Recovering Technology:
the use of the telephone in the 1918-19 influenza pandemic

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Figure 1: Telephone advertisement, 1934.

What does recovery mean?

If we think about individual recovery from something like the common cold, then recovery might mean being back to normal with the cold quite forgotten. This sense of recovery — as a return to past normalcy — is the same sense we would use to talk about economic recovery or recovery in the housing market. In other cases of personal illness, we might recover but be changed, transformed even, by the experience. We might become more cautious and risk-averse, changing our habits to be more health conscious, or we might gain new empathy for others and appreciation for loved ones.[1] Sometimes recovery remains elusive and we must learn to manage our new normal. This sense of recovery links to another signification of the word recovery: the sense of an ongoing attempt to regain something lost.

In view of these dual significations, as we recover from COVID-19, do we prioritise recovery as retrieval or recovery as revival? To answer this, we need to think about how the pandemic has transformed the way we communicate and assess these communication technologies not with a view to 'the new normal' but, rather, by reckoning with the past normal. Normal was not good enough for many, and pandemic learning demonstrated the possibility of accommodating people with chronic illnesses, the disabled and students who do not fit the 'traditional' student profile in more flexible and inclusive ways. Analysis of communication technologies used in past pandemics illustrates the deep entanglements between health, infection control, communication and inequalities.

Such interrelations are illuminated in analysis of the telephone in the influenza pandemic of 1918–19. Colloquially referred to as the Spanish Flu, this Influenza Pandemic came in three deadly waves and had an extremely high mortality rate, notably in young people.[2] The British governmental response to the 1918 pandemic has been criticised by historians for its passivity, its disinclination to acknowledge the seriousness of the event and its overall focus on personal prevention and personal health over structural policy measures.[3] On the other hand, contemporary uncertainty about its nature as a *virus* has been highlighted by historian Michael Bresalier, who has urged us to remember that knowledge of the pandemic as a virus was '*in-the-making* between 1918 and 1933'.[4] The workplace measures used to reduce infection in this period exemplify this uncertainty around differentiating bacterial from viral infections and the interplay between communication technologies and medical interventions. The telephone was a key tool in controlling the influenza pandemic, but also a focus of concern because of its probable role as a vector of germs. Although it played a role in reducing infection, it also posed a potential health risk, especially in shared spaces. In addition, it deepened inequality for people with hearing loss.

1. Havi Carel has done work on illness as transformative experience, see H. Carel, 'Ill, but Well: A Phenomenology of Well-Being in Chronic Illness', in J. E. Bickenbach, F. Felder and B. Schmitz (eds), *Disability and the Good Human Life* (Cambridge, Cambridge University Press, 2014) pp.243-270.

2. It is estimated to have killed 40-50 million people worldwide. A Garcia-Sastre and R. J. Whitley, 'Lessons Learned from Reconstructing the 1918 Influenza Pandemic' *The Journal of Infectious Diseases* 194:2 (2006) 127-132.

3. See A. Tanner, 'The Spanish Lady Comes to London: the Influenza Pandemic 1918-1919' *The London Journal* 27:2 (2002) for the focus on individual failure and S. Tomkins, 'The Failure of Expertise: Public Health Policy in Britain during the 1918–19 Influenza Epidemic' *Social History of Medicine* 5:3 (1992) 435-454 for the failures of the government response more broadly.

4. M. Bresalier, 'Uses of a Pandemic: Forging the Identities of Influenza and Virus Research in Interwar Britain' *Social History of Medicine* 25:2 (2011) 400-424 (p.402). Italics in original.

Influenza: Keep in Touch

The telephone offered a way to work from home and reduce the risk that you would spread influenza to others.[5] We see this rhetoric in the advertisement in figure 1, which portrayed the telephone as a way to provide protection from illness while retaining business acumen, explaining 'despite your illness, you can still control your business if you are on the telephone at home'.[6]

However, rates of illness in the (all-female) workforce during the pandemic meant calls were restricted because over 1000 telephone operators were absent from work.[7] Nevertheless, the telephone remained critical in the fight against influenza. On March 13, 1919, the Ministry of Munitions reported on the 'precautions against Influenza' they had instated to protect their staff working at headquarters. 'Telephones are sprayed so far as possible by the Welfare Staff, and Departments are being encouraged to send a number of their staff to the sick-room to fetch solution and a spray, for the purpose of spraying their Department's telephones.'[8] Other crucial 'prophylaxis' included ventilating rooms, disinfecting lifts and infected rooms (using a formalin lamp) and disinfecting the throats of contacts with iodine.[9] The telephone was a locus of concern as a shared technology that necessitated very close contact between the device and the mouth. Early telephones handsets were adjustable so users could place their mouths and ears directly against the receiver and transmitter. This was necessary because the early telephone was very difficult to hear.

