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Finding the Female Users: A Feminist Historiography of the Fairlight CMI

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Title: Finding the female users: A feminist historiography of the Fairlight CMI

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Abstract:
The story of the Fairlight CMI, a digital synthesizer that was designed in Sydney, Australia in the mid-to-late 1970s, is dominated by a few high-profile male users: Peter Gabriel, Herbie Hancock, and Stevie Wonder. In both academic and popular histories of the instrument, Kate Bush is often the token female user. In this paper, we shift our focus away from this well-known history and ask: who are the users that have been left out of this story? Where are the female users who may have been inspired by Kate Bush but who are not part of this familiar and limited narrative? Was there a lack of female users of the Fairlight CMI, or do accounts of this time overlook their activity and contributions in favour of male counterparts? Were there female producers and musicians who wanted to use the CMI but did not have access or the financial ability to do so? Using ideas and concepts from the field of Science and Technology Studies (STS) and the focus on users in the work of scholars like Trevor Pinch, Nelly Oudshoorn, and Steve Woolgar, we also ask if the designers of the the Fairlight CMI configured the instrument in such a way as to prioritise male over female users.

We will report back on initial groundwork conducted to identify female users of the Fairlight CMI. Our line of questioning and early day discoveries forms the first step of a larger project to develop a research network exploring women users, contributors and creators who can challenge the received narrative around the Fairlight CMI. Inspired by the work of feminist historians of music technologies like Tara Rodgers who writes that 'women are always rendered out of place as subjects and agents of electronic music history and culture', we aim to show how women may have been left out of the story as subjects and agents in the history of early digital technologies like the Fairlight CMI. We identify female users from the worlds of experimental music such as Roxanne Turcotte and Beverly Grigsby, the words of sound engineering like Jeri Palumbo and Susan Rogers, and the worlds of popular music like Julia Downes and Kim Wilde and ask why their stories have not yet been told. Uncovering new voices to tell stories is important now, not only to capture oral histories from those who are still able to contribute to these discussions, but also to write more nuanced histories.

In this paper, we also reflect on recent compositional activity that has drawn on the Fairlight CMI's sound library, as demonstrated in Blackburn's *Farewell Fairlight* (2021). This process raises questions about women contributors to this eclectic and iconic sample collection that was used widely in the production of popular music in the 1980s. There has been much scholarly focus on the ORCH2 sound, that was sampled from Stravinsky's 'Firebird' and used most famously in 'Planet Rock' by Afrika Bambaataa & The Soul Sonic Force. We are keen, however, to investigate the origins of other library sounds and highlight the role of women who contributed to the Fairlight CMI's adoption by users and its subsequent iconic status. For example, we know of Sarah Cohen's breathy vocal addition to the library with the widely used SARARR sample. We want to ask where these sounds came from and in what ways are they still being used to shape the sounds of contemporary music. By doing so, we will rethink the history of technology-based music and explore how women have been overlooked in the writing of history about the designers and users of digital technologies.

Biographies

Manuella Blackburn is a lecturer based at The Open University. Her award-winning practice-based research in electroacoustic music explores micromontage, compositional methodologies and brevity in music making. Her recent composition, *Farewell Fairlight* (2021) was awarded 3rd Prize at the GRM Découvertes composition contest. Her research also extends to the study of sampling and sample library use. She is currently a recipient of an AHRC EDI Engagement Fellowship which explores the representation of culture and non-Western instrument sounds on online sample pack distribution platforms.

Paul Harkins is a lecturer in music at Edinburgh Napier University. His book, *Digital Sampling: The Design and Use of Music Technologies* explored sampling practices across a range of musical worlds and was published by Routledge in 2019. He has published articles in *Popular Music, Popular Music & Society*, *IASPM@Journal*, *Journal on the Art of Record Production*, and *Reseaux* and co-edited a special issue of *Popular Music* on Music and the Anthropocene. As well as recent research about digitalisation and democratisation, he is developing new projects about the feminist historiography of sampling and the use of technologies in domestic spaces.

Structure for the talk

1. Introduction (the project and why we are doing this, how the history has been written so far?) PH -
2. Looking for the female voices (what/who have we discovered so far) PH (Roxanne mini-case study)
3. Discussion about the sound library and the sounds used in composition (MB)
4. The larger plan (explain network bid) MB
5. The research team and wider network PH

