Anthony Galczak

Dr. Fred Turner / Dan Muise

COMM 120W

April 21, 2021

The Memex and its' Potential Impact on 1950s Women

If Vannevar Bush's Memex had been built in 1950s, it would have reinforced the oppression of women. The goal of this paper is to show the plausibility of this thesis. I will dive into how we go from hardware construction to oppression. The Memex is a powerful device that can contain conversations, books, records (Bush); a true panacea of knowledge and conversational memory. It isn't a stretch to believe that this device would be popular. However, with its' complexity, the device would require many engineers and programmers supporting it. The programmers, you may call them "computers", would be a large majority women. The occupational culture after World War II was transitioning back to its' pre-war narrow-minded attitudes. Women were being pushed, sometimes forcibly, out of their technical roles back into the home. This implies directly that the primary users of the Memex would be powerful men. The role of computer, considered a relatively inferior or second-rate position compared to engineer or operator, was almost exclusively done by women (Light 464). While having such a gender bias may not be ideal in any industry, it might not lead directly to the oppression of women. However, women in industry were often snubbed for their contributions and efforts (Hicks 61), especially in computing. Therefore, it is likely that the woman "computers" harnessing this powerful Memex device would be treated unjustly and not appropriately compensated (Hicks 60,102) or celebrated.

A relevant first question is whether the newly created Memex would be successful and widely adopted. If we look to the inventions of the era, we can point to the significance of the rolodex storing addresses, phone numbers, and names for business contacts. The rolodex was a business icon and widely adopted by everyone from the intern to the President of the company. The Memex would hold orders of magnitude more information than a simple rolodex, e.g. “all of their books, records, and communications”. The power of this device is likely understated. Imagine a 1950s lawyer having the ability to instruct his assistant to retrieve any correspondence and relevant research for a case within minutes. If we pause our foray into 1950s and think about modern times; cell phones, hindsight makes it even more obvious that this device would be popular. We can then safely say that this device would catch on and at least be adopted by executives and professionals that could afford such grandiose technology.

The Memex would be a sophisticated piece of hardware for the 1950s. However, going off from what we now know about modern databases and computers, the software would be at least as sophisticated. From my 4 years’ experience in a military research lab, I know building the machine is a small part of the life-cycle of a large piece of technology. Maintenance and operation of the software take significantly more funding and effort than the design and construction of most fancy new devices. This leads us to the logical conclusion that the Memex would absolutely have to have an army of programmers behind it. We know from the Light text, that the meaning of “computer” and “programmer” were much closer than they are today. This potential for interchangeability means that our 1950s “computers” would be programming and

operating the Memex as opposed to calculating artillery trajectories or performing numerical integration, as they did during the war effort. This analysis leads naturally into a discussion about the gender bias for the job of “computer”.

The role of “computer” was almost exclusively a task for women in 1950s America (Light 464). The aptly named Light text, “When Computers Were Women”, introduced us to women computers performing calculus and advanced math to help WWII efforts. Even more relevant is that once machines were introduced to the military-industrial complex, such as the ENIAC, women were the ones operating these machines day-to-day. This implies that women weren’t just “computers”, but they were ultimately the programmers of the first physical computers. Further, Adele Goldstine was the foremost authority on programming the ENIAC as she was the defacto leader of the WAC women “computers”. A significant quote from Betty Jennings, an early computer working on the ENIAC: “We could diagnose troubles almost down to the individual vacuum tube. Since we knew both the application and the machine, we learned to diagnose troubles as well as, if not better than, the engineer.” Womens’ expertise in “early software” was likely far ahead most men working with physical computers. This gender bias in programming isn’t only applicable to the war-time and immediate post-war effort. Margaret Hamilton, a woman and notorious badass, was the lead software engineer of the entire Apollo project in the ‘60s. She received the Presidential Medal of Freedom in 2016. Programming is only recently seen as a male-dominated field and was quite the opposite in the ‘50s and ‘60s. We would see the same gender bias for the “operators” of the Memex device as we saw for the ENIAC.

World War enabled women to support the troops abroad in a variety of previously male-dominated fields. Rosie the Riveter, as an example, is classic propaganda from 1940s war-time America that showcases a strong, working woman riveting bolts onto an airplane. Highly misogynistic and discriminatory practices, such as the marriage bar, were loosened during this period to allow women to enter the workforce. However, as American society transitioned out of the grueling war-time effort, women were pushed out of their old industrial roles into more domestic roles (Light 480). Men and society were comfortable seeing women in assisting or supplementary roles, but not typically in leadership or particularly ambitious roles. This was exacerbated by severe gender biases in job title alone. Men who worked on early software were called “operators”, but women were allocated the less technical title of “computer”. This leads me to believe that the governing authority of the Memex would be a professional man and its’ operator a woman. It is likely the only ones with enough resources to use the Memex at first would be high-ranking men in the military-industrial complex and business tycoons.

The role that women played in computing and technology was often diminished or completely dismissed in this era. Most of the work with early computers would have floundered and sputtered without the help of women computers. Any media coverage of the ENIAC computer excluded women from photographs or gave any mention of the highly technical work that they performed (Light 475). This seems contradictory towards the reality, which is that Adele Goldstine wrote the manual on how to operate the ENIAC (Light 478). The task of programming was viewed as merely clerical; however it proved to be more complex than the

hardware (Light 470). The dismissal of women in computing being non-technical and viewed at best supplementary towards the efforts fits the dictionary definition of oppression ("unjust or cruel exercise of authority or power"). This exercise of authority would primarily be perpetrated by the military-industrial complex and industrial society as a whole. This oppression continued well into the 1950s in the US and in Britain. As an example, pay was explicitly unequal for civil service women in Britain until 1961 (Hicks 60). Women often performed higher level work than what their title implied as they were considered temporary (Hicks 61, 69).

In conclusion, I will summarize key points and show how they tie in together to prove the main thesis. We analyzed the Memex and concluded that it would be a powerful and popular device. With its' power, the Memex would have its' own labor force. This labor force would consist of many technical people. Since assistants and computers were exclusively women professions, the operators of the Memex would be women. Women were forced out of any powerful or high-ranking roles after World War II and this would leave men to be the primary users of the Memex. Womens' technical role in computing was disproportionately diminished compared to the engineers who built the devices. Unfortunately, this led to women being oppressed as "lowly computers". This sort of mistreatment would continue at an even greater scale with the introduction of the Memex. Through this chain of logical conclusions, justified by our readings, I have shown that the Memex would reinforce the oppression of women in the 1950s.

Works Cited

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Margaret Hamilton and her Apollo mission code