Lecture 18. Joystick Culture: Microcomputers

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Fig. 1. Microkid. From a 1983 CompuServe ad.

Introduction

In previous lectures we discussed the impact of the semiconductor industry (microprocessor) on the creation of the first wave of microcomputer activities. We also discussed the role of the computer hobby movement in bringing computers to our attention. Then came the home computer.

The computer hobbyists' movement was rather an unexpected factor in the development of the microcomputer industry. Equally surprising is the role of children in bringing home computers – yes, home.

At the end of 1970s microcomputer manufacturers saw all the signs that people could be persuaded to buy a home computer, but finding ways to persuade them was a very challenging marketing task. Microcomputers in education, at schools and in homes, seemed to be a part of the answer. Microcomputers as a perfect electronic entertainment gadget was even better. That's why the industry focused on children. If children could only find computers entertaining, useful, and irresistible, then which parent would resist for long. And it worked as planned: from games irresistible to children to computer in every home.

This lecture discusses the impact of computer games, including educational games, on the development of personal computing.

Enter microcomputers

The first company to offer a game for a microcomputer was the Canadian Micro Computer Machines which released its MCM/70 PC with a handful of games, including a horse race simulation.

The MCM/70 was equipped with a single line plasma display with no graphics capabilities (see Fig. 2). In the horse race game, line segments representing horses were dashing from the left-end of the screen to the right-end at random speeds, as depicted in Fig. 2.

Fig. 2. MCM/70 horse race simulation. Image by Z. Stachniak.

According to Mers Kutt, the inventor of the MCM/70, the demonstration of this game on the MCM/70s prototype made an impression on Intel's co-founders R. Noyce and G. Moore who were surprised with the capabilities of Intel's microprocessor that powered the MCM/70 computer.

It is possible that this game was influenced by a similar game *Horses* whose BASIC code was published in DEC's *101 BASIC Computer Games* (cf. [10]). In this book, we find the following comment regarding its source: "The published program has been around DIGITAL for as long as anyone can remember. Its author is now unknown." ([10], p. 133)

In August of 1974, Joe Weisbecker, an RCA computer engineer and a dedicated computer educator (who was already mentioned in Lecture 6) published an article "A practical, low-cost, home/school microprocessor system" (see [9]) in which he discussed in detail the 'recreational' applications of future microcomputers listing over 20 games that could be implemented on even a basic microcomputer, games like TIC TAC TOE, Hexapawn, Football, Bawling, Space War, and Moon Landing, most of them already implemented on his FRED educational microcomputer.

Fig. 3. Weisbecker's daughters playing a game on FRED-2 computer (early 1970s). Image courtesy of David Sarnoff Library.

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Star Trek

First microcomputers were built with low amounts of memory (typically between 256 bytes to astonishing (not!) 16K) and could work only with alphanumeric displays. This severely restricted the type of games played on these early machines to mostly games in "prose" or "text" form. In such games, objects manipulated by a player were either not displayed or displayed statically as strings of alphanumeric characters.

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THIS IS ROOM  14 ADJACENT TO  1,  17,  2
SHOOT OR MOVE: M
MOVE TO: 1

YOU ARE FARTHER FROM THE WUMPUS.
I HEAR BATS.

THIS IS ROOM  1 ADJACENT TO  6,  14,  16
SHOOT OR MOVE: 6
SHOOT OR MOVE: M
MOVE TO: 6

YOU ARE CLOSER TO THE WUMPUS.

THIS IS ROOM  6 ADJACENT TO  1,  3,  12
SHOOT OR MOVE:
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Fig. 4. Hunt the Wumpus published in *Creative Computing*. Source: www.sol20.org/programs.html.

The computer was directing a player with as little typing as it was necessary. Graphics had to be replaced by user imagination and a bit of text describing the current state of the game.

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Interaction was done by displaying menus, questions, directives, statistics, etc. and entering possible choices into a computer. The result of an action was communicated by a computer in sentences: 'you have destroyed Klingon cruiser', 'you are under attack', 'this room is empty', or 'you have lost the game'.

In the first decade of personal computing, no single piece of software exemplified the excitement of computer gaming better than the game *Star Trek* - computerized derivative of the science fiction classic series *Star Trek* conceived by Gene Roddenberry.

Fig. 5. Processor Technology TREK80; a version of the famous Star Trek game for the SOL-20 computer. Source: www.sol20.org/programs.html.