SLIDE 1: PH
Thank you for your introduction…

SLIDE 2: PH
The Fairlight CMI is a significant instrument within the history of music technologies. As one of the first commercially available polyphonic digital synthesizers, its adoption and use led to the sampling of external sounds and a reshaping of the practices of popular music in the 1980s. Designed in Sydney, Australia in the mid-to-late 1970s, its story is often dominated by a few high-profile male users including Peter Gabriel, Herbie Hancock, and Stevie Wonder. In both academic and popular histories of the instrument, Kate Bush is often the token female user. We want to shift the focus away from this well-known history and ask: who are the users that have been left out of this story? Where are the female users who may have been inspired by Kate Bush but who are not part of this familiar narrative? Was there a lack of female users of the Fairlight CMI, or do accounts of this time overlook their activity and contributions in favour of male counterparts? Were there female producers and musicians who wanted to use the CMI but did not have access or the financial ability

to do so? Groundwork has indicated a number of female contributors, users, and practitioners all engaged with the Fairlight CMI, past and present, who remain outside existing narratives. Having charted its design and use in a monograph, *Digital Sampling: The Design and Use of Music Technologies*, we are now keen to ask questions that challenge the myths of male heroes and geniuses that are still found in both popular and academic discourses.

Science & Technology Studies
One of the ways in which we plan to do this is by using ideas and concepts from the field of Science & Technology Studies (STS) where sociologists have challenged both technological determinism and the emphasis on inventors as heroic geniuses that was prevalent in the histories of technology written in the twentieth century. Ideas such as *interpretative flexibility* have been useful for understanding how new technologies are designed and developed, undergo changes as a result of use (or non-use) by 'relevant social groups' before arriving at a period of stability and closure where a dominant form of the technology emerges. It explains why Moog's modular synthesizers were more commercially successful than Buchla's because the piano keyboard was used as its interface and was already familiar to groups of users like rock musicians. In Pinch and Bijker's original article on 'The Social Construction of Facts and Artefacts', they describe how the multidirectional development of a safety bicycle consisting of two wheels of equal size was partly the result of engineers designing a bike aimed at women who were discouraged from using the Penny Farthing. We want to identify whether there was 'a relevant social group' of female Fairlight CMI users to see how they used the digital synthesizer and sampler. The designers of the Fairlight were all male and, to use Steve Woolgar's term, we also want to ask whether the technology was 'configured' in such a way as to prioritise male users over female users as well as look at how the marketing and distribution of the instrument prioritised a male audience.

Feminist Historiography
The initial design of the Fairlight CMI was the result of engineering experiments in makeshift spaces in the suburbs rather than university departments or the laboratories of research institutes. Kim Ryrie and Peter Vogel were not university graduates but high school friends who bonded over building electronics in the basement of Ryrie's grandmother's house in Sydney. We are keen, however, to avoid what Tara Rodgers has identified as a tendency in the historiography of synthesizers to venerate white, middle-class, male inventors as archetypal heroes, 'the humble hobbyist and tinkerer[s]' (2015, p. 15) who work in basements to overcome the constraints of the bureaucratic workplace or the family home and 'revolutionise' the processes of music making. For this reason, she is critical of Pinch and Trocco's book about Robert Moog and the tendency to celebrate one man for changing the world of synthesizers in the 1960s. In her article 'Tinkering with Cultural Memory: Gender and the Politics of Synthesizer Historiography', Rodgers explains how the absence of women in the histories of sound technologies is related to the maleness of engineering cultures. She uses archival research to show how many women in high-school and college were interested in music technologies such as the electronic synthesizer designed by Harry F. Olson and Herbert Belar at RCA in the 1950s and wrote letters directly to Olson asking questions such as 'how come the synthesizer is used to imitate existing instruments? I had hoped to hear new sounds'. However, some were discouraged from enrolling on science and engineering classes and encouraged to take cookery classes instead. We want to try and find out if there is similar evidence of interest from women in the Fairlight CMI but who did not end up becoming owners or users because access was denied to them for reasons related to their gender.

Kate Bush was first a user and then an owner of a Fairlight CMI. As the most well-known female user, she is a key figure in a story about the male-dominated worlds of engineering and electronic music. Samples of broken glass, cocking rifles, and other 'sounds of everyday life' were used on

Never for Ever in 1980. As Bush assumed more control of the production process on this album and its follow-up, *The Dreaming* (1982), the perception of her as a pioneering user of the CMI contributed to her move away from the stereotype of the teenage pop prodigy. She was hailed in one music technology magazine as 'a vital and innovative composer, singer, keyboardist, and producer who has shaped a uniquely personal and organic sound' (Diliberto 1985, p. 57). Of course, the 'organic' sounds in Bush's music were the result of using highly sophisticated, computer-based instruments like the Fairlight CMI and its sounds were also shaped by 'support personnel' like Richard Burgess. Howard Becker's term is also relevant to the role of other women that we have so far identified as Fairlight users. In the worlds of sound engineering, Susan Rogers worked with Prince and a Fairlight on his *Sign of The Times* album and Jeri Palumbo was a music student at The Julliard School in New York when she was introduced to the CMI and, as a result, became a sports broadcasting engineer. In the worlds of pop and rock, Anne Dudley was a key member of the Art of Noise, though it's not clear whether she provided string arrangements *and* programmed the Fairlight CMI on their avant-garde chart hits. While the Fairlight was used on albums by artists like Julia Downes, Tasmin Archer, and Kim Wilde in the 1980s, their lack of cultural capital or commercial success has led to them being ignored both by music journalists and academics in the writing of histories of digital sampling. In the worlds of experimental music, Roxanne Turcotte used the Fairlight during her time studying electroacoustic composition at the University of Montreal and Beverly Grigsby, who taught music at California State University, produced a piece called Spheres using the Series III in 1988. So far it appears that many of the female users were taking advantage of the fact that university departments were one of the few places where Fairlights could be accessed by those who weren't either rich rock or pop stars or professional recording studio engineers. It's also worth pointing out that the majority of female users on our list are white and that we may need to explore the intersectionality of women who have used the Fairlight CMI.

