

Increasing the Volume: The Creative Diversity and Future Visions of Female Electroacoustic Composers in Australia

ALEXIS WEAVER

If knowledge is power, increasing dialogue around female electroacoustic composers and their diverse offerings disrupts and corrects the current “power play” which exists in the form of unequal gender visibility in electroacoustic music.¹ A lack of visible female role models, both currently and in historical canon, creates an environment which strongly discourages female music technology students, and perpetuates a handful of stylistic “stereotypes” that it is assumed all female electroacoustic composers will conform to.² Consequently, the few female figures mentioned in electroacoustic histories are often held as being “exceptions” to the male rule, rather than early representatives of a large cohort of female composers who continue to comprise a significant part of the electroacoustic community today.³

This study will attempt to achieve three core aims: to investigate issues of gender and visibility as they pertain to female electroacoustic composers in Australia; to examine the multitude of approaches which contribute to the diversity of this musical field; and to collate methods to reduce current barriers to women’s visibility in the Australian electroacoustic community.

To investigate issues of gender and visibility, interviews with four composers touch on personal attitudes and experiences of how gender can influence the creativity and wider reception of female electroacoustic composers. These interviews are juxtaposed

¹ Kate Moore, “Breaking the Glass Ceiling” (keynote for New Emergences Event No. 5, Splendor, Amsterdam, December 12, 2015), <https://katemoore.org/breaking-the-glass-ceiling/>; Tara Rodgers, *Pink Noises* (United States: Duke University Press, 2010), 19.

² Rodgers, *Pink Noises*, 3; Moore, “Breaking the Glass Ceiling.”

³ Abi Bliss, “Invisible Women,” *The Wire*, April 2013, accessed October 31, 2016, https://www.thewire.co.uk/in-writing/columns/abi-bliss_invisible-women.

with the mixed attitudes of current literature, with the intention of contributing Australian opinions to the ongoing international discussion.

Through an examination of the composers' processes and creative philosophies, the interviews showcase each composer's highly individual style and approach, counteracting the perceived notion of an essentialist "female sound" in electroacoustic music.⁴ The composers described their own artistic practices in terms of their aesthetic values, techniques and composing timelines, allowing comparisons to be drawn between them.

Finally, to investigate current and future solutions to visibility issues in the Australian community, the composers' attitudes toward current representation issues are presented alongside those of existing literature, including the impact of family life, tertiary representation, accepted stylistic trends, quotas, and support networks. This serves to contribute Australian perspectives to current national and international discourse, and to create an understanding of how the experiences and attitudes of these four composers relate to current industry recommendations for achieving gender parity in the electroacoustic community.

Alex Chetverikov writes that the patriarchal history of electronic music "is permeated through language and through the spaces we inhabit and occupy."⁵ This study will contribute to the ongoing task of re-positioning female composers to feature more prominently in the Australian electroacoustic community, and, ultimately, to inspire and encourage upcoming female artists by disbanding the unconscious assumption that electroacoustic talents are a male preserve.

At present, only 27% of active Australian composers are female.⁶ Acts including female artists made up 16% of the overall

⁴ Virginia Caputo and Karen Pegley, "Growing Up Female: Retrospective Thoughts on Musical Performance and Meanings" (paper presented at Feminist Theory and Music: Toward a Common Language conference, Minneapolis, Minnesota, June 1991).

⁵ Alex Chetverikov, "The gender bias against Australian women in electronic music, and what we must do to fix it," *The Brag*, June 15, 2017 accessed June 16, 2017, <http://thebrag.com/the-gender-bias-against-women-in-australian-electronic-music-and-what-we-must-do-to-fix-it>.

⁶ Liza Lim, "Luck, Grief, and Hospitality," 2.

line-up from Australia's seven largest electronic music festivals in 2016 and 2017.⁷ International experiences are similar; electronic artist network female:pressure reports that, from 2015 to mid-2017, female or mixed-gender artists made up only 22% of surveyed electronic music line-ups worldwide.⁸ Surveys of music labels reveal similar statistics, with female and mixed-gender artists making up just 18% and 14.8% of signed artists respectively.⁹ This trend extends to funding: composer Kate Moore highlights how a prominent funding body, kept anonymous, commissioned one female composer out of twenty available commissions in one year. This sole female composer was also awarded a significantly smaller sum than her male peers.¹⁰

On the Represented Artist Lists of the Australian Music Centre (AMC), only three female composers are represented as Sound Artists, compared to ten male artists.¹¹ In other music technology-related careers, such as sound engineering, Australian women are so under-represented as to be almost entirely absent.¹² These numbers change little as women progress in their careers; similar to composer demographics, Rae Cooper and Sally Hanna-Osborne note that women occupy just 28% of senior and leadership roles in the music industry.¹³ The recent Australian report *Skipping a Beat* also found that inherent barriers exist for women, and even more so for female minority groups, who try to access these positions.¹⁴

Female composers currently comprise half of all composition students in late high school and the beginning of tertiary study.¹⁵ However, there is an increasing ratio of male to female

⁷ Chetverikov, "The gender bias against Australian women in electronic music."