The player assumed the role of Captain James Tiberius Kirk of the Starship Enterprise, the mission was to free the galaxy of Klingon intruders (by destroying their ships) and, thus, defending the freedom and well being of the United Federation of Planets. The game's objective was to be accomplished within a certain time frame (the number of stardates) and fixed resources (energy, weapons) which were consumed when moving the Enterprise around or firing weapons at Klingon scum, or replenishing at a secret star base.

The game brought the fantasy of exploring far-away galaxies right into your home, you could do better than the famous captain James T. Kirk fighting Klingons.

Fig. 6. Lunar lander published in *Creative Computing*. Source: www.sol20.org/programs.html.

It is possible that there was at least one *Star Trek*-like game written for every microcomputer platform during the first decade of personal computing. regardless of a computer's hardware configuration.

To make microcomputing the fast food of the digital society required the rethinking of the very concept of the personal computer. "Very nice, dear, but what does it do?" asks Mona Lisa holding a computer in her hands on the cover of April 1981 issue of *Practical Computing*.

Fig. 6. Front cover of April 1981 issue of *Practical Computing*.

To fully develop itself into a viable high-technology industry, microcomputing required a new, sizable, and stable target market for its continuous growth. And there it was – the vast consumer electronics market, seemingly boundless and immensely profitable.

In 1981, one of the golden years of video game industry, "Video games raked in almost twice what Hollywood grossed; three times the combined TV revenues and gate receipts of major-league baseball, basketball and football; and four times the amount of money spent on records and rock concerts." (Cf. [8], p. xii.) With the growing popularity of microcomputers it was evident that the lucrative video game market would not remain an exclusive property of the arcade and video game console manufacturers.

In fact, these were the games and thriving videogame culture nourished by the popularity of the arcade games such as *Pong* (Atari, 1972), *Tank* (Kee Games, 1974), *Breakout* (Atari, 1976), *Space Invaders* (Taito, 1978), or *Asteroids* (Atari, 1979), as well as by home videogame systems form Atari, APF Electronics, Bally, Coleco, Fairchild, Magnavox, and RCA, that created the home computer industry and rapidly expanded the microcomputer market. There was a lot of money to be made in the videogame business and with the microcomputer marketed as a sophisticated entertainment box, a lion share of proceeds from the videogame market could be redirected to the accounts of the microcomputer hardware and software firms.

As it turned out, selling the idea of a microcomputer as a perfect entertainment box was among the most successful (and well understood) marketing strategies. Every home computer had to have at least one joystick or other game controller port. Games occupied prominent position in the software libraries of Apple, Radio Shack, Commodore, Atari, IBM and other manufacturers.

To defend themselves from an imminent invasion of the world of video game entertainment by microcomputers, some video game companies decided to enter the home computer market with their own computers. One of them was Atari which dominated the videogame industry until its collapse in 1983.

> ATARI Home Computers are simple enough to be used by your children, yet powerful enough to manage complex management tasks.
>
> Bring the quality of coin-operated computer games into your home. You will find that the ATARI Home Computer version of PAC-MAN is virtually identical to its incredibly popular coin-operated counterpart... A wealth of excitement packed games awaits you at the keyboard of your ATARI Home Computer! (From *ATARI Home Computers Product Catalog*, 1982, pp. 1 and 21.)

Fig. 7. The Atari 400 home computer. Source: York University Computer Museum.

In comparison with videogame consoles of the 1970s, home computers had a number of advantages. One could play only commercially distributed games on game consoles while a home computer owner could, in addition to commercial games, play games from other sources. A micro owner could write his or her own game, could copy a game code from one of the many microcomputer magazines, could share games with others.

Home computers could function as text editors, educators, or home finance advisers.

In spite of the listed advantages, microcomputer manufacturers made sure to take advantage of the popularity of the arcades and consoles. They advertised their products as arcades at home (with similar graphics and audio capabilities) and as more able consoles. The campaign was indeed successful and forced some game console manufacturers to search for rather unusual solutions such as special hardware extensions that converted their consoles into rudimentary home computers. That strategy did not work and when the prices of home computers dropped below those of consoles, the console market collapsed.

I'll do it Latter Mom! I'm at a Computer Now!

Children have been used in computer ads for as long as the computer industry exists. First, images of children "operating" a computer were used as symbols of simplicity; images of little "computer cuties" smiling at a reader were to prevent the reader from turning the page too fast. Then children became the customer.

Fig. 8. Young IBM computer user. Photograph by Melanie Carr in *OS2 Professional*, November 1992.

