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At the Push of a Button: the Utopian futures of computer-aided everyday life

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Abstract

The introduction of the electronic computer brought with it a utopian vision of how everyday life would be affected for the better. Popular culture from the 1950s to the 1970s was awash with visions of a healthier, wealthier society, enabled by computers. We would work three hours a day, three days a week, and eat meals planned by computer, ordered by push button and cooked within seconds.

This paper will showcase the ways in which computers were presented as an unproblematic solution to so many ills. While many of the future forecasts did in fact appear, others, evidently, did not.

Introduction

In his 2009 book *'Future: A Recent History'*, Lawrence Samuel wrote:

'Concerns and fears about the future not surprisingly spark a greater demand for futurism, thus accounting for the field's popularity during the economically depressed 1930s, the paranoid 1950s, and the self-loathing 1970s.'¹

Interested as I am in the design history of the electronic computer, the period of the 'paranoid 1950s' is the primary reference point of this paper, as it was the decade that saw the computer move out of the research laboratory and into the commercial arena.

Future Forecasts

It had been a long-standing and widely agreed forecast of futurism that technology was going to make life much easier and more enjoyable by giving us access to the one finite resource we were finding so difficult to acquire – time. In the office, instead of filling out paperwork or adding up numbers, computers would do our week's work in minutes. In the home, computers would control every aspect of our environment and take care of all the chores. By freeing us from the mundanity of everyday existence, quality time would be ours for the taking – more time to relax, be with our families and friends, to enjoy life itself. Yet predictions about exactly what forms such technology would take in order to free up this time were many and varied.

The advantages of computer technology in the workplace were perhaps fairly straightforward to predict. It was 'LEO', the first electronic computer designed specifically for business applications, which pointed the way. J. Lyons & Co., a household name in food manufacturing and retailing, saw the potential of early

experimental computers for business use and, in an unprecedented move, decided to expand their activities to include the manufacture of commercial computers. The company substantially financed the development of the Electronic Delay Storage Automatic Computer (EDSAC) built at the University of Cambridge in 1949 and then adapted this design to create the Lyons Electronic Office (LEO) Mark 1, able to calculate the required ingredients for the following night's production of goods, plan the delivery schedules and handle the associated invoicing as well as keeping track of the company's accounts and payroll functions. It became clear that the ability of the computer to perform complex calculations such as financial modeling in the blink of an eye would radicalize many mundane clerical office tasks. Its ability to accurately store, retrieve and compare large amounts of information would obviously revolutionize stock control, the ordering of goods and supply of components to production lines, increasing efficiency all the way.

In the running of the home, with so many physical as opposed to administrative tasks to perform, the role and benefits of the computer were perhaps a little more difficult to pinpoint, but it was also the arena in which computers promised to most directly affect our day to day existence. Perhaps understandably given the lack of precedent, many predictions centred on bringing the kind of automation found in the factory into the domestic space. Fred McNabb's illustrations were some of many examples of future homes featuring push-button, automated conveyor belt cookery, digitally controlled dishwashing and labour-free laundering. [The fact that these illustrations were for a ball bearing manufacturer was perhaps a sobering reminder that no matter how futuristic the product, the moving parts required for a labour-free life would involve ball bearings somewhere along the line.]

From the mid 1950s, public exposure to detailed concepts of the future home were rife, from the 1956 Ideal Home Exhibition's 'House of the Future' designed by architects Alison and Peter Smithson – a prefabricated visionary habitat that 'developed the streamlined science fiction aesthetic that so many thought the year 2000 would have'² – through to ...

The 'Monsanto House of the Future' at Disneyland. This project, which began in 1953 when Monsanto (yes, they of the genetically modified tomato fame) sponsored a research project at MIT to explore the possible uses of plastics within the home. The preliminary designs were completed by MIT architects Richard Hamilton, Marvin Goody and Ernest Kirwan in 1954, and an article on the project appeared in *Popular Science* magazine in April 1956. In reality this house design was more about the potential hygiene and better living standards offered by new materials rather than the time-saving benefits of future technology per se, but, as Dag Spicer has noted, it was quite often the time-saving potential of technology in the (usually) American kitchen that was the focus of many futurists,³ and that was certainly a focus here. Built in 1957, the prototype

house was a hugely popular attraction, and if the promotional film⁴ is to be believed, prompted many to dream of living in a plastic house...