⁸ female:pressure. *FACTS 2017*, (n.p., female:pressure, August 2017), 6, 13.

⁹ female:pressure. *FACTS 2015*, (n.p., female:pressure, 2015), 5.

¹⁰ Kate Moore, "Breaking the Glass Ceiling."

¹¹ "Represented Artists," *Australian Music Centre*, accessed October 5, 2017, <https://www.australianmusiccentre.com.au/artists>.

¹² Cooper and Hanna-Osborne, *Skipping A Beat*, 6.

¹³ *Ibid.*, 2.

¹⁴ *Ibid.*, 3.

¹⁵ Liza Lim, "Luck, Grief, Hospitality — re-routing power relationships in music" (keynote for Women in the Creative Arts conference, Canberra, Australia, August 11, 2017), 2.

composition students in Australian tertiary institutions.¹⁶ This is more likely to be skewed towards male students in traditionally male-dominated sectors, such as music technology, where it is compounded by a trend toward male composition staff, including multiple cases of an all-male staff.¹⁷

Critical to a composition student's education is example-based learning, experienced through one-on-one mentorship, listening recommendations and works prescribed for analysis. Moments of acute inspiration frequently come when considering the works and processes of others. According to Julian Knowles, the universities housing these students have almost always hosted or supported the events considered to be most pivotal in the history of electroacoustic music.¹⁸ The absence of female academic-composers in these environments excludes female perspectives from this master narrative, and suppresses their visibility to younger generations.

The available information clearly shows an under-representation of female composers and artists in the public eye; strategic decisions and creative "values and practices" in the Australian tertiary and industry environment therefore continue to be led by male opinions.¹⁹ These statistical snapshots of inequality do not exist in isolation, but are interwoven, reflecting a larger diversity gap in musical Australia.²⁰ This gap creates a feedback effect; if women are underrepresented in the wider music technology community, then their works are underrepresented to current and aspiring music technology students. The first of many questions is, how do

¹⁶Catherine Strong and Fabian Cannizzo. *Australian Women Screen Composers: Career Barriers and Pathways* (Melbourne: RMIT University, 2017), 57.

¹⁷ Ibid., 54–55. This research report, covering gender issues and relations in Australian screen composing, surveyed eight different tertiary institutions in Australia. Where possible, they included institutions which taught screen composition.

¹⁸ Julian Knowles, "Setting the Scene: Developments in Australian Experimental Music Since the Mid-1990s," in *Experimental Music: Audio Explorations in Australia*, ed. Gail Priest (University of New South Wales Press, 2009), 15.

¹⁹ Ibid.

²⁰ Sara Ahmed, *On Being Included: Racism and Diversity in Institutional Life* (Durham: Duke University Press, 2012), quoted in Liza Lim, "Luck, Grief, Hospitality," 10.

we increase the volume of the many female voices within the Australian music technology community?

The gender disparity across electronic music genres can be identified quantitatively, by publishing empirical data such as the statistics above, or qualitatively, by communicating individual experiences.²¹ Such experiences are described in Tara Rodgers' anthology of extended-form interviews, *Pink Noises*, which provides female electronic artists with a platform to communicate their creative process.²² Similar methodologies are observed in the projects of Andra McCartney and Ellen Waterman, whose "open-ended" questions to female sound artists aim to unearth pertinent "themes or issues" for further discussion and analysis,²³ and Owen Chapman, whose equal gender ratio in participants was chosen to display "a balance of approaches and compositional styles."²⁴

Inspired by these approaches, composers Fiona Hill, Cat Hope, Leah Barclay, and Kezia Yap took part in an hour-long open discussion. These interviews required that the composers consider their artistic process and techniques, explore perspectives on gender within electroacoustic music, and discuss solutions to current obstacles for female electroacoustic composers. The contents of these interviews were grouped according to recurring salient themes, and presented alongside current literature discussing the same. The range of ages, institutional affiliations and geographic locations of the four participants enabled a diversity of insights and experiences to be gathered in the interviews.