Before we look at the impact of the children's passion for games on home
and personal computer industry, let us briefly discuss the use of a child motif
in computer advertising.

The Canadian company Micro Computer Machines unveiled its MCM/70
in September 1973 showing its computer to the media. Surely enough, one
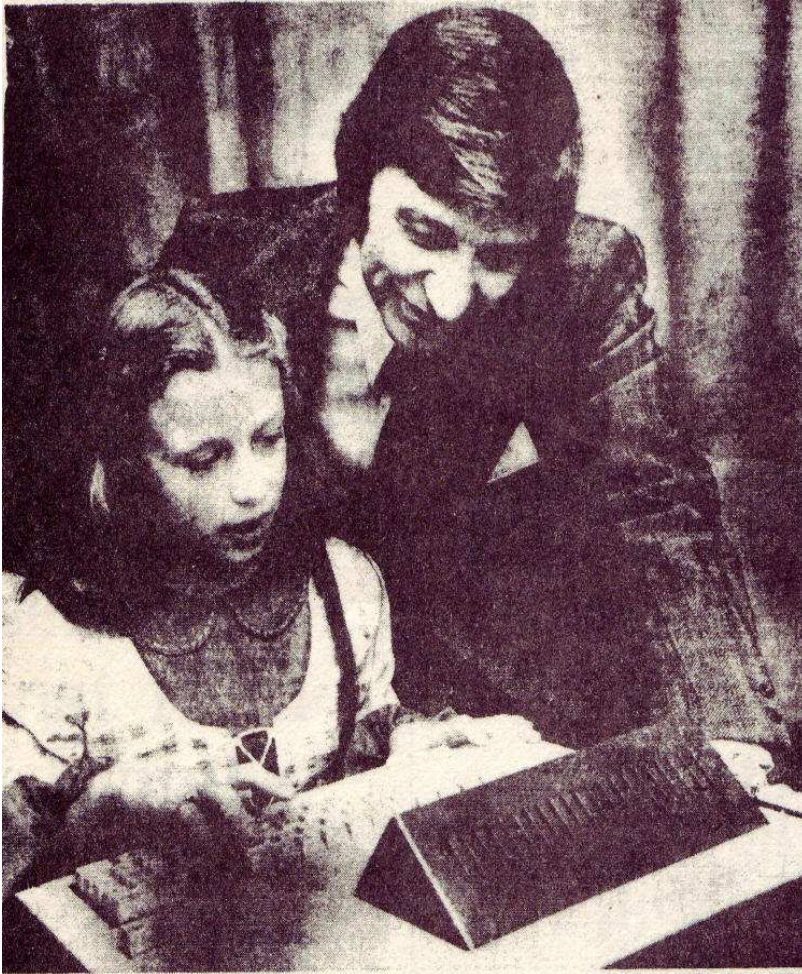of the photographs taken during the unveiling depicted a child operating the
computer.

Fig. 9. Mers Kutt (right) instructs Kim Edwards (left) how to operate the MCM/70
during the MCM/70 unveiling in Toronto. Source: *Toronto Star*, September 26, 1973,
photograph by Keith Beaty.

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Intel, which was the first company to market a microprocessor, had never seriously entertained the idea of mass manufacturing of its own personal microcomputers nor had it considered the design of a home computer for young computer users. In 1976, however, Intel did place an ad in *Byte* which showed an enthusiastic kid named Rickey posing with the soldering gun over a sophisticated Intel 8080-based single board computer SDK-80. As portrayed by Intel, Rickey was a curious but otherwise typical kid of his age who liked lizards, hot fudge sundaes, skateboards and microscopes. But now, according to Intel's ad, "Rickey's tackling the SDK-80 microcomputer kit for his next science project".

Fig. 10. Ricky's tackling the SDK-80 microcomputer. Source: *Byte* 14, 1976, p. 21.

> When his Dad brought home the Intel SDK-80 microcomputer
> [...], Rickey helped him put it together. It took only four hours [...]
> The best part was the instruction manuals. Every step was clearly
> explained. It was easy. The programming part looked especially
> interesting. So simple. Just imagine talking to a computer.
>
> The big thrill came on Saturday when [Rickey] went to his Dad's
> office to use a terminal. When they connected the SDK-80 to the
> teletypewriter they got a printout. That was exciting. Within an
> hour they were talking to the computer, then inventing games.
> They stayed all day. [*Byte*, 14, 1976, p. 21.]