<mark>SLIDE 4: MB</mark> (Roxanne Turcotte mini-case study)

Roxanne Turcotte, a Montreal-based composer and sound artist is one of the women users of the Fairlight we identified in our groundwork preparations for exploring a wider range of stories. Roxanne's current work focuses on the integration of sound installations and live performance with multichannel fixed media. Her past music outputs utilised the Fairlight CMI during her graduate studies at The University of Montréal in the 1980s, quote "I was a student in electroacoustic music and in 1983 we received this beautiful instrument at the studio of the Faculty of Music of the University of Montreal (1984 or 1985 as I recall). We all had classes with Jean Piché. I did a whole series of works almost exclusively on this instrument between 1985-1988. « *Amore* » among others."

The attraction for using this sampler is explained in the following quote: "There was a built-in keyboard, and because I'm a keyboardist, I was able to translate my ideas in a real way. It was easier for me. There was no need to manipulate tape for editing and risk losing small pieces of cut tape. The backup was on 8-inch floppy disks. It was so much lighter than the 1 or 2 inch tape of the analog recorders and so much more convenient. What was interesting was being able to play my samples on a keyboard. It really changed the way that I compose.

Turcotte describes her piece, Amore, as a tale told through the language of sound and it was produced entirely with the Fairlight (between 1986-88).
She states – "In this work, there are many repetitive rhythmic minimalist patterns with a lot of sampling. It was the sound of the time that came from the type of technology. Digital audio recording as we know it today did not yet exist. So I was using a lot of small nested sequences. "

Here is a short extract from *Amore* taken from the ending of the third track: PLAY EXTRACT FROM AMORE

Conversations with Turcotte indicate further insights regarding universities as homes of Fairlight samplers - tracking the distribution of these instruments in Music and Music Technology department may tell us more about who had access to Fairlight sampler technology and reveal further users and creators interacting the instrument. Turcotte also points to her experiences of discrimination, injustices and prejudices surrounding her work and interaction with technology. She states "I realized that the men around me had privileges that I didn't have! …it was difficult to systematically obtain the trust from other members of my community in general. I nevertheless experienced a lot of exclusion during the formation of electroacoustic regroupings or during the programming of concerts. My submissions were turned down one after the other for years. I never got a University position and I felt like I was swimming without ever reaching the shore..."

SLIDE 5: MB - Sound library
My own interaction with the Fairlight CMI, was prompted through my engagement with the music studios at Keele University when working there between 2019-2021. The Corner studio houses a working Fairlight, available with unrestricted access to music students and staff. This interaction initiated my interest in the factory pre-recorded samples which came loaded on 8-inch floppy diskettes on the Fairlight CMI series II from its manufacturer in 1982. As I explored the Fairlight sound library I was struck by the brevity of the sounds, (a hallmark feature of my own musicmaking) often no longer that one second in duration due to the sample memory limitation of the Fairlight.

The eclectic nature of the library offered a random mix of instrumental, vocal and sound effect content. Listening back to the iconic sounds in this collection set off questions about their origin, who created these sound contributions and the creative potential locked within their brief, momentary units of audio. As I sifted the library for sound material for my own music making, I pondered where they had been sourced from and who might the contributors be of these sounds. I dug deeper into the sample labelled: SARARR. (also known as ARR1 on some versions of the factory library), which has gained legendary and iconic status amidst the range of samples appearing in this library – it encapsulates the Fairlight sound along with the infamous Orch 2 sample.

PLAY SAMPLE

The use of this sample exploded in the 80s/90s appearing in…

'Shout' (Tears for Fears, 1985).
Moments in Love (Art of Noise, date)
Zoolook (Jean-Michel Jarre, date)
DJ Culture (Pet Shop Boys, 1991)

An account of how the sound was created is provided by producer and Fairlight sample creator, Tom Stewart as documented in interview material… he states "The sample is a breathy vocal from Sarah Cohen, who was "a friend of a friend" and "a bluesy singer with a unique husky voice". (Some accounts refer to Sarah as a receptionist working for Fairlight.