- Fiona Hill is a Sydney-based electroacoustic and film composer. Her work creates a dialogue between the

²¹ Moore, "Breaking the Glass Ceiling."

²² Rodgers, *Pink Noises*, 2–4.

²³ Andra McCartney, "In and Out of the Studio," *Andra McCartney*, accessed September 10, 2016, http://www.andrasound.org/archive/in_and_out_studio_ENG.pdf.

²⁴ Owen Chapman, "Selected Sounds: A Collective Investigation into the Practice of Sample-Based Music" (PhD diss., Concordia University, 2007), 44.

natural and industrial, and often involves live and instrumental elements.²⁵

- Cat Hope is an experimental composer whose prolific output frequently incorporates live and embedded electronics. Hope currently holds the position of Professor of Music at Monash University.²⁶
- Leah Barclay is a research-focused sound artist and composer. Her creative practice is heavily intertwined with acoustic ecology. Barclay is also a research fellow at the Queensland Conservatorium Research Centre.²⁷
- Kezia Yap is a sound artist and composer recently graduated from the Sydney Conservatorium of Music. Alongside instrumental works, Yap creates mixed media works and sound installations.²⁸

Moore describes art and culture as an “earpiece” to the current world.²⁹ The multifaceted discipline of electroacoustic composition can equally reflect the experiences and aesthetic interests of women, and the individual female composers who create it. By amplifying the voices of Australian female electroacoustic composers, new and inspiring visions of this genre are discovered, validated, and made accessible to future generations practising music technology.

Gender

The composers expressed wide fluctuations in opinion as to the role of gender in their artistic expression. These mirrored substantial differences in opinion throughout the musicology community.³⁰ Virginia Caputo and Karen Pegley assert the importance of recognising that, while approaches may diverge from

²⁵ “Noisy Women Commissioning Circle,” Ensemble Offspring, accessed June 25, 2017, <http://ensembleoffspring.com/media/news/noisy-women-commissioning-circle/>.

²⁶ <http://www.cathope.com>, accessed June 6, 2017.

²⁷ <http://leahbarclay.com>, accessed July 10, 2017.

²⁸ <http://keziayap.com>, accessed July 12, 2017.

²⁹ Kate Moore, “Breaking the Glass Ceiling.”

³⁰ Rodgers, *Pink Noises*, 17.

the male-coded norm, elements of female musicality differ radically from each other as well.³¹ This suggests that the belief that composers create according to their experiences, mentality or social conditioning, is variable between different people, and highly personal. Similarly, attitudes relating to the politics of gender within the electroacoustic and experimental community swung from the belief that it was virtually a non-issue, to ongoing frustration with a lack of visible female and intersectional artists.

Whether individual compositional styles are open to influences from gendered experiences, and whether this is perceivable, is yet to be proven. Amy Beth Kirsten argues that embracing this concept, specifically that compositional style can stem partly from lived gender experiences, risks creating a sense of “otherness.”³² Pegley counters that it is better to acknowledge “the multiplicity of experiences based on gender,” as well as other categories such as race, ethnicity, sexual orientation, etc.³³ Hill and Hope acknowledged this potential influence in their own work, speculating on possible gender differences in material and compositional style.

Hill: [The stories] that I’ve been drawn to, have been very women-centred issues... I think I am making choices there, whether they’re conscious or subconscious.

Barclay speculated on whether there are certain stylistic schools that produce starker differences between male and female composers, recounting one experience where physical spatialisation created the impression of a gendered stylistic divide in the audience:

³¹ Caputo and Pegley, “Growing Up Female,” 78.

³² Amy Beth Kirsten, “The ‘Woman Composer’ Is Dead,” *NewMusicBox*, March 19, 2012, <http://www.newmusicbox.org/articles/the-woman-composer-is-dead/>.

³³ Karen Pegley, “Gender, Voice and Place: Issues of Negotiation in a ‘Technology in Music Program,’” in *Music and Gender*, ed. Pirrko Moisala and Beverley Diamond (Urbana and Chicago: University of Illinois Press, 2000), 315.

Barclay: [There were] three electroacoustic works which were very much from that British school of spatial sound... Quite aggressive in their approach to spatialisation. And then they were accompanied by two works from female composers [who] took a much subtler approach to their spatialisation from different environmental field recordings.

