.

'Technology for the Handicapped Child".

Organised jointly by Castle Priory College and Mr.Roger Jefcoate, Con, Assessor and Lecturer concerned with Electronic Equipment for the Severely Disabled.

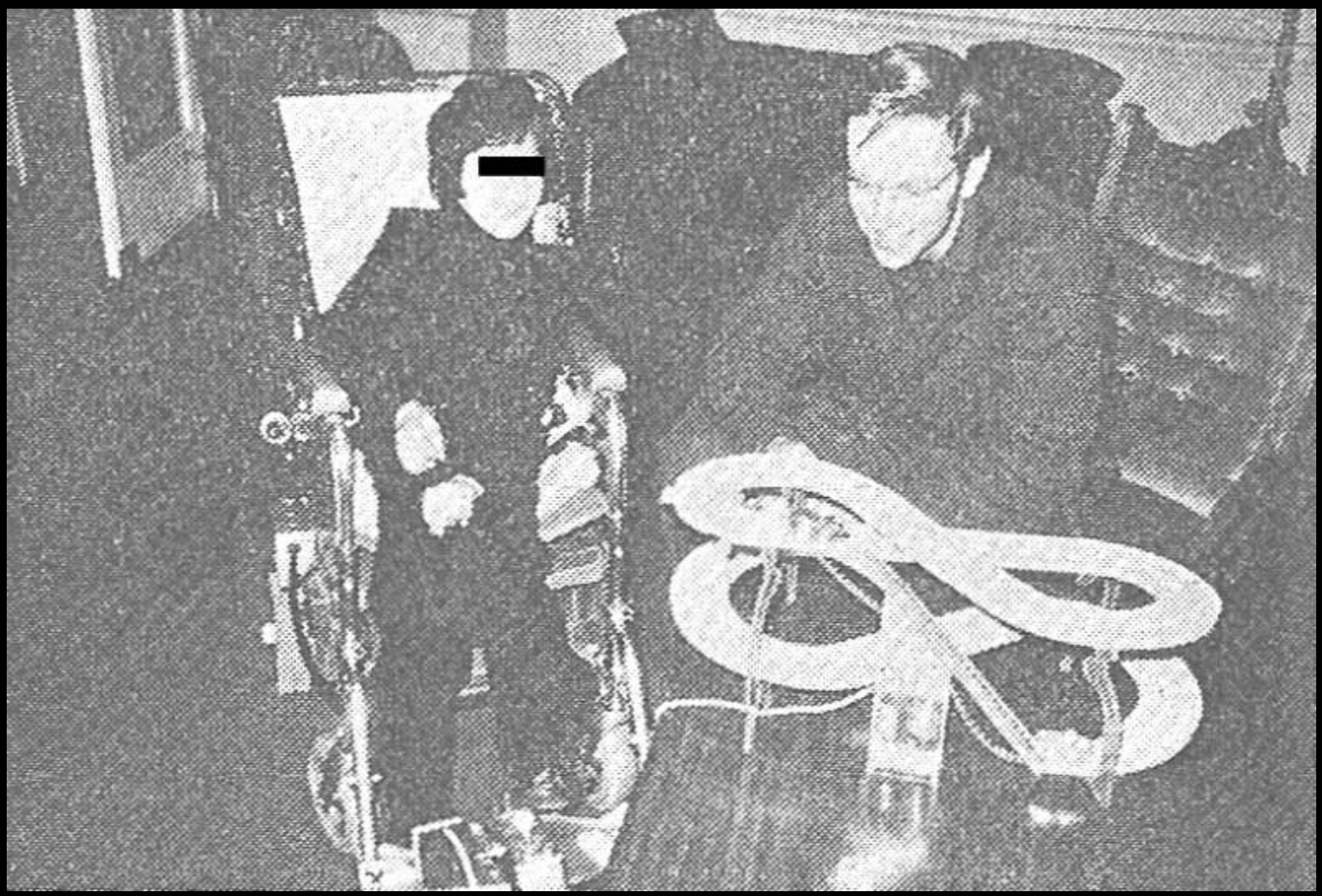
An intensive course covering a broad range of technical aids and special equipment (including toys) with experienced advice on techniques, application and use. It will be of a practical nature and opportunity will be given for discussion and to try equipment demonstrated and on show.
The provisional programme details include: the role of technology; rehabilitation engineering for the handicapped child, electric and electronic typewriters; communication equipment for deaf people, educational technology and teaching methods for the mentally handicapped child; adapted games in the special school; workshop session - make your own toy or game; getting older - technical aids at school, home, work, special education in Britain; matching severe disability to special aids; typewriter teaching for the primary child; special mobility aids, the Bliss Symbol System; a new electronic communicator; pre-school communication and play; adapted toys for disabled children; life can be fun for everyone; T.L.A. film - Good Morning - therapeutic toys.

To be held at: Castle Priory College, Thames St,Wallingford, Oxfordshire OX10 OHE.