Stewart explains; "I was trying to get the sound of angels singing and wanted Sarah to sing more and more airy or breathy (as angels do). Some of this high-end 'air' was deliberately over-emphasised to compensate for the limited sampling bandwidth … Sarah would sing a note for several seconds while watching the guitar tuner to stay on pitch. I would sample midway through the note…
The sample rate was a compromise between a long sample (low sample rate) and adequate high-end frequency. A sample rate around 8Khz yielded around 2 seconds of sample time which was long

enough to reduce noticeable looping and thus playable over more of the keyboard. The Page 8 high filter was set by ear to minimize digital aliasing grunge.

After a few hours in the non-air-conditioned studio we must have re-sampled 100 times before finally capturing The Perfect Sample/Loop. It sounded fantastic. Sarah was a little hoarse by then (resulting in a better sound perhaps) but still cheerful.

In this story, the technology and process outweigh the knowledge or awareness of Sarah Cohen, the women who contributed the sound – it was her sound that can be heard on a multitude of pop tracks including in the 80s

As I began exploring the Fairlight sound library, my own use of these samples explored ways of elongating these brief sounds. My practice integrated the SARRA sample at various points:

Here is an extract from my composition, *Farewell Fairlight* which starts with the SARRA sample and features in the background drone material.
PLAY EXAMPLE 1 (SARRA sample acts as a crescendo into a phrase in the first section of my composition

We have identified other contributions to the Fairlight sound library by women. These include:

Scream 1 and Scream 2
PLAY EXAMPLE

And also a curious sample known as Bizzare.

PLAY EXAMPLE

The Bizarre sample is a vocal sample taken from an existing track by Frank Zappa called My Bizzare Relationship. There is an on-going debate about whether the voice is Jeanne Vassoir or Pamela Zarubica - both at one point or another were referred to by Zappa as Suzy Creamcheese. Zappa stated: "There never really was a Suzy Creamcheese. It was just a figment of my imagination until people started identifying with it heavily." Again, this contribution by a female voice became part of the lasting identifiable sonic identity of the Fairlight.

Our research to date has gained access to the Fairlight CMI Sound library documentation compiled by Peter Weilk. This documentation lists the enter collection of factory sounds and how these we organised on different diskettes that came with the Fairlight. The labelling and anecdotes have given insight into the origins of these sounds, again indicating where women contributed in perhaps lesser known ways.

Here is an image of one of the pages from the sound library documentation. At the bottom of this extract you can see the entry for the SARARR sample with the description noted as…

Our groundwork to date has indicated that there are many more stories to be told about the women users of the Fairlight CMI (including lesser-known contributors) and building a network of users, practitioners, music technologists and those involved with the early beginnings of the historically important sampler could reveal more about its untold past. We are currently preparing a research network grant application that gives various platforms for women to share their insights, experiences and music making, and simultaneously inspires and promotes future creativity with the Fairlight and its legacy paraphernalia such as the sound library, or the downloadable tablet app, etc… We also want to capture oral histories and celebrate the work of these individuals by working with museums and exhibitions to share this knowledge widely.
The network bid focuses on three main events:

Sampling Historiography, Gender, and Female Users of the Fairlight CMI

Following the Fairlight CMI – Design, Distribution, and Materials

Expanding the Sounds and Voices of the Fairlight CMI

We want to continue bringing the many stories of this instrument to life crossing disciplinary and institutional boundaries. We want to hear from more voices about how they continue to connect with the Fairlight: as technologists involved in its repair who educate synth enthusiasts and other members of the public about its history, as composers who work with its library sounds to produce new works of sound art, and as museologists working on projects to produce new ideas and ways of encouraging museum audiences to interact with musical instruments and think about their history. This work is important now, not only to capture oral histories from those able to contribute to these discussions, but also to write more nuanced histories, engage young learners, and excite those new to electronic music and its technologies. Seeing diverse role models and understanding the important ways that women have contributed to the development of music technologies provides powerful influence for future generations. Without these in place, the story of digital sampling and its technologies is only half told, and the achievements of innovation and excellence are reduced to the few male figures associated with this instrument.

Slide 11: MB
Problematic historiography – why the project is relevant
A last thought before we finish - As we return to these histories to fill the void on women's stories, shedding light on their unknown achievements, we are wary of the contemporary situation that also remains in jeopardy or at risk. How do we prevent these oversights taking place in real-time or in future recounts of our musical past? Those with the responsibility and privilege of writing on/about music's rich and varied past are the gatekeepers of this reporting and builders of knowledge. I believe this responsibility is wider spread in the case of acknowledging music technology's past, where blog posters, website curators, archive holders and technology enthusiasts together share this duty…

Thanks for listening and we invite any questions…