Although the ad stresses the guiding hand of a knowledgeable parent, the principles of microcomputer operations and programming seem to be so irresistibly well explained on the pages of Intel's SDK-80 manuals that

> Now Rickey is building a microcomputer of his own. He may be
> the first kid on his block with his own computer. [Ibid.]

Did Intel really intend to target the youth with its SDK-80 System Development Kit, which was manufactured as a nucleus around which system engineers were to build larger microcomputer systems?

Or, perhaps, it was just a marketing strategy to attract more electronics engineers to its microcomputing technology: you see, Rickey can do it, so why can't you? you are an engineer after all...

Blackmailing parents for the sake of progress

Children as an instrument of persuasion in advertising was one thing; but children as the target customer was another thing all together.

In the late 1970s, the depiction of the microcomputer as child's unique companion at school and home was pivotal to the engineering of mass acceptance of home computing. The young home computer industry understood well a child's insatiable appetite for entertainment and parental obsession with providing the best possible educational environment for the young.

The strategy worked very well and the home computer industry was growing at a rate that surprised even the most optimistic technology observers (the sales of home and personal computers in North America grew from less than 200,000 in 1977 to over 1 million in 1980 and over 6 million in 1984).

Of course, combining entertainment with education is as old as our civilization and that's what educational television for children was (and still is) all about. So, long before children's fascination with computers at home there was the magic of television with plethora of exciting characters, dazzling stories, jubilant songs. Children TV celebrities Micky Mouse, Bugs Bunny, Kermit the Frog, and Daffy Duck, spoke children's language, taught basic concepts of good and evil, peace and violence, tolerance and prejudice, and that joy often meets sadness, without ruffling young emotions too much.

However adorable, children were unable to interact with their fictional TV celebrities at any satisfactory level. They could, of course, wave plastic replicas of E.T. and Cookie Monster in front of the TV screen and sing along with Kermit the Frog, but they could not capture their attention.

Fig. 13. Kids "interacting" with TV characters. Source: DENNIS HALLINAN/ARCHIVE PHOTOS/GETTY IMAGES

With an advent of the home computer, children could not only follow the events in a game or an educational program as they unfolded, but could interact with the characters by communicating with them, controlling their movements, making them stronger or wiser, happy or sad.

The arrival of home and personal computers did not change the children's affection for television in a fundamental way. Both media share important features, such as the display which provides a window into fictional realities where characters do things they usually do in children's stories or games. However, with a computer, a child could follow the events in a game or an educational program as they unfolded.

In the eyes of a younger child, the home computer got the personality of a toy friend, a loyal partner, a challenging opponent, a trustworthy referee.

The home computer industry made sure that in the parents' eyes, their computers represented novel forms of education and a hope for better future.

To get the attention of children, the home computer industry provided games, lots of games. Children found computer game playing irresistible and could now easily encourage their parents to buy a computer for home benefiting from:

- marketing campaigns aimed at middle-class technology-conscious parents, challenging them to set up the home computer-based learning environment, implying that a hesitant parent could deprive their children of the exciting challenges and opportunities that awaited children in engineering, research, and space exploration;

- growing acceptance of microcomputers at schools as a valuable educational aid.

It worked, exactly the way the industry wanted it. Parents seemed to have no choice and started to bring computers home. To see how it was done, let us look at a few examples.

For its early TRS-80 Model I campaign, Radio Shack marketing department, disguised as a parent and an owner of a TRS-80 computer, writes to other education-conscious parents that "his"

> [TRS-80 computer] investment is one of the most significant in value to our family and to the future education of our child that we have ever seen. [From *TRS-80 Microcomputer Catalog* RSC-2, 1978.]

An electronics giant NEC placed an ad on the cover of the June 1978 issue of a Japanese magazine *Gakusyu-Computer*. The add sets up a classical 'I want you to buy me' game between a father–the technology provider–and his son – the enthusiastic youth and NEC's agent of change:

> One day, after his visit to Akihabara [Tokio's renowned consumer electronics district were in 1976, NEC opened its famous micro-computer showroom Bit-Inn], my son told me:
>
> *- Dad, I want a microcomputer kit.*
> *- Oh!? - It's a microcomputer!*
> *- Yes?*
> *- I really need it.*
> *- Then tell me, what can you do with it?*
> *- Dad, it is not what but how. I can program a microcomputer to do what I want and, then, I can run it to do that for me.*
> *- Well...*
> *- OK Dad?*
>
> My son had always enjoyed playing with all sorts of machines and devices. But I would've never imagined that he could put a computer together.

