MALWARE TECHNICAL REPORT

A MALware Technical Report
The Media Archaeology Lab
University of Colorado at Boulder
1320 Grandview Avenue
Boulder, CO 80302
mediaarchaeologylab.com

Switching Teeth

Salwa Kazi
PhD Student, University of Colorado at Boulder

MEDIA ARCHAEOLOGY LAB

Abstract

Switching Teeth - is a research project that worked towards the documentation of typewriting technologies and access in India. Access to technology has never been equal across the globe. In order to make visible and tangible these dynamics of accessibility to technology this project presents narratives surrounding memories of typing technology to illustrate the complexities of access and technology in India. This report forwards photographic and anecdotal evidence of typewriters from India to present an understanding of the complexity behind accessing, teaching and learning typewriting through three different languages.

About the author

Salwa (they/them) is a PhD student in the Dept. Of Communication at CU Boulder. Salwa's research centers marginalized communities in India, and their communicative and mediated practices. Salwa holds an MA in Linguistics and is a Humanities, Arts, Science, and Technology Alliance and Collaboratory (HASTAC) Scholar (2020-22) under the mentorship of Center for Digital Humanities, Pune, India.

Introduction

While mainstream technological histories and documentations usually center the Euro-American context, scholars point at the need to look at contexts and histories beyond that. Arnold (2013), in specific points at how , "Looking at India helps to decenter the history of technology and resituate it outside the familiar ambit of Western societies in which it is so often located. (p. 4). Keeping these aims towards centering the experiences of the Global South in my exploration of technological history, I take this project as a means to explore the important communicative

and mediating role of typewriters and typewriting in the Indian context.

While there are studies that assess the nature of and impact of writing technologies like pen, pencil, crayon, stylus, typewriters, touch-screen keyboards etc. in neuroscience and philosophy, “the role and impact of the different technologies employed in the writing process is rarely addressed.” (Mangen, 2010, p. 387). The ways in which the change in devices used for writing have communicative power and impact our embodied experiences has rarely been addressed. It is critically important to do so because, “different technologies are materially configured in profoundly different ways. That is, different writing technologies set up radically different spatial, tactile, visual, and even temporal relations between the writer’s material body and his or her material text.” (Haas, 1996, p. 5). Therefore, typewriting technology and its historical importance in the lives of marginalized communities, the values and affordances they bring into their worlds is incredibly important to explore. Through this project, I forward photographic and anecdotal evidence of typewriters from India to present an understanding of the complexity behind accessing, teaching and learning typewriting.

Data, Ethnics, Positionality

I identified a site in a small town in the state of Maharashtra for fruitful data creation. A typewriting institute run as a family business since the 1954s was already known to me from my own experiences as a typewriting student. I was able to meet with the current owner and instructor at the institute along with a past student. My positionality as an Indian researcher, a former student of the typewriting center, my sociolinguistic competence and my research ethics certainly affects the ways in which I collect this data and use it in my research and analysis to conduct ethical research interactions and analysis.
Participant A (she/her/hers) is a 51 year old Muslim woman who went to an English Medium Convent school and has worked as a beautician, teacher, secretary, salesperson, business-owner and more in different stages of her life. Participant B (he/him/his) is a 53 yr old Brahmin Hindu man who went to a Marathi medium school and has worked as a typewriting instructor and owner of the typewriting institute. The data was collected in two locations, one where I spoke with participant A at her house and the other where I visited a typewriting institution where both I and participant A were students. The interviews took place

in four languages: English, Dakhni, Kolhapuri Marathi and Kokni. Participant B speaks with me in Marathi but Participant A and I share other common languages as mentioned in the section before this.

The participants were briefed about my research project in detail before the interview and their full verbal and written consent was obtained. The consent documents were bilingual (written in both English and Marathi) and the participants received ample clarification from me for any doubts or confusion that they developed before signing them. The participants were aware of my research questions, possibilities of publication, sharing information, identities, data etc. before we started talking. Which is why, one of them, specifically participant A, requested for her name and location to be obfuscated for her own wish for privacy. Following that request, I decided to obfuscate most identifying information due to the intertwined nature of the relationship between participants. This research was funded by the Media Archeology Lab's Micro Grants. As part of my commitment to fair compensation, I compensated each participant with approximately (75$) for their time and labor. The amount was sent to them after the interviews.