This account, in which electroacoustic works by composers of different genders reinforces traditional gender stereotypes through compositional style, echoes Rodgers's discussion of how "aggressive" male-coded music technology practices are reflected in accepted compositional jargon: *cut, bang, trigger*.³⁴

Despite widespread reluctance to acknowledge any interplay between gender and composing style, Barclay also described experiences where the concept was both unofficially recognised, and used to discriminate against female electroacoustic composers.

Barclay: There was this perception from the male reviewers that we would have to put in a conscious effort to accept female applicants [to Biosphere Soundscape residencies].

Susan McClary argues that the current Western musical culture is deemed "universal" because it appeals to traditionally masculine practices, while Rodgers similarly claims that male-coded practices are widely viewed as more legitimate or important to the "master narrative" than those coded as female.³⁵ This suggests that if an inherent difference exists in some cases, it is subconsciously delegitimised. This is echoed in music technology education spaces, where female-coded learning styles can be devalued compared to male students' preferences.³⁶ This is compounded by a lack of

³⁴ Rodgers, *Pink Noises*, 7.

³⁵ Susan McClary, *Feminine Endings: Music, Gender and Sexuality* (Minneapolis: University of Minnesota Press, 2002), 130; Rodgers, *Pink Noises*, 12.

³⁶ Karen Pegley, "Gender, Voice and Place: Issues of Negotiation in a 'Technology in Music Program'," in *Music and Gender*, ed. Pirrko Moisala and Beverley Diamond (Urbana and Chicago: University of Illinois Press, 2000), 311, 314.

female teachers as role models, and the absence of works by female composers in the syllabus.³⁷

Other research argues that, while female composers do not compose differently, their contributions are viewed as inferior and are subsequently delegitimised.³⁸ A related phenomenon is observable in the Australian film composition community, where the belief that women are less apt at technical tasks could not be proven, but was assumed to influence some industry employment decisions.³⁹ In a survey of the works of nine female composers, Jill Halstead similarly comes to the conclusion that the “comparatively low public status of women composers are due to social, cultural and historical factors rather than to biological ones.”⁴⁰

Regardless of discipline, the presence of successful female composers in tertiary institutions allows students to relate their tertiary environment to the future music community, rather than accept the notion that female composers make no impact within the wider industry.⁴¹ The composers were each able to describe instances where, as emerging artists, the visibility of other female artists served as a source of encouragement and motivation for them to succeed.

Yap: A lot of the women composers in Australia are huge role models to me. Whether or not their music is the influencer, I think it’s more that they are working in the field...

Notably, where the role models’ genre or style was not evident in the composers’ own practice, they were still cited as figures of inspiration. This suggests that having visible female composers is a critically important way to encourage young artists, regardless of similarities or differences in style.

³⁷ Andra McCartney and Ellen Waterman, “In and Out of the Sound Studio: Introduction,” *Intersections* 262 (2006): 5.

³⁸ Rodgers, *Pink Noises*, 7.

³⁹ Strong and Cannizzo, *Australian Women Screen Composers*, 13, 24.

⁴⁰ Jill Halstead, *The Woman Composer: Creativity and the gendered politics of musical composition* (Routledge, 2017), x.

⁴¹ Hope, “Stepping Aside.”

Liza Lim affirms the need to acknowledge that there may be different strategies, genres and production techniques which are formed through the experiences of women.⁴² This is supported by the findings of Rodgers and McCartney through their investigations into the methods of electroacoustic composers; both found that their female subjects exhibited original and sometimes contrasting creative approaches.⁴³ Greater gender parity in visible academic roles could therefore encourage different techniques, terms and approaches to come to the fore of creative thinking, an important antidote to reports from McCartney of female music technology practitioners feeling “bracketed” by current mainstream approaches.⁴⁴

Hope: When there is that void [of information], it tends to create the idea of a canon of approaches, when there are a whole bunch of other ways.

Despite varying attitudes to gender as a driving factor in the formation of creative practice, each composer felt the need for higher visibility of women to bring about greater diversity of artistic expressions to the field. This raised the question of whether a survey of the participants’ composing styles would supplement the conversation on this topic.

Artistic Focus

The artistic focus of each composer was examined through discussions of aesthetic values, stages of the composing process, and the techniques and equipment used to create works.

Fiona Hill

Hill’s electroacoustic works seek to create an introspective awareness of the human environment through sound.

⁴² Andrew Ford, Liza Lim, Jeanel Carrigan, “International Women’s Day: Jeanel Carrigan and Liza Lim,” March 5 2017, *The Music Show*, produced by Patrick Cary, podcast audio, 27:15, http://mpegmedia.abc.net.au/rn/podcast/2017/03/msw_20170305_1130.mp3.