Kids know what they want and they are certainly the masters in the art of getting what they want. Fathers, NEC's ad seemed to urge, do not resist! become the microcomputer's friend, the future of your children is now!

> Fourteen-years-old Takashi Hoshino is a 3rd-year student at Oh-funa Junior High School. He has been operating his microcom-puter since last year.
>
> *- Now, I'm designing a new game. My ideas will turn into a game. Isn't that great?*
>
> Takashi is working on a new game with his friend Hashida. What kind of a game will they create on the Takashi's microcomputer? Would it be better than Star Trek?

Fig. 7. NEC TK80 ad in *Gakusyu-Computer*, June 1978.

Like the players of SpaceWar!, the microkids of the 1970s also wanted to play games and also dreamed of becoming game designers.

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Children, games, and software industry

Educational games were the key to the acceptance of microcomputing in education. The appearance of microcomputers in North American schools, first Apple IIs, Commodore PETs, and TRS-80s, and later small computers from Atari, Commodore, and Texas Instruments, introduced many children to computers. Microcomputing got hot, and the new fad of computer games spread through the school environment with the speed of the flu.
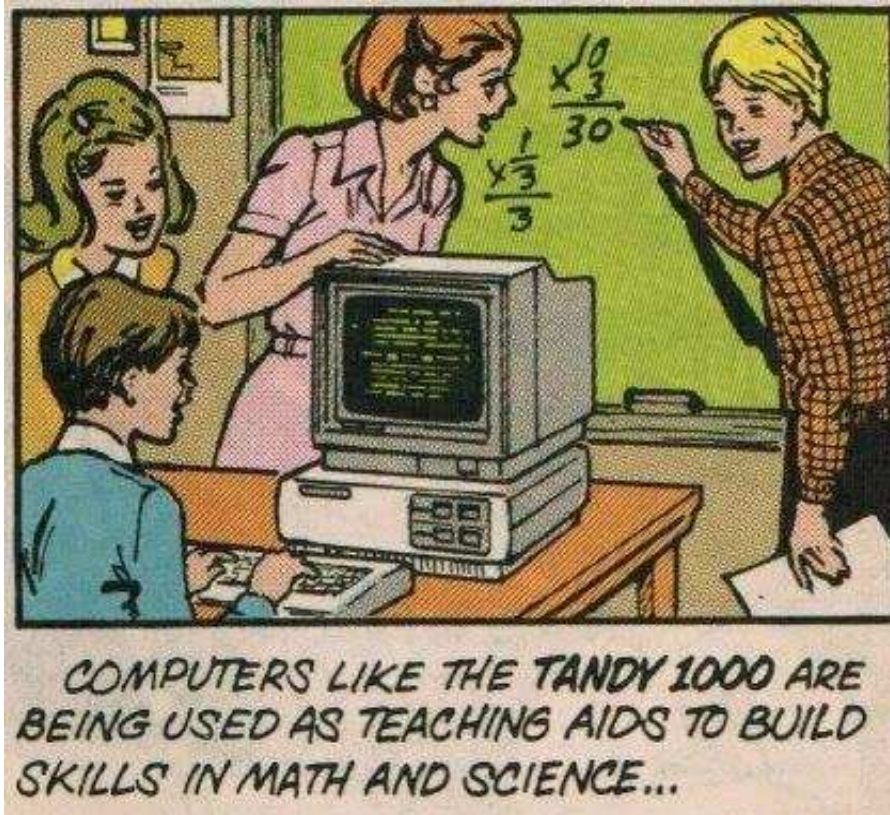

Fig. 18. A Tandy 1000 ad. Source: unknown.

Although in the 1970s and early 1980s fluency in one or more programming languages was perceived by some educators as essential for the development of a modern individual, young children were never good programmers and were frequently discouraged by a long process of making a program listing published in a microcomputer magazine into a working game: a kid was typing program instructions from a magazine for a long time only to be greatly

disappointed when the game failed to work due to a bug hiding on the lines of a published program or introduced by not so careful typing.

Therefore, the home computer industry had to make sure that microcomputer software was easy to install by every teacher and every child who knew how to use a keyboard. Computer manufacturers and software companies offered ready to run educational games on audio cassettes, diskettes, and ROM cartridges. In addition, they offered faster computers with better graphics and game controllers.

A child could load a game by simply inserting a ROM cartridge in a cartridge slot of a computer, he could insert a cassette in a tape recorder connected to a computer and press <ENTER>, or she could insert a floppy diskette into a diskette drive and press <ENTER>.