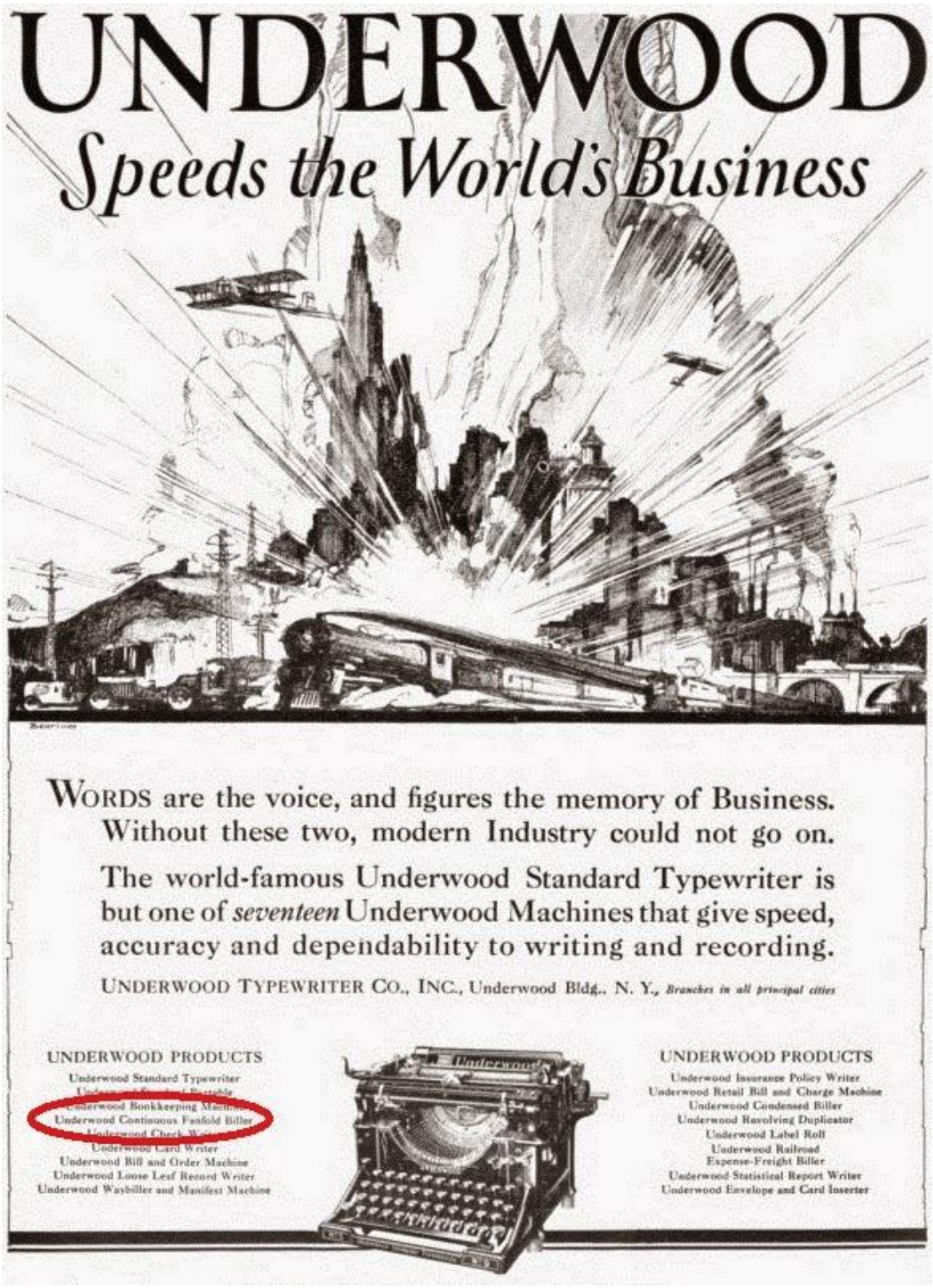
Linguistic Difference and Typewriting

Typewriter economy

The owner of the institute explains that typewriters were procured from a big market in the Fort Area of Mumbai. In the 50s, that was the only avenue for access to different machines, its maintenance, and expertise. Ther participant's grandfather would travel to Mumbai (~350 km distance) to buy machines. Below is a picture of the first machine (An Underwood - Model

unidentified) bought by his grandfather to start the typewriting institute in 1949.