⁴³ Rodgers, *Pink Noises*, 2.; McCartney, “In and Out of the Studio,” 2.

⁴⁴ Rodgers, *Pink Noises*, 17; McCartney, “In and Out of the Studio,” 4.

Hill: I like the dichotomy of using industrial, heavy sounds, and the nature-inspired sounds... I guess that's at the base of my music: finding where a space is between that; where we exist as humans.

Hill's music heavily features what she calls the "old world and new": acoustic instruments, such as those of a featured ensemble, or prepared pianos, are recorded and transformed alongside field recordings to form Hill's hybrid sound worlds. The incorporation of strong rhythmic cells, not typically considered a staple of electroacoustic music, further individualises Hill's position within the genre, and reinforces her ability to fuse her practice with traditional music-making.

These explorations are heard while listening to audio-visual work, *Chromoson* (2010). *Chromoson*'s ten-channel spatialisation is a balance of fast-moving objects and slowly evolving, wide-set sound. In the movement entitled *Rhythmicpinknoise*, clear, spoke-like objects (example at 6'58") glimmer through the sound space, pushing through a thickly textured, tonal blend of modulated synths.

Hill's pleasure in experimenting with sound was evident in her habit of using light-hearted terms like "play," and "mucking," or "messaging around," as verbs to describe her approach to sound transformation.

Weaver: What does Music Technology mean to you?

Hill: Toys! Toys to play with, and ways to generate sounds that haven't been heard before... I feel like it is quite self-indulgent, in a way, because you're just finding sounds and playing with them and creating worlds.

Hill uses ProTools as her chief audio editing software, and then uses different plug-ins, such as GRM's Freeze, Pitch Cumulator, and IRCAM granular synthesis plug-in AudioSculpt. Hill tends to transform sounds in stages, recording her initial experimentations in real-time, and then isolating segments to explore further.

Control over sound sources varies according to the aims of piece; if working with instrumental ensembles, for example, Hill is

much more specific about the sounds she transforms and gathers through field recordings.

Hill: I just kind of imagine it in my head. I'm playing around with the sounds on the computer, and then I can hear the instruments in my head going along with it, and how it's all going to work.

Hill begins a new work with deep consideration for the “underlying meaning,” using this core concept to inform her approach to structure, sound material, and the interplay of live and recorded elements.

Cat Hope

Hope's practice is driven by artistic, rather than technological, innovation, allowing her to explore her fascination with certain concepts and techniques. Hope listed quite specific elements which drive her compositions: timbral interactions of electronics and instruments; low frequencies; drones; and glissandi. Vertical and horizontal space is also important within Hope's works, enabling explorations of structure and timbre.

Hope: I love the way that glissandi create these aleatoric approaches to harmony, and where the different instruments intersect. So, I'd say that the drones, noise, glissandi and timbral stuff would be key.

Hope's interest in low frequency tones has produced an anthology of different functions in her music, from vast, textural noise walls in her bass guitar ensemble, to “subtle and warm” tones which complement and intertwine with the voices of live instruments, exemplified by pieces such as *Liminum* (2012), and *Cruel and Usual* (2012) which both use bass amplifiers to transpose and reproduce instrumental samples at different points within the work.

Hope often spends time in reflection on external media, such as art or news stories, before noting down initial concepts. “Drawing” is apt to describe Hope's visual realisation of sound within graphic scores, which is unique and intuitive. Described as “kinds of

shapes,” lines with different curves, widths and angles, circles, dots and myriad symbols dance across a horizontal plane via the Decibel score player app. Developed by Hope and other artists from the Decibel new music ensemble, which was founded by Hope in 2009, this app allows Hope’s and other graphic scores to be followed in real time from multiple devices.⁴⁵

Hope’s approach to electronic elements in her work balances conceptual control with the creative freedom of performers and software, almost forming the antithesis of “fixed media.”

Hope: Who knows, in fifty years there may be some other better way to perform what I’ve signaled on the page... I don’t want it tied to a software.

Hope welcomed the aesthetic differences that performers bring to works through different instruments, interpretive methods, or electronics, facilitating live performance by any artist.

Kezia Yap

Yap’s musical focuses are precisely meditated, communicated through three overarching concerns: timbre, texture and interaction. The former two are of utmost importance in Yap’s works; the energy created from interactions between the music, its medium, the space and the listeners is then a flow-on effect. Yap’s electroacoustic works tend to sound complexly tonal, with layers of pitches creating rich chordal clusters.