The gamers, microkids, and whizz-kids

For the microcomputer industry, children were the strategic allies in its conquest to conquer the consumer electronics market: children were the key to redefining the image of a computer as intimidating and confusing.

Advertising put out by microcomputer manufacturers frequently depicted microkids–children of the first decade of microcomputing–operating a microcomputer and surrounded by overwhelmed with joy family.

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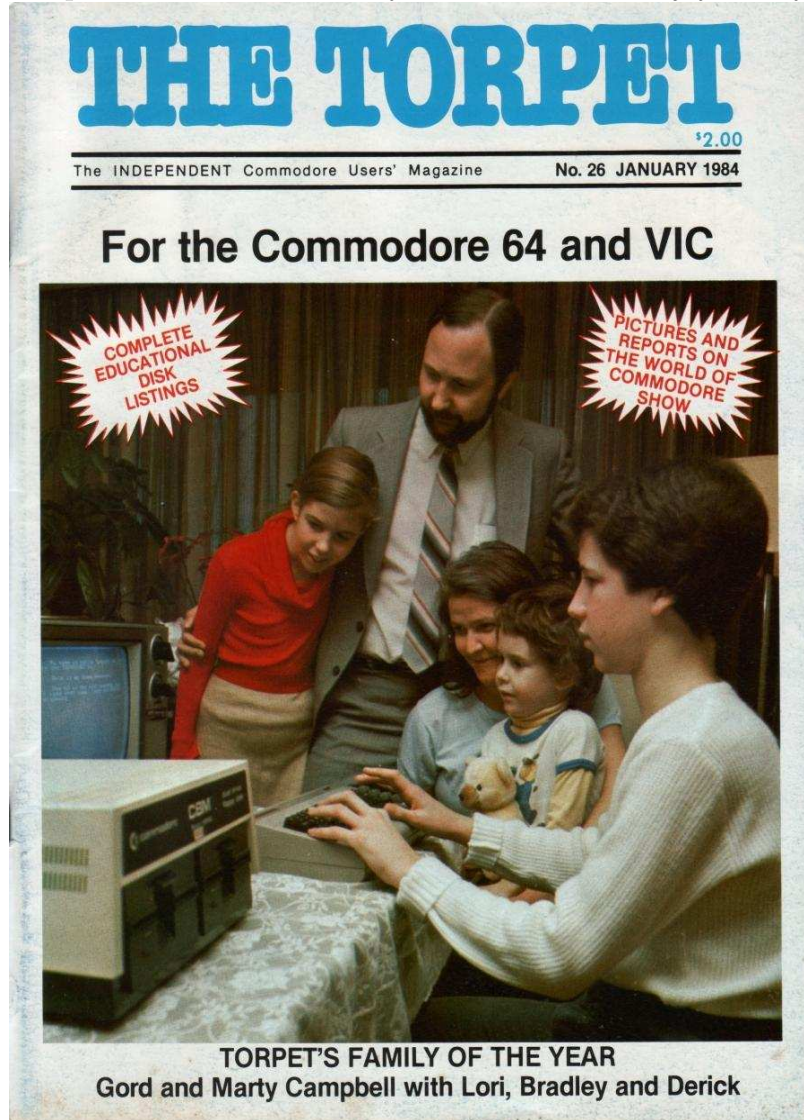
The ads were to condition customers to accept a home computer as world's greatest toy, as useful and easy to operate consumer product, exciting, user friendly, and entertaining.

The industry made sure to supply their computers with software to cover every area of a child's activity in a classroom and home. Computer games were strategic and most abundant, and offered in a range of age and subject categories. (More on this subject in [11, 12]).

In the era of home computing, the gamers came in all age groups but most of them recruited from elementary and high-school-age children. Older gamers were oscillating between the arcade and computer game cultures.

Young gamers could easily be spotted in a crowd since they would never pass peacefully by any sort of a device that resembled a keyboard with a display, be it a bank teller machine or an information terminal in a shopping mall or a museum.

At home, they could spend any time they were allowed to jiggling joysticks and pounding the keyboard while eating a toast or the second bowl of serial whose box was covered with digital celebrities such as Pac-Man.

Fig. 18. A game with a toast.
Source: unknown.

They never tired of playing, always demanded one more chance to get to the next game's level before dinner (if any). Their school backpacks had sometimes more games and gaming literature, then textbooks.