I was unable to find a model with the logo on the carriage saying “Underwood, Speeds the world’s business” anywhere on the internet. However the slogan seems to have been popular as showcased in the poster below:



(Messenger, 1970)

The typewriting institute prioritized Underwood machines. Underwood's well-known competitor Remington was also accessible to the participant. Featured below is a Remington Model 17, which was used by the institute during its earlier years.

The machine presented by the participant was more than 60 years old and the participant had fortunately kept it with him for memories sake. However, he mentioned that the maintenance of the machine was not possible for him to keep up with. Hence, we are left with the visual of a decaying machine, riddled with fungus and rust, the carriage stuck - a relic of the past. A clearer picture of the same model can be found on

the internet, one of which I present below for reference:

(Wachtendorf, 2014)

The institute taught typewriting in three languages: English, Hindi (one of the official languages of the federal government) and Marathi (the official language of the state of Mahrashtra). Most typewriters used in India in the 1940s were imported. The most popular brands being American manufacturers, Remington and Sons, as well as Hammond typewriters. Sometimes dealers also imported parts of the machine and assembled them here. (Aranha, 2019). The Indian

Manufacturer Godrej and Boyce had been making typewriters since 1955 (Arnold, 2016, p. 1) however, the demand for Indian language typewriters was felt even before that. What is a curious development as a result of the lack of production in this case, is important to note. As shown in the picture below, the Remington model 17 that the participant showed me had keys displaying letters in Devanagari script.

Remington is a US based company, and has been noted to have historically produced typewriters in about 84 languages, as early as 1911 (as shown in the excerpt below).

REGISTERED TRADE MARK.

TYPEWRITER TOPICS

The International Business Equipment Magazine

AND

Official Organ of the Writing Machine Industry

Entered as Second Class Matter, December 20, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.

Vol. XVIII. No. 1. **New York and London, May, 1911** **Price, 15 Cents**

Remington Maxim in Eighty-four Languages

TO her many other distinctions, Miss Remington has now added mastery of almost all the world's written languages. A window placard produced by the Remington Typewriter Company states that Miss Remington can write no less than eighty-four different languages. In fact, it does more than state this fact, for it goes on to prove it by showing samples of the Remington's actual work in that many languages. These samples are translations of the famous motto "To Save Time is to Lengthen Life," which appears on the well known Remington Red Seal trade mark.

This is a most interesting collection and the way in which it was made is a subject of almost equal interest. It came about in this wise. Many years ago, after the Remington typewriter had become firmly established in the American market and had the work of converting Americans to the use of the writing machine well in hand, it, like Alexander, began to look for more worlds to conquer. This naturally led to the invasion of foreign fields.

Each new country added to the Remington organization necessitated printing a Remington Red Seal in the language of that country. Thus to the original English Red Seal others were added, one in German, one in French, one in Russian, one in Spanish, one in Italian, and so on. A member of the export department of the Remington Typewriter Company realized what an object of universal interest would be a collection of the many forms in which the Remington maxim, "To Save Time is to Lengthen Life," has appeared in these various languages. Accordingly he set about making such a collection.

We have obtained for publishing in connection with this article a reproduction of that part of this new Remington window placard which shows the eighty-four different forms of "To Save Time is to Lengthen Life" which now comprise this collection of the world's languages. By examining our illustration you will find that this list includes all the languages of which you have heard and some of which you have never heard. One language you may think of which is not in this list, but of that more will be said later.

A number of language families are included in this list. For example, there is the Celtic group, in which Irish, Gaelic, Welsh, Breton and Manx samples are included. Another interesting group is that of South Africa, which numbers five samples—Sizulu, Sesotho, Sixosa, Setshangaan and Taal, the first four of which are native Kafir dialects, and the last, Taal, being the everyday language of the South African Dutchman.

The United States adds a number of interesting specimens in the group of native languages spoken in the Philippines—Tagalog, Pampango, Ilocano, Visayan, Bicol and Pangasinan. And the American Indian contributes three to the collection, namely, Sioux, Winnebago and Aztec.

If we had space at our disposal to do so, we could go right through the list dividing these languages into their relative groups. However, we must find room to pay our respects to what our readers will find the most interesting features of this collection. We refer to those languages which require special characters of their own, as they cannot be written in our Roman characters. The list includes nineteen such languages written in eight different characters, namely, Greek, Russian, Hebrew, Armenian, Hindi, Burmese, Arabic and Japanese (Katakana).

