GENDER AND CIRCULATIONS IN EUROPE

Women and ICT: reflecting on European circulations

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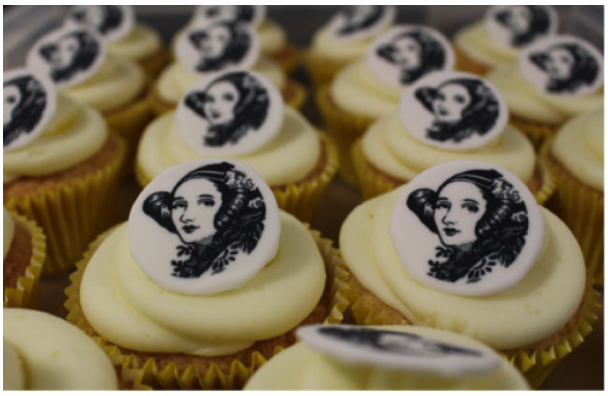
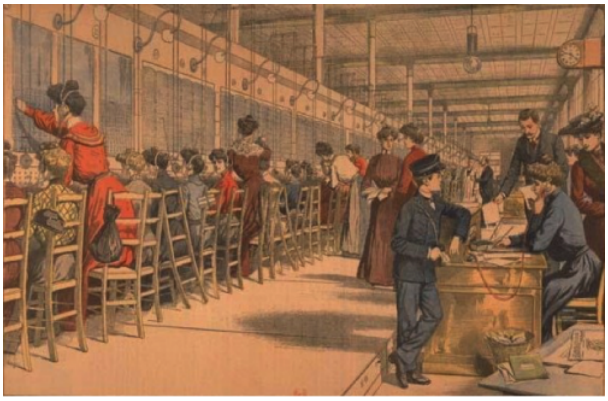
ABSTRACT

From the beginnings of the telegraph to the development of computing, women participated as producers, users, consumers, and an ideal or real audience in the circulation of information through Europe, and took part in the European history of information and communications technology (ICT). Reflecting on their European circulation and trajectories remains difficult due to a historiography that is still being built, as well as a lack of comparative studies providing accounts of the diverse paces at which these technologies developed, both in relation to one another and among European countries. Despite these gaps, gendered particularities emerge, including the gradual process that rendered women *invisible*—with the exception of a few figures—in their collective participation within ICT.



Cupcakes for the Ada Lovelace Wikipedia events (University of Oxford's IT Services, Bodleian Libraries and Wikimedia UK), October 2015, photograph by Ylvaprytz. Source : Wikimedia Commons



Les demoiselles du téléphone, Le Petit Journal, 17 April 1904. Source : Gallica

Ada Augusta Byron (1815-1852), better known as Ada Lovelace, is one of the women inscribed in the European and global pantheon of information communications technology (ICT), as demonstrated by the choice to name a programming language Ada, the *Ada Lovelace Awards* of the *Association for Women in Computing*, and the celebration of the bicentennial of her birth in 2015.

After collaborating with the British mathematician and computing pioneer Charles Babbage (1791-1871), she went down in history as the "first programmer," at a time when computing did not yet exist as such. She was the first to use mathematical algorithms in connection with a machine, making it the ancestor of the computer. The daughter of Lord Byron thus became one of the rare female figures to emerge within the prehistory and history of ICT, which are largely dominated by male actors. Other European women nevertheless punctuated the history of ICT. The Vienna-born actress and scientist Hedy Lamarr (1914-2000) contributed, with George Antheil (1900-1959) in 1941, to developing a transmission system applicable to radio-controlled torpedos; the French computer scientist Alice Recoque (born 1929) was responsible during the 1970s for the Mitra 15 mini-computer project at the Compagnie internationale pour l'informatique; the Briton Joan Clarke (1917-1996), who was close to Alan Turing (1912-1954), was a figure in cryptology, and Karen Spärck Jones (1935-2007), a professor at the University of Cambridge until 2002, was celebrated for her contributions to the field of artificial intelligence.

These female scientists were nevertheless the exception. Women were often confined to secondary or lightly-regarded tasks, such as the telegraph, for which women were employed before the 1920s on domestic lines, instead of the oceanic lines that were considered more complex.

One could even speak of a relative and gradual process by which women were *rendered invisible*, notably in IT. This assessment can be seen in Great Britain, for instance with the Rothamsted Statistics Department. From the 1920s to the 1990s, two hundred women served as assistant or technicians, tasked with processing agricultural data. Little is know about them, and it is difficult to say whether their invisibility in both history and the historiography is due to their gender and/or their status—similar to the invisible technicians highlighted by the American historian and sociologist, Steven Shapin. In telegraphic networks, telephone switching, or the use of perforated cards in mecanography or early computing, women essentially had subordinate positions in their respective sectors, such as the "*demoiselles du téléphone*" (young ladies of the telephone) who manually connected the lines of correspondents.

This exclusion from duties involving decision-making and power—aside from a few exceptions—was characteristic of women's position in the production phase of communication tools, although they occupied a more central role with regard to consumption. The pioneering user and wealthy female consumer—such as Pauline de Broglie,

Countess of Pange (1888-1972), who recounts her use of the telephone in her book *Comment j'ai vu 1900*—stands in contrast to low-skilled female laborers.

More attentive comparisons between countries reveal distinctive features beyond these similarities. For example, while maternity and the social status of mothers with young children were an obstacle to women's careers in the British computing field, Stephanie Shirley's company Freelance Programmers, which was founded in 1962, tried to offer a response by hiring mothers as programmers on a part-time basis, as freelancers, or working from home. However, her idea did not export well to 1970s Denmark, for instance, as childcare was more developed there. In Eastern Europe, women involved in technological jobs were more valued under communism, while Western Europe and the United States tended to gradually exclude women from positions that had become attractive and rewarding, particularly in IT. This final observation reflects the circulations between the US and Europe, especially those of gendered representations conveyed by the advertisements of highly internationalized IT companies such as IBM or DEC.

The history of women and information and communications technology in Europe is partial, scattered, and still being written, but it is nevertheless quite fertile: the study of the co-construction between gender and ICT prompts consideration of forms of intersectionality, the question of subordinate jobs, and the status of science and innovation. It explores relations of power and expertise, and is also interested in related domains to which women contributed, for instance documentation, or technical practices such as stenography or dactylography. These areas also involved gendered customs, for example in telematics, and propose a history at the intersection of gender and technology, as well as politics, social matters, and economics.

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