Yap described her electroacoustic output as “instrument-focused,” and indeed, uses her electroacoustic capabilities to augment the tonal possibilities of real instruments. In this way, Yap approaches music technology as a conduit for her core creative values.

Yap: Because I’m so interested in timbre and textures and space, music technology for me is a way that I can explore more sounds and extend my exploration into tone colour.

⁴⁵ Cat Hope and Lindsay Vickery, “The Decibel Score Player — A Digital Tool for Reading Graphic Notation” (paper presented at TENOR, Paris, France, May 2015).

This exploration is evident in works such as *Orbit* (2015), for vibraphone and tape. The timbral and textural capabilities of the vibraphone are enhanced by subtle electronic transformations. Masterful transitions from tape to live instrument leave the listener trying to pinpoint where the two intersect, giving the impression of a multitude of quiet vibraphones at some points; at others, a solo instrument producing a seemingly impossible tonal intensity.

Yap does not view herself as a composer of predominately one genre, or even style. Being accomplished in both electroacoustic and instrumental realms, Yap's versatility shapes her musical identity. Likewise, her composing process evolves with each new work. Yap may begin with a melodic idea, or visually realise her ideas through drawing, like *Hope*. Regardless of the approach, working out an overall structure is an integral step to guide Yap through the process.

When creating electroacoustic works, Yap prefers to experiment initially, rather than working to a pre-determined aesthetic plan.

Yap: For me, electronics is all about sound exploration, and figuring out what is possible with electronics, rather than having a sound in mind and working to that sound.

However, Yap often uses Max MSP to create her electroacoustic sound worlds. Rather than experimenting in this program, Yap prefers to develop a concept, and then manipulate the program to meet it.

Yap: I didn't see the application, the art, within the rote-learning of Max... But how I learnt was [by] having a project that I wanted to do, and then using Max as a tool to achieve that.

Leah Barclay

Barclay's craft is social at its core, aiming to engage as wide an audience as possible to create a sense of awareness, and wonder, for the world's many unique environments.

Barclay: My work revolves around the idea of inspiring communities to listen to the environment. [Creative work]

can play a key role in responding to climate change and changing environments.

Barclay's interdisciplinary approach to music enriches her understanding of creativity. Engagement with listeners is facilitated through multiple technological avenues; an example is found in the recently launched collaborative AURALITY app for mobile, which allows artists to create and add their own "Soundwalks" (immersive, location-based sound installations) in their respective geographical locations.

Barclay's unique style involves prioritising field recordings over other sound sources in her music.

Barclay: I've always made a point that the field recordings were the focus, and the instrumentalist was the accompaniment, as opposed to the other way around.

The equipment and recording techniques used to gather her sounds are intrinsic to Barclay's work. While choosing initial recording locations is an "intuitive process," adhering to general guidelines, such as recording in isolated spaces, and using suspended platforms such as boats, helps to produce effective field recordings with minimal sound pollution or artefacts. Other variables, such as the depth of underwater habitats, are also considered before choosing her recording location.

After initial recording projects have been completed, Barclay often leaves recording equipment with local communities to ensure the continued monitoring of acoustic environments.

Deep respect and curiosity for exploring natural environments, especially submarine ones, is evident in Barclay's discussion. She recounts breathtaking experiences: recording breaching dolphins in the Amazon; discovering the intricate nature of sounds produced by aquatic insects or snapping shrimp. Often, Barclay aims to preserve the integrity of the recorded location to communicate a distinct sense of place to listeners.

Barclay: I'm not going to manipulate the sounds to the point that they sound like creatures that don't exist... I

compose that soundscape in a way that draws people into the experience of being there.

Barclay uses filtering software, such as Izotope, to reduce noise in recordings as an initial step in her process. Barclay also transforms sound through granular synthesis using the program Kyma.

This small sample of artists shows an individual approach toward music technology, and a subsequent diversity of artistic focus and content in all four composers' works. These myriad styles of composition stand in contrast to the narrative of a singular "female" voice in electroacoustic music. Considering the power of surveying these four individualistic approaches as proof against the singular stereotype, the potential of increasingly visible female composers to affect the psychology of emerging artists becomes pertinent. This calls into focus the need to generate and implement solutions to augment visibility in the future, and indeed, to minimise current obstacles to accessibility and dispersion of music in the electroacoustic community.