Four languages are included in the Russian group—Russian itself and Servian, Ruthenian and Bulgarian. Four are also included in the Hindi group—Hindi, Marawari, Magadhi and Marathi, all of which are written in the so-called Devanagari character, which is identical with ancient Sanskrit. A sample of Sanskrit itself is also included.

An extremely interesting group is the Arabic group, included in which are seven languages—Arabic, Turkish, Sart, Persian, Malay, Urdu and Tartar. The Arabic Remington is truly a wonderful piece of writing machine construction. Over a hundred individual characters are included in the complete Arabic alphabet. These are written from right to left, on the line, above the line and below the line. They are of various widths, some requiring full spacing, some half spacing and others no spacing at all. These and other mechanical difficulties presented a prize problem in typewriter building to the Remington factory and the successful solving of this problem is one of the greatest mechanical achievements to the Remington's credit.

The perpendicular sample in the lower right hand corner is Japanese, written in the Katakana of Japanese syllabic system. In order to write perpendicular lines on the horizontal lines of the Remington, the type are laid sideways and write from right to left. After being written the sheet to be read is turned so the lines are perpendicular.

Doubtless our readers will ask the inevitable question, "Are there any written languages the Remington cannot write?" There are some such, but with one exception they are comparatively unimportant. The exception noted is that language which so far has stumped even Remington skill. We refer to Chinese, the hardest and strangest

(Messenger, 2014)

The excerpt from this image notes that, the company manufactured typewriters, ”four in the Hindi group - Hindi, Marawari, Magadhi and Marathi, all of which are written in the so-called Devanagari character.” Pushing the tone of this excerpt aside, the old publication gives us insight into the possibility of the existence of non-English typewriters. However, the participant explains the context in which his family would procure typewriters which might have made this possibility difficult to access.

Most typewriters were in demand for government business. As Arnold (2016) explains, “In India, perhaps to a greater degree than in the West, at least until the 1920s, government employment of typists was much greater than that in the private sector – typewriters became an integral part of the growing mechanization of the late-colonial state and typewriter companies looked to government departments as their main source of custom for the sale of new machines and the maintenance of old ones.” What this might mean is that the access to newly manufactured typewriters in Indian languages in terms of affordability, market access, etc. was not quite easy for the non-government sector.

The participant explained that the first machines they bought were English. Lose key-tops and type-bars

(the participant referred to this as the teeth) were available in different scripts in the market in the town as well as in Mumbai. To make the machine more malleable to the linguistic needs of the institute, they would switch out these two parts from Roman Script to Devanagari script as and when required and vice versa. It was interesting how the owner constructed these as “switching out the teeth of the typewriter” which points at a different linguistic understanding of technological details.

The margin system also had to be changed from left to right depending on the language. The malleability of the machine to suit these needs has not been documented quite widely but is extremely important to observe the ways in which resources are navigated by people from different marginalized communities to make room for new linguistic possibilities. Rather than buying different machines for each of the three languages the institute operated in, they chose to buy a few and get the spare parts switched out per need.

Slowly, Godrej and Boyce, an Indian company started manufacturing typewriters in India and the economy of Remington and Underwood companies started to dwindle. The participant himself learned to typewrite on the Godrej models but prefers the Remington Number

17. The spare parts for foreign typewriters also became inaccessible and the maintenance of these machines moved into the impossible. Switching from foreign-made machines to the local Godrej, most typewriting practices preferred Godrej models.

Typewriting as skill

(An image from a typewriting seminar conducted by the institute)

The institute started teaching typewriting because it was a must for most government employment. There is a certificate which gives students the qualification to

get government employment. Even now, for the junior clerk post in the government, the same certificate is required. However, manual typewriting as such is not exclusively required, leading to a shift towards computer-based typewriting. Typewriting classes therefore, were very popular as a means to employment. The student I spoke to explained that she wanted to “work in the office” which is why she joined typing class in 1984.

The move from the typewriter as the central machine and technology in typewriting to computer keyboards marked a distinct change for the institute and the economy. The institute has completely phased out manual typewriters from their space which is jarring from my own memories of walking into the room to the sound of twenty typewriters which has now changed to soft clicks. Computer typewriting for Indian languages - Hindi and Marathi specifically has been difficult as the instructor pointed out that there are different keyboard layouts and no singular standard unlike the typewriting standard which makes it difficult to teach and learn.