Telephone Voices

Somewhat ironically, the telephone (patented in 1876) was originally designed to function as a kind of hearing aid to support Alexander Graham Bell's attempts to make the deaf speak. However, the telephone increased the number of people perceived to have hearing loss because sound was (for the first time) isolated from accompanying visual information that would help aid understanding. Even for those who could hear it, telephone calls were difficult. We can see from this Post Office 1923 guidance (figure 2) on 'how to pass and receive a telephone call', that the
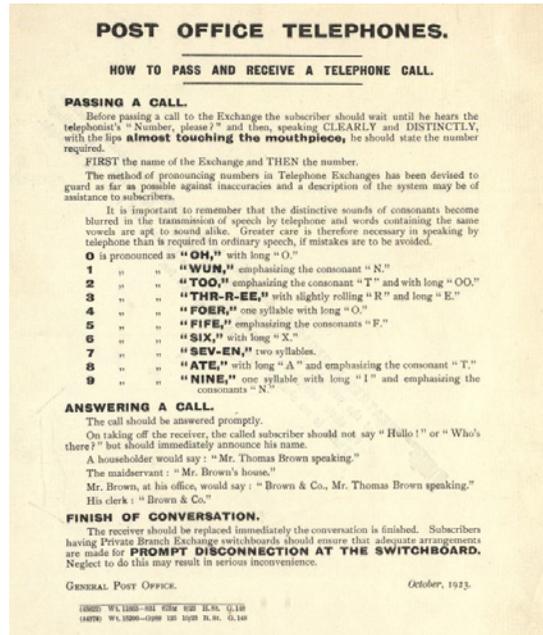

Figure 2: Guidance for telephone usage, 1923.

telephone blurred consonants and elided vowel sounds.[10] The technology required a different way of speaking and so ushered in new communication norms.

This guidance makes it clear that the process of telephone transmission made speech less comprehensible for those with hearing loss, especially those with noise or age induced hearing loss who would have struggled to hear higher frequencies—where information-delivering consonants are pitched. Specific pronunciation and etiquette norms were instated to mitigate this effect. Protocol helped users to know what to listen for and expect, further easing the communication process. The technology did not force the *elevation* of a particular accent in the way of the radio and the BBC, rather it forced the *standardisation* of a telephone voice.[11]

Telephone Ears

Increased use of telephony caused problems for people who could 'manage' their hearing loss in other communication settings and who otherwise considered themselves as 'hearing'.[12] This disconnect was partly the result of the Post Office's design choices. To test their telephones, the Post Office designed an 'artificial ear'. However, the data used to create the artificial ear's representation of normal was skewed to represent 'the ideal' (eight normal men with good hearing) to the detriment of those at the edges of a more representative average curve. Using data that excluded those with imperfect hearing meant the average threshold, which represented normalcy, was artificially high. Those consequently unable to use the 'normal' telephones used the Post Office's 'telephone service for the deaf'.[13] However, from 1947, plans for an NHS hearing aid moved provision of auditory technologies under the aegis of the Ministry of Health and diminished the role of the Post Office in providing nationalised assistive technologies.[14] This meant users with hearing aids struggled to access telephony in the second half of the twentieth-century. For example, in 1954, a telephone user advocated for a new telephone design to help people with hearing aids. They made their case by highlighting its dual importance to public health, explaining that they needed a flat mouthpiece rather than a curved mouthpiece to use the telephone with their hearing aid (see figure 3). They emphasised that 'many people who are not deaf would prefer the flat mouthpiece as more hygienic. I have met several who have expressed that opinion. A good case could be made out for all public call boxes to be fitted with hand telephones with flat mouthpieces in the interest of public health'.[15]