Future Visions

The participants relayed several suggestions and experiences of current initiatives to grow opportunities within the female electroacoustic community. These comments and ideas were considered alongside recommendations from industry reports and individuals.

Key to addressing disparities in composer representation is a deeper enquiry into composers' domestic and familial lifestyles, which will inform more flexible networking and employment options.⁴⁶ The Australian *Skipping A Beat* report, which makes this as its first recommendation to bring about equal representation in the industry, believes that existing data in this area is unsatisfactory.⁴⁷ The 2016 *Equal Arts* paper explores the domestic

⁴⁶ Sally Macarthur, Cat Hope, Dawn Bennett, "The sound of silence: why aren't Australia's female composers being heard?" *The Conversation*, May 31, 2016, accessed June 26, 2017, <https://theconversation.com/the-sound-of-silence-why-arent-australias-female-composers-being-heard-59743>; Hope, "Stepping Aside."

⁴⁷ Cooper and Hanna-Osborne, *Skipping A Beat*, 11.

responsibilities held by male and female arts workers in Australia: 82% of male arts workers reportedly spend no time performing household responsibilities, while a much lower 49% of female arts workers reported the same. Conversely, 42% of female arts workers reported spending up to half of their available working time on household responsibilities, while only 16% of male arts workers did the same. As such, female artists across the board are experiencing relatively diminished opportunities for time to create.⁴⁸ Times and locations where industry networking takes place, such as at gatherings after performances or outside of traditional working hours, often exclude composers with childcare responsibilities.⁴⁹ As a result, the intensive networking which is necessary to effectively self-promote can be hard to achieve for female composers with children.⁵⁰

Hill discussed how her financial and vocational needs as a composer changed once becoming a mother.

Hill: There are financial barriers, especially as you get older and have children, and it becomes harder to then say, “well it doesn’t matter if I can’t pay the rent from week to week.”

Female career trajectories across all professional disciplines are most likely to be affected by having children.⁵¹ Jan Browning reports that women in the arts earn, on average, two thirds of a male artist’s wage, compounding financial concerns.⁵²

The International Study of Women Composers, begun by Dawn Bennet, Cat Hope, and Sally Macarthur, aims to address the current lack of data on the working lives of female composers, a current research blind-spot both in Australia and internationally.⁵³ The researchers believe that this data will facilitate necessary

⁴⁸ Jan Browning, *Equal Arts*, Victoria: Victoria Women’s Trust, April 2016, 4.

⁴⁹ Hope, “Stepping Aside.”

⁵⁰ Macarthur, Hope, Bennett, “The sound of silence.”

⁵¹ Strong and Cannizzo, *Australian Women Screen Composers*, 48.

⁵² Browning, *Equal Arts*, 5.

⁵³ Maeve Marsden, “Call out for participants: survey of women composers,” *Music Australia*, December 8, 2015, accessed August 30, 2017, <http://musicaustralia.org.au/2015/12/call-out-for-participants-survey-of-women-composers/>.

changes to the ways in which female composers are funded and supported.⁵⁴ These changes may involve the altering of certain commission criteria, composition deadlines, and concert formats, all of which may have worked for a historically male-dominated applicant pool, but often do not account for the different needs of women in the industry.⁵⁵ Other recommendations include embedding childcare grants into commissions, and introducing arts-focused childcare services to accommodate composers' elastic and often unorthodox working hours.⁵⁶

Female composers who feel excluded from male-dominant learning and production spaces miss opportunities for collaboration, networking and the communication of ideas.⁵⁷ Vanessa Reed, Chief Executive of the PRS for Music Foundation, is adamant that "input from those who currently hold the most power" is a key component of facilitating changes to this current exclusive culture.⁵⁸

While at university, Yap found her male mentors to be extremely important in enabling her initial explorations in music technology:

Yap: My lack of technological skills was a barrier, but I had a really good teacher who helped me work through that... [He] explained everything to me and made sure that I understood.

Cooper and Hanna-Osborne find that individuals in key roles wield considerable power in shaping the mentality of organisations toward gender equity issues; as such, it is crucial that men in

⁵⁴ Macarthur, Hope, Bennett, "The sound of silence."

⁵⁵ Emily Doolittle, "Composing and Motherhood," *NewMusicBox*, April 26, 2017, accessed September 29, 2017,

<http://www.newmusicbox.org/articles/composing-and-motherhood/>;
Macarthur, Hope, Bennett, "The sound of silence."

⁵⁶ Emily Doolittle, "Composing and Motherhood.," Browning, *Equal Arts*, 6.