Dreaming of the future became a common theme within such futurism. Around the same time as the Monsanto House was being finalized, the renowned car stylist and Vice President of General Motors, Harley Earl, developed a touring show of the latest automobile models and concept cars called 'Motorama'. As part of this show, and perhaps as an opportunistic move to sell to the disenfranchised wives not sharing the same level of interest in cars as their husbands, the appliance manufacturer and GM subsidiary, Frigidaire, developed the 'Kitchen of the Future'. This kitchen featured heavily in GM's 1956 promotional film 'Design for Dreaming'⁵, where a woman dreams of a Prince Charming who comes into her bedroom and whisks her away to the Motorama car show (I kid you not!). Like Cinderella going to the ball in her magical new gown, she stares in rapture at the latest cars, only for Prince Charming to dump her half way round the show into a fantastic futuristic kitchen, where she explores the time-saving computer-controlled appliances with great delight. (I especially like the oven that not only bakes the perfect cake, but also miraculously puts candles on it!) ...

In a similar vein, computer-controlled, push-button technology was the central focus of the 'Miracle Kitchen' of 1956. A joint venture between the electronics company RCA and the appliance manufacturer Whirlpool, The 'Miracle Kitchen' was a brightly coloured, mocked-up, hand operated and remotely controlled display, which presented 'a push-button world of cooking, cleaning and homemaking'.⁶ It featured a centralized 'Brain' apparently controlling a TV, video, food inventory, a 'magic meal maker' utilising 'electronic cooking', a robot vacuum cleaner/floor washer and an automated dishwasher that followed tracks laid under the floor to bring clean dishes to the table and take dirty plates away before washing them and putting them away. The Miracle Kitchen attracted a lot of media attention, and was one of the three concept kitchens featured in the 1959 American National Exhibition, the US Trade and Cultural Fair in Moscow that sparked the infamous Nixon/Kruschchev 'Kitchen Debate' about the relative virtues of capitalism vs communism.⁷

By the end of the 1950s, it appears that the potential role of computer-aided technology in the kitchen to make life easier was a well-understood principle, and one that was presented in promotional films as completely unproblematic. The potential for disaster when technology went wrong was never mentioned, although in the early 1960s, the Hanna-Barbera cartoon series *The Jetsons*⁸ took every opportunity to point out the pitfalls of such reliance on technology. In the very first episode, the push-button automatic meal maker (called the Foodarackasackle) constantly produces the wrong food (or turns on the Hi-Fi instead), overcooks or undercooks the food and then finally explodes, leading to the family replacing it with an outdated robot maid. By the second episode, an automatic meal maker operated by a punch-card of the type used by IBM to

program old mainframes sends a pizza flying across the room, and in the third episode, a push-button breakfast bar produces uncooked frozen food.

One of the other dystopian constants of *The Jetsons* was the theme of the working day being reduced to a few hours pushing a button. In the first episode, George Jetson, who works as a 'Digital Index Operator' (or button pusher) for Spacely Space Sprockets comes home one evening complaining of a terrible day. His wife Jane asks 'Hard day at the button dear?', and he answers 'Oh brutal, brutal! I had to push the button on and off 5 times. That Spacely is a slave driver!'⁹ In a later episode, he says 'Boy, oh boy am I glad its Wednesday. These three day weeks are murder!'¹⁰