This telephone user attempted to gain access to assistive technology by emphasising its wider incidental benefits. This case relates to two of the central insights driving my research: that technologies are crucial to our understanding of disability and that disabled innovation is crucial to the development of technologies. Using safe
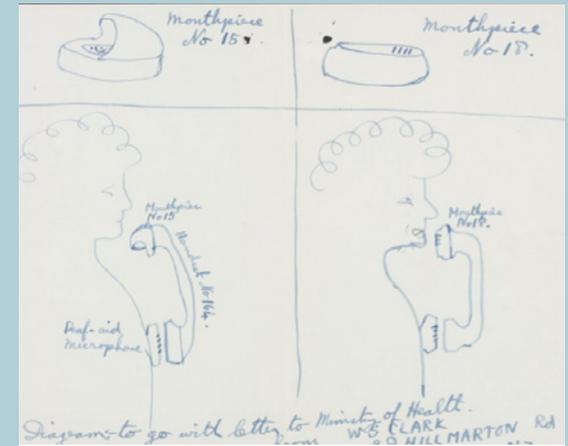

Figure 3: Letter offering suggestions for different telephone designs, 1954.

communication systems in the pandemic has exacerbated problems for those with hearing loss. Necessary use of facemasks has made it difficult to communicate and video-communication technologies without subtitles have increased difficulties for those with hearing loss.[16] Though in-built subtitles are now available on Zoom, automatic captions are often faulty because voice recognition technologies rely on biased data, so errors increase for users with higher voices and/or with non-standard accents.[17] This bias is due to the origination of this technology in telephone systems. In the USA, Bell Laboratories prioritised *patterns* of speech forms over *diversity* of voices, which meant vocal measurements from men and children were averaged out and represented as 'typical'.[18] This statistical approach has led to enduring race and gender bias in voice-recognition software.[19]

In the move towards recovery, we must ensure we retain the accessibility measures that the pandemic has made possible *and* actively improve on them. Recovery should allow us to forget about the worst parts of the pandemic while retaining its better aspects. Doing so will ensure that we experience recovery as revival rather than retrieval.

5. Michael Kay documented the history of the telephone as an important quarantine tool in his 2014 University of Leeds PhD thesis.

6. Press advertising proofs, volume 1, 6. Influenza British Telecom Archives TCB 699/1/6 Proof of newspaper advertisement (1934).

7. S. Tomkins, 'The Failure of Expertise: Public Health Policy in Britain during the 1918–19 Influenza Epidemic' *Social History of Medicine* 5:3 (1992), p.441.

8. Ministry of Munitions of War, Central Establishment Notice No. 82. Precautions against Influenza. National Archives, MUN 4/3702, pp.1-2. Thank you to Dr Laura Robson-Mainwaring for drawing my attention to this source and helping me access it for this article. For more on Dr Robson-Mainwaring's work on 'Public Health and the 1918-1919 Influenza Pandemic' see **https://media.nationalarchives.gov.uk/**

9. Ministry of Munitions of War, Central

Establishment Notice No. 82. Precautions against Influenza. National Archives, MUN 4/3702.

10. The British Post Office had a legal monopoly over the telephone system between 1911 and 1981.

11. See J. R. Schwyter, *Dictating to the Mob: The History of the BBC Advisory Committee on Spoken English* (Oxford, 2016).

12. The concept of managing hearing loss was introduced in G. Gooday and K, Sayer, *Managing the Experience of Hearing Loss in Britain, 1930–1930* (London, 2017).

13. This process of making this service was driven by disabled innovation and user activism and is explored in detail in chapter 3 of my book.

14. The Post Office engineers, who were the de-facto experts in auditory assistive technologies in the mid-twentieth century, designed the Medresco.

15. 'Suggestion that a flat mouthpiece, instead of

the normal cupped one, should be provided to facilitate the use of a telephone in conjunction with a deaf aid worn on the chest'. Letter from W. S. Clark to Telephone Headquarters, 20 March 1954, British Telecom Archives, TCB 2/ 172, folder 'Telephone for Deaf People'.

16. Subtitles, originally designed through disabled innovation by deaf users, are today used by a variety of people for a variety of reasons, see 'Pandemic Pedagogy 2.0: Coreen McGuire – The Pandemic and Teaching Practice: thoughts on subtitles and accessibility' *History UK*, February 2

2021, **https://www.history-uk.ac.uk/2021/02/04/pandemic-pedagogy-2-0-coreen-mcguire-the-pandemic-and-teaching-practice-thoughts-on-subtitles-and-accessibility/**

17. Appearance enhancing filters were available before subtitles were.

18. M. Mills and X. Li, 'Vocal Features: From Voice Identification to Speech Recognition by Machine', *Technology and Culture* 60:2 (2019), pp. 129-160.

19. Ibid, p. 152.