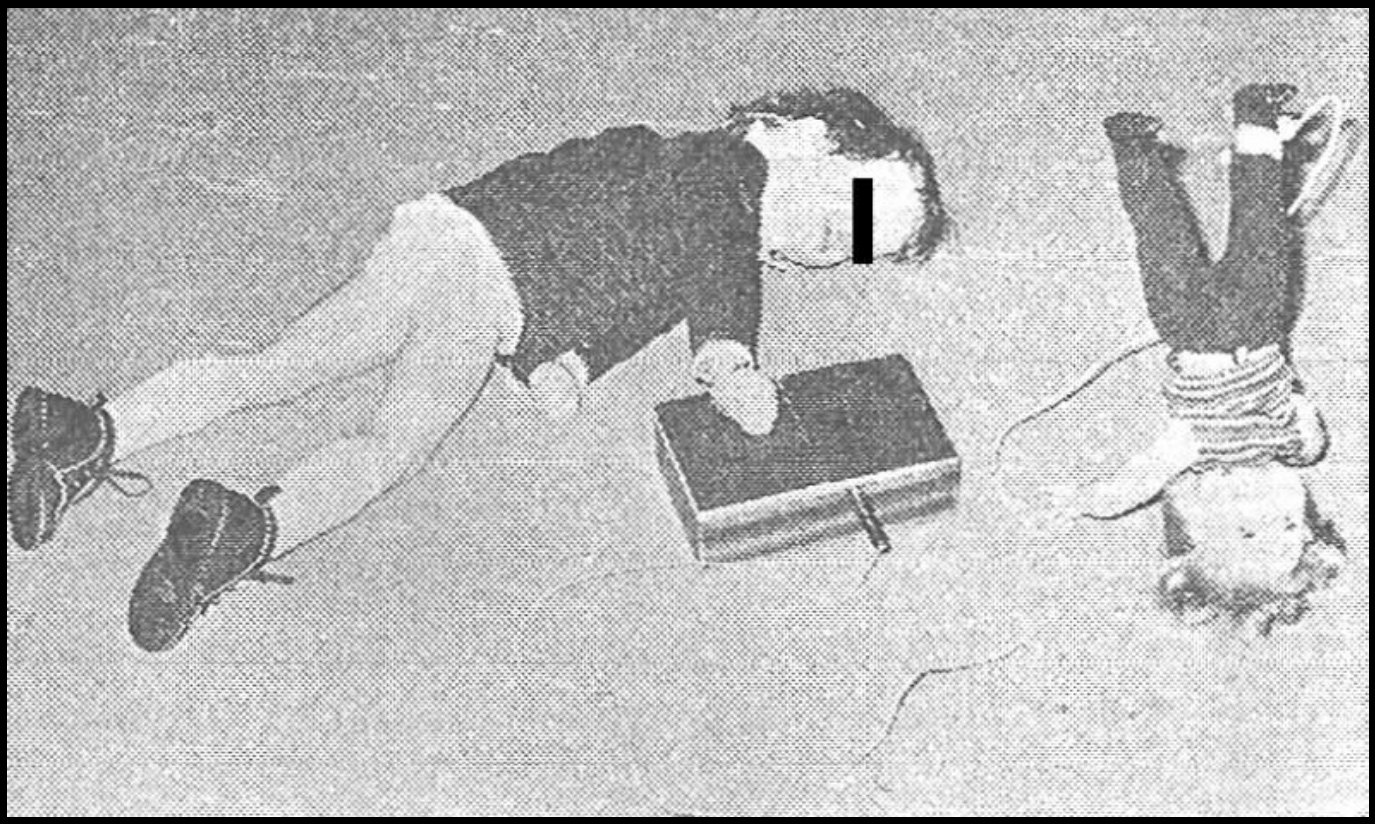
Fee: Tuition £29 Residence £33.
Applications, together with a non-returnable deposit of £5 to: Castle Priory College.

SECTIONS MISSING – TO BE COMPLETED IN 2021

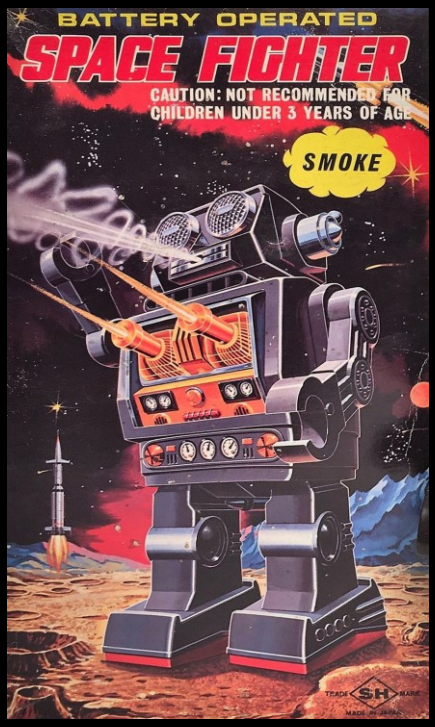
Roger Jefcoate with remote control toys on the Aidis Trust stand in 1979. A begging and barking poodle and smoking and firing “Space Fighter” robot.



Winfield Roller Coaster via a foot switch (bottom)



Palitoy Tippy Tumbles. [pictures via 1980 Japanese article by Roger]



Many battery toys created in the 1960s and 1970s, normally from the far East, were adapted by people like Roger Jefcoate. [link]

1979 Blake's 7 advert for Subtitles on BBC Teletext.

SECTIONS MISSING – TO BE COMPLETED IN 2021

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SEE: OneSwitch.org.uk/page/100 for the full story

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