It is interesting that in keeping with other fora of futurism, technical developments were evidently easier to predict than social ones. In the case of *The Jetsons*, it might have been possibly because social changes would be difficult to explain in a cartoon, or because the comic effect arises from putting the unusual (the new technology) in a familiar (the traditional social) setting. In Orbit city, where *The Jetsons* was set, the nuclear family with a working husband and stay at home housewife was the norm, and there was never any blurring of the boundary between the workplace and the home responsible for so many extra working hours today – workers still travelled to the factory or the office each day, albeit in a flying saucer. The lack of foresight regarding social change has been, though, a major flaw in futurism and one that has diminished its reputation significantly. As Samuel Lawrence observed, 'The bias towards predicting technological versus social progress has been and continues to be the Achilles' heel of futurism, the next wave of gadgets and gizmos easier to see coming than a cultural tsunami.'¹¹

Although home computers were still a far-flung fantasy, by the middle of the 1960s, electronic computing had been considerably reduced in size and complexity, resulting in minicomputers replacing mainframe computers in the workplace. A computer in the home was now at least a physical possibility, and early adopters were keen to take advantages of the benefits computer control could offer.

In 1966, a computer systems engineer at Westinghouse Electric Co., Jim Sutherland used obsolete computer parts to build and install an 'Electronic Computing Home Operator' (ECHO IV) in his house in Pittsburgh, Pennsylvania. In an article in *Popular Mechanics* in 1968, Glenn Infield wrote:

Jim Sutherland's home-built computer is not very sophisticated by today's standards – or tomorrow's. But as it takes on more tedious household tasks, it's proving what can be expected of the future home computer. ¹²

The Sutherlands used ECHO IV for standard computing procedures such as bookkeeping, budgeting, household accounting and calculating income tax. They also used it to schedule events up to a year ahead (no more excuses for forgetting birthdays or anniversaries), to synchronise and automatically reset numerous digital clock displays around the house, and provide automatic temperature and

humidity control (as featured in the Monsanto House of the Future). It regulated the hours of TV viewing by the children, who were expected instead to use ECHO to program and play electronic games.

Jim's wife, Ruth, believed the kitchen would be where the computer would really perform well and save time in routine jobs:

'Recipes will be increased or decreased proportionately to provide any number of servings, with the shopping lists printed out automatically... To be really effective, the computer must know how much and what kind of food is on hand so allowances can be made in shopping lists'. According to the article, Jim's plans for ECHO included modifying the kitchen cabinets to automatically take an inventory of food and writing more complex programs to enable the computer to 'generate balanced menus with specific calorie and nutrient content, from which the family can select their meals in advance.'¹³

The computer-aided selection of suitable meals was a dominant feature of the future forecast film *1999 A.D.*, produced in 1967 by the Philco-Ford Corporation. The film forecast how we might live, in honeycomb-shaped, modular architecture where everything was controlled by the computer, which is 'secretary, librarian, banker, teacher, medical technician, bridge partner and all-round servant in this house of tomorrow'.¹⁴ It depicted a day in the life of the Shaw family as the father worked at a push-button electronic screen/desk, the son studied most of the week on his own in his room by watching a huge wall flat-screen showing a computer-determined series of educational programmes and answering questions by push-button, and the housewife pushed buttons to select menus and operate automatic meal makers that produced whole meals in a matter of minutes. ...

It was this recurring theme of computer aided menu selection that was the driver behind the spoof product, the Honeywell Kitchen Computer. Based on a real 16-bit minicomputer advertised (but not at that point made) by Honeywell, the Kitchen Computer was devised by the upmarket department store Neiman Marcus as a publicity stunt in their Christmas Catalogue of 1969. Despite its inherent pointlessness (it was advertised at the equivalent price of a small house and would take two weeks to learn to program), the product was picked up by mainstream press and reprinted widely, including in *Life* magazine. This had quite significant impact as the Vice-President of the computer manufacturers Digital Equipment Corporation (DEC) cited the product as having inspired a series of thoughts as to the possibilities of home computing, and consequently affected the direction of the company's research and development agenda.¹⁵

Conclusions

It seems clear that the advent of the electronic computer represented no kind of starting point for futurism's adoption of technology into the home and consequent predictions of time saved, as such predictions had been in existence for many years. What the computer did do, though, was to accelerate and expand

the remit of such technological forecasts to include the punch-card automation of the multitude of mental process of organization, planning and administration on top of the push-button automation of the physical processes that would take place in the day to day running of the family home. The information handling involved in recipe selection, inventory control and automated cookery seemed suddenly to be a step closer, and a luxurious life of leisure played out within a smart home that little bit nearer.