Kids with microcomputers at home had a special status: after all, they could play popular games all the time. Those less fortunate were often found alone practising keyboarding on a piece of cardboard with a keyboard drawn on it, submerged in the future that included a computer of their own in their own rooms.

The microkids frequently knew much more about computers than their teachers or parents. They learned fast how to load game programs into a computer, how to modify them, save and make copies for others on tapes or disks. Some of the kids could easily write their own simple games, successfully modify and adapt programs written in other dialects of BASIC foreign to their micros.

Microkids found microcomputers easy to use and their enthusiasm for small home computers was unrivalled. Perhaps what attracted many of them to the computer was the control and power that they exercised over this exceptional toy. For, microcomputers were frequently those feared by adults machines which they, children, were their masters.

To parents who were still immersed in the desk calculator reality, the computer keyboard was often frustrating, making them uneasy when they tried to figure out why the numeral '1000' could not be entered into a computer as 'l,000' without causing an error, although it was a standard trick to type the letter 'l' instead of the digit '1' on a typewriter, and computers supposed to be 'intelligent'. For a child a keyboard was just a way to communicate with game characters, neither simple nor difficult, this was the way one talked to E.T. A joystick with a fire button was just the way to instruct Pac-Man and to exercise the power over a virtual universe.

A KID'S VIEW OF ADULTS AND COMPUTERS

by Luke Meade
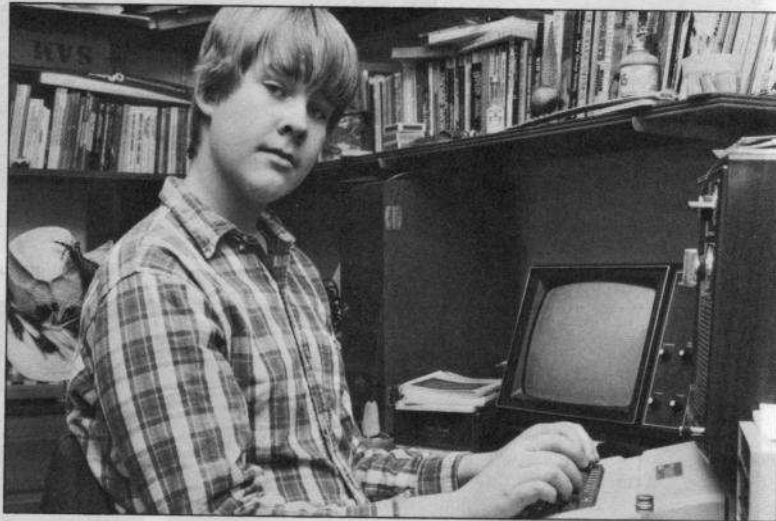
Our family has a computer.

Actually, I should say *I* have a computer. My father obtained it, but I use it more than anyone else in the house. I have several computer-using friends, and it seems to be the case in most families that the children are more adept with the machine than their parents are.

In my view, adults relate strangely to computers. They'll approach the machine warily, and if you try to explain the basics of its operation they'll nod and smile in total confusion or ask at least one question for every sentence you utter. When my parents' party guests ask to see the computer, I comply by showing them the machine and running a program for them.

Luke Meade is a student at Rippowam-Cisqua School as of this writing. He is fourteen years old.

"Now," I'll say, " 'run' tells the computer to execute a program. So when I type 'run' followed by a program name, the computer enters the program into its memory and then executes it. See?"

"Um . . ." comes the reply.

"It's a very practical machine, the Apple II Plus. For instance, I can keep track of all my school grades in this Notebook program, which I also use as a limited word processor."

Usually when they hear the dread term "word processor," the guests stop trying to understand what I'm talking about. Sometimes they'll just say, "Oh?"

"Yes," I'll say, "and I can also keep track of my record, book and comics collections on the same disk. Then I can use the computer to check my algebra homework and keep tabs on my allowance."

Fig. 19. A microkid on parents. Source: S. Ditela (ed), *Digital Deli*, p. 322.

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Microkids knew what they wanted and in the end they got what they wanted as the rest of us rushed to populate home and school environments with millions of small microcomputers, each of them ready to play hundreds of games.