As a skill, people still value typewriting (regardless of typewriter or keyboard) because of its efficiency. The instructor explains that typewriting is an art, or a skill that helps people achieve efficiency. Participant A

explains that typewriting to her is a way of improving her linguistic skills since it calls her attention to detail, to grammar, to correct spelling, to mental awareness, etc. Together, both participants explained that typewriting is a viable skill and must be continued even today, not merely because it speeds up the process of “work” but also because it contributes towards the betterment of their own lives within and beyond the workplace.

Participant A invokes her experiences with typewriting, specifically talking about how it was hard for her to learn to use the computer. In her computer class, she was taught how to save a file, mail a file but she could not memorize these actions. She instead contrasts it with typewriting by saying that even though she couldn’t learn to save a file, she could definitely type faster than others. Moving from speed, to grammar to vocabulary, participant A constructs typewriting as capability - in speed, in language and in profession. This marks a clear difference in the understanding of value in skill. Typewriting as a skill is favoured by both participants to be more valuable.

Typewriting and Gender

There is of course a gendered relationship between the machine, the profession and the work being carried out. Wershler-Henry (2007) explains that during Roosevelt's presidency, for example, typewriting was thought to be, "synonymous with an alert, industrious, competent, and fully technologized, modern office, powered by the electric vigor of the young Roosevelt." (2007, p. 80) Participant A explains that she worked her job "as he guided me." Participant A embodies and voices all these ideas related to typewriting. She explains that she typed faster than anyone else during her classes. At work, she says she could finish a day's work in an hour. Her technological literacy and above all her speed is very valuable to her. She reminisces about that period of her life, constructing a competent and industrious past for herself. She also states that she was not able to appear for the higher speed exams (She has certifications in 40 and 50 wpm) since she got married. Here, her life as a married person interferes with her vision for an industrious and competent future.

Participant A also mentions that she should know that typewriting is "decent office work and so on." Since her inspiration to learn to typewrite comes from the

portrayal of a middle-class typist/secretary in the movie Jeevandhara, it's easy to understand that she's implying that office work, the actress' portrayal of the office-working woman is decent. This voice of the office-working woman is aspirational and presents itself throughout the interview, as something to look up to, to dream of, and hopefully something to become in future.

Participant B also constructs a relationship between women and typewriting. Through his voice we can see something else being voiced, "A male fantasy about the power the machine can bestow." (Wershler-Henry, 2007, p. 80) The statistics of professional stenographers and typists in the United States showcase a gendered transformation.

"In 1870, 4 percent of typists were women. A decade later, in 1880 (when the Remington No. 2 first hit the market), that number had jumped to 40 percent. (Wershler-Henry, 2007, p. 86). While there are no such statistics that I was able to access for India, the gendered understanding of women as typists and secretaries definitely presents itself through participant B's words. The instructor contributes to this conversation by expressing his own perceptions of what women were allowed to do in the 70s and 80s in

this town. Both participants center typewriting as an important intervention in this understanding, typing as a decent work which translates to an upper-caste, upper-class understanding of decentness and the conditions of safety, purity and money-earning that are associated with working a “decent job”. It’s not like women didn’t work before they had access to typing technologies, but typewriting afforded some women access to office-work in comparison to farm-work, domestic work, sanitation work, gig-work, etc.

Together both participants construct the idea of decent work as being co-constitutive of typewriting from their common spatio-temporal contexts. We must note that both participants are in the same age group (50-55) and grew up in the same town.

Conclusions and future directions

With this report, I aimed to have a generative conversation about writing technologies and their significance in our lives despite their reduced usage in these times. Through the memories of participant A and B, I have posited a rich, contextualized and cultural understanding of memory, nostalgia and its continued role in today’s sense-making. Through typewriting,

these rich messages of socio-historical importance are mediated and communicated which points at the co-constitution of communication and culture. Such research that works with multidisciplinary focus from communication, sociolinguistics, media technology, etc. can help us look at data as communicating voices of difference and convergence.

In future, I hope to develop this research project further in conjunction with the Media Archeology Laboratory at CU, Boulder. With an impending quest to find archival data on writing technology, I also hope I can find research in India to help me cushion some of the memories the participants have shared with me and validate them through scholarship. I would also like to engage in this data through critical theory, specifically the frames of coloniality, caste and religion, gender studies, and more. Overall, I hope that more research is done on non-English narratives, interviews and technological archives. Moving away from the academic norms of data, research and scholarship, I hope this project grows into a beautiful example of valuing memories and technological history.

Credits

Original photography in this report by Sugat Gaikwad, www.sugatgaikwad.com

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