It also seems that as time passed, many of the predictions made for technology in the home stayed fairly consistent while technology began to catch up, and in many cases the dreams of futurists past were realized. Elements of the Philco-Ford film, *1999 A.D.*, for example, forecast developments that early adopters of home computers had made significant inroads into putting in place a year earlier.

One constant of the futurism forecasts of the 1960s appears that it would remain to be the pushing of dedicated buttons that would activate the computer control or automation of chores in the home, as it had been for the activation of mechanical devices in earlier forecasts. It is true that well into the 1960s and even into the 1970s, certain computers could be programmed through the setting of switches and pushing of buttons rather than by keying in commands via a keyboard, yet teletype printers and remote computer terminals that used standard qwerty keyboards had been the main interface with the majority of computers since the late 1940s and early 1950s, as the use of punch cards and punch tape went into decline. It seems that the idea that we would bother to type in commands rather than push a single button was too far fetched. Of course, since the dominance of the computer mouse and the graphical user interface, the push-button has regained traction, albeit in virtual rather than physical form.

As alluded to at the start of this paper, predictions of a shorter working week and an easier life for society enabled by such technologies predate the emergence of the electronic computer by some years. After all, the computer was merely another in a long line of technological inventions that radically changed society throughout the Agricultural and Industrial Revolutions that preceded it. At the beginning of the Great Depression, the famous and highly influential economist, John Maynard Keynes, wrote in 1930 an optimistic essay titled 'Economic Possibilities for our Grandchildren.' In his view, the economic pessimism being experienced at that time was merely a blip - the result of:

'the growing-pains of over-rapid changes, from the painfulness of readjustment between one economic period and another. The increase of technical efficiency has been taking place faster than we can deal with the problem of labour absorption; the improvement in the standard of life has been a little too quick.'¹⁶

Keynes believed that as society would inevitably benefit from further developments in technology of the kind that had fuelled the Industrial Revolution so powerfully, our standard of life would continue to improve at an ever increasing rate. We would, of course, undergo a further periods of suffering from 'technological unemployment' but this would be 'only a temporary phase of

maladjustment'. He predicted that within the space of one century, i.e. by 2030, mankind would have solved 'the economic problem' he had been facing for all of his existence – the struggle for subsistence – and be confronted with an entirely new problem.

'For the first time since his creation man will be faced with his real, his permanent problem – how to use his freedom from pressing economic cares, how to occupy the leisure, which science and compound interest will have won for him, to live wisely and agreeably and well.'¹⁷

Keynes assumed that although there would be some people for whom material wealth would remain a driving force, most people would be happy to have enough and then work towards helping others, as 'everybody will need to do some work if he is to be contented. ... we shall endeavor to ... make what work there is still to be done as widely shared as possible. Three-hour shifts or a fifteen-hour week.'¹⁸

Similar predictions were made in 1933 by the evolutionary biologist and humanist, Julian Huxley. He was convinced that 'Fifty years hence ... Labour-saving machinery will have so effectively saved labour that four-and-a-half hours will be the average working day' and that this would naturally result in more leisure time. While seeing this as a godsend, he also worried that much more leisure time would present serious issues: "[by 1985] it will have been realized that the problem of leisure is not merely one of finding ways in which not to work," but "the problem of finding ways of working which people shall enjoy."¹⁹ Like others of the time, Huxley assumed the drive to work all hours would disappear. Also looking fifty years forwards, the Editor of *Good Housekeeping*, William Bigelow, shared that he had heard from 'the dreamers' that just ten hours of work a week would allow anyone and everyone to 'get along passably.'²⁰

Why did Keynes' (and others') views turn out to be so wide of the mark? Well, his conclusions were drawn on the assumptions that there would be 'no important wars and no important increase in population', both of which did take place. In addition, he thought that 'When the accumulation of wealth is no longer of high social importance, there will be great changes in the code of morals.'²¹ But people don't seem to have settled for a 'passable' existence. It appears that mankind may not be quite as virtuous as he thought.