By 1979, there were over 43,000 Apple IIs and over 100,000 TRS- 80 computers. Introduced in 1980, Sinclair's tiny ZX80 computer sold in excess of 100,000 machines almost as many as the 1980 Apple II installed base (121,000 machines). Sinclair's next machine ZX81 and its U.S. refinement TS1000 sold over 500,000 by the end of August 1982, nearly as many as Commodore's VIC-20s (by the end of 1982, there were over 800,000 VIC-20s world-wide). VIC-20s sales reached the one million mark in early 1983, when Commodore was shipping its small computer at the rate of 100,000 units a month. In the same year, two other manufacturers joined the one million club: both Texas Instruments and Apple Computer shipped over one million of their TI-99/4A and Apple II computers. In 1984, there were over 2 million Apple IIs and, perhaps, even more Commodore 64s, arguably the world's most successful small computers.

In the era of home computing, perhaps on reflection that this wasn't the first time the society had been invaded by a new technology they did not understand, parents were buying computers for their children, they did sponsor computer clubs at schools and computer summer camps. They did seat with their children in front of a home computer. Focused on screen and keyboard, the barriers between an adult and a child, between a teacher and a student were collapsing: these were frequently children who helped their parents to start the journey into personal computing, these were frequently students who were the partners in setting up early computer education programs and computer clubs in their schools.

In the early 1980s, the microkids became highly skilled and knowledgeable whizz-kids. Like shovelling the snow in winter, racking the leaves in the fall, or delivering a local newspaper, almost every neighbourhood and community had a whizz kid on the block who could install software, connect a printer, a modem, or would advice a distressed neighbour to check the power bar switch first before declaring a computer brain dead.

Fig. 20. Whiz kid on the cover of *Mime* magazine, May 3, 1982.

What a gamer really needs

Focusing on game playing children was a good starting point for the budding home computer industry. However, one of the main obstacles in implementing this strategy was the price of microcomputers.

At the end of 1970s, a microcomputer for home was still an expensive proposal: the Apple II+ retailed at $1,195, Atari 800 at $1,080, Texas Instruments TI- 99/4 was priced at $1,150, and Radio Shack TRS-80 Model I was sold for $500. As home entertainment systems, they were prohibitively expensive in comparison with the popular Atari VCS (retailed at less than $200). By 1979, Apple Computers sold an insignificant number of 43,270 Apple II's in comparison with 400,000 Video Computer Systems sold by Atari.

To make home computing affordable and attractive to the videogame crowds, home computers mot only had to be less expensive but also had to have the game playing, graphics, and sound capabilities of a videogame system. In short, to win the hearts of gaming community, home computers had to be more like game consoles: inexpensive, small and easy to operate, hooked-up to a TV set for the display, and, of course, supported by a large selection of games on easy to use and popular ROM cartridges.

One company in particular was determined to make such a computer a reality. In 1980 Commodore Business Machines introduced its VIC-20 home computer – a fully-featured color computer in a keyboard. By spring 1981, the Commodore VIC-20 could be purchased in large department stores (such as K-Mart, Sears, and Toys-R-Us), from computer dealers and selected electronics stores, for the strategically adjusted low price of $299.95. VIC-20 was one of the best-selling computers of all times.

Computer entertainment made home computing what it was – BIG; ironically, these were also the games that would eventually become the main reason for the industry's demise.

To stay afloat in this increasingly demanding business, the home computer manufacturers were constantly engaged in finding ways to deal with two seemingly unrecognizable forces:

- the consumers' demand for the technological innovations;

- the market pressure to keep the prices of home computer systems low.

On the one hand, gamers' unsatisfied hunger for more weapon power and bigger explosions, for faster racing cars and more realistic backgrounds and terrains, their constant demand for meaner and more intelligent invaders from outer space, for more realistic representation of game characters, required more and more computing power and storage, better graphics and sound, as well as more sophisticated software tools for the production of new generation of computer games. By neglecting these demands, the home computer would be in danger of becoming nothing more than an electronic curiosity, an unfortunate purchase destined for an immediate storage on a shelf of electronic oddities while still in its original styrophome packaging and cardboard box.

On the other hand, the strength of the videogame industry and the overcrowding in the home computer market, that burst into the home computer war, resulted in the marketing doctrine that a computer for home, and especially the first home computer, should be inexpensive and priced at the level of a videogame console.

Until 1983, small home computers from Commodore, Sinclair Research, and other manufacturers were successfully showcased as top game playing machines all over the world. The outlook for further growth and prosperity for such companies seemed as bright as ever. But in the end, the rags-to-riches journey was all but over as the task to continuously deliver an inexpensive, small but capable computer system for home to rival both the videogame consoles and the desk-top personal computers proved to be as feasible as finding the philosopher's stone.

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