Perhaps the technological utopias of a life of leisure long predicted for society at large are unachievable without an underlying change in mankind's propensity for individual gain. Perhaps the lack of such optimistic predictions today is a reflection that we now understand that requirement, and its unlikelihood.

Biography

Paul Atkinson is Professor of Design & Design History at Sheffield Hallam University, UK, and author of *Computer* (Reaktion, 2010) and *Delete: A Design History of Computer Vapourware* (Bloomsbury, 2013).

Notes

¹ Lawrence R. Samuel, *Future: A Recent History*, University of Texas Press, Texas, 2009, p. 2.

² Jane Alison, Marie-Ange Brayer, Frédéric Migayrov and Neil Spiller (Eds), *Future City*, Thames and Hudson, London, 2006, p. 53.

³ Dag Spicer, 'If You Can't Stand the Coding, Stay Out of the Kitchen: Three Chapters in the History of Home Automation', *Dr. Dobb's Journal*, August 12, 2000. Available online at <http://www.drdoobs.com/architecture-and-design/if-you-cant-stand-the-coding-stay-out-of/184404040> last accessed 6 July 2015.

⁴ Monsanto Chemical Company Plastics Division, *The Monsanto House of the Future* Promotional film, 1957. Available online at <https://www.youtube.com/watch?v=-8SvTjpxo9Q> last accessed 3 July 2015.

⁵ General Motors, *Design for Dreaming*, promotional film, 1956. Available online at <https://www.youtube.com/watch?v=bnQ-fzzXh0k> last accessed 3 July 2015.

⁶ Commentary in 'The RCA~Whirlpool Miracle Kitchen', promotional film, 1957. Available online at <https://www.youtube.com/watch?v=Vui2CSEwOxQ> last accessed 3 July 2015.

⁷ Lawrence R. Samuel, *Op. Cit.*, p. 80.

⁸ Hanna-Barbera, *The Jetsons*, first broadcast 1962.

⁹ 'Rosy the Robot', *The Jetsons*, series 1 episode 1, first broadcast 23 September 1962.

¹⁰ 'The Flying Suit', *The Jetsons*, series 1 episode 7, first broadcast 4 November 1962.

¹¹ Lawrence R. Samuel, *Op. Cit.*, p. 6.

¹² Glenn Infield, 'A Computer in the Basement', *Popular Mechanics*, April 1968, p. 77.

¹³ *Ibid.*, p. 79/209.

¹⁴ Philco-Ford Corporation, *1999 A.D.*, commentary. Available online at <https://www.youtube.com/watch?v=88sgyfGFTKo> last accessed 6 July 2015.

¹⁵ Paul Atkinson, The Curious Case of the Kitchen Computer: Products and Non-Products in Design History, *Journal of Design History*, 2010. 23(2): 173.

¹⁶ John Maynard Keynes, 'Economic Possibilities for our Grandchildren' in *Essays of Persuasion*, Macmillan and Co, London, 1931, pp. 358-373. Available online at http://www.gutenberg.ca/ebooks/keynes-essaysinpersuasion/keynes-essaysinpersuasion-00-h.html#Economic_Possibilities last accessed 30 June 2015.

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ Julian Huxley, 'In Our Stars,' *Forum*, April 1933, pp. 242-44, cited in Lawrence R. Samuel, *Op. Cit.*, p. 27-28.

²⁰ William Fredrick Bigelow, 'Day after Tomorrow, in *Good Housekeeping*, February 1935, p. 4, cited in Lawrence R. Samuel, *Op. Cit.*, p. 29.

²¹ John Maynard Keynes, *Op. Cit.*