⁵⁷ Chetverikov, "The gender bias against Australian women in electronic music."

⁵⁸ Vanessa Reed, "Gender Equality in Music: The Beginnings of a New Movement Involving Women and Men," *Huffington Post*, June 15, 2016, accessed June 1, 2017, http://www.huffingtonpost.co.uk/vanessa-reed/gender-equality-music_b_10475886.html.

positions of power actively support emerging female composers.⁵⁹ This must take effect through both personal interactions, and the actions of organisations, i.e. more balanced concert and festival programming, and through the establishment of quotas.⁶⁰

Quotas are often considered problematic due to difficulties arising from social stigma.⁶¹ A belief exists that categorising composers by gender is an offensive action which both prevents normalisation of “women composers,” and creates a culture of positive discrimination in which works are programmed based on the sex of their creator, rather than compositional merit.⁶² Discussion of gender quotas produced contrasting opinions among the composers, and a conversation about their positive and negative qualities. Yap articulated the concern of gender versus merit:

Yap: It’s great, on one hand, that people are really focused on pushing women up. As well as that, it’s kind of like... I want to get opportunities because I am good at what I do.

Barclay also highlighted how the aims of gender quotas can be misinterpreted, furthering assumptions that quotas work only to enable composers without the musical “talent” to succeed on their own:

Barclay: Older male colleagues will write reviews like, “I didn’t really like this piece... but it came from a female

⁵⁹ Cooper and Hanna-Osborne, *Skipping A Beat*, 12; Lim, “Grief, Luck, Hospitality,” 12.

⁶⁰ Cooper and Hanna-Osborne, *Skipping A Beat*, 12; Cat Hope, “Make for Change: Challenging Gender Issues in Electronic Music,” (Keynote for Australasian Computer Music Conference, University of Technology Sydney, Australia, November 19, 2015), <http://www.listenlistenlisten.org/make-for-change-challenging-gender-issues-in-electronic-music-keynote-at-the-australasian-computer-music-conference-uts-november-19-2015-cat-hope/>.

⁶¹ Rosalind Appleby, “Australia’s female composers are having a moment. We need to harness that energy,” *The Guardian*, July 27, 2017, accessed July 27, 2017, <https://www.theguardian.com/music/2017/jul/27/australian-women-composers-are-being-brought-into-the-spotlight-and-not-a-moment-too-soon-and-we-should-embrace-it>.

⁶² Kirsten, “The ‘Woman Composer’ Is Dead.”

composer so I think we should put it through,” which is highly problematic.

However, this argument relies on the assumption that women have historically had the same opportunities as men, whereas Lim asserts that this “structural luck” is often not available in the same abundance for women.⁶³ Furthermore, it supports the flawed logic that female composers have been, and continue to be, passed over simply due to a lack of compositional merit.⁶⁴

Gender-equal funding criteria is believed to build a “stronger, more dynamic” Australian music industry.⁶⁵ Hope believes that, while quotas are a “blunt instrument” and only a “short-term” solution, the benefits of hosting diverse genders, artistic approaches and other factors in key positions impacts positively on everyone within the electroacoustic community, regardless of gender.⁶⁶

Lim too affirms that initially, “quotas create a space for talent to rise up and come through.”⁶⁷ The *Skipping a Beat* report’s findings on the “entrenched” nature of the Australian music industry point out that the AMID Power 50’s top ten most powerful music industry figures are “overwhelmingly male,” and many of them have appeared there in each of the five years since its inception.⁶⁸ This lack of position renewal in top roles creates a gendered stalemate, preventing opportunities for women to ascend to strategic roles.

Solid support networks play a large role in composer success, and reap creative benefits for both emerging and established music technology practitioners.⁶⁹ Catherine Strong and Fabian Cannizzo suggest the implementation of women-based mentor and internship programs for Australian composition students, while Lim speculates on the possibility of “a national collective for

⁶³ Halstead, *The Woman Composer*, vii; Lim, “Grief, Luck, Hospitality,” 11.

⁶⁴ Halstead, *The Woman Composer*, x.

⁶⁵ Cooper and Hanna-Osborne, *Skipping A Beat*, 11–12.

⁶⁶ Hope, “Make for Change.”

⁶⁷ Lim, “Grief, Luck, Hospitality,” 11.

⁶⁸ Cooper and Hanna-Osborne, *Skipping A Beat*, 10.

⁶⁹ Strong and Cannizzo, *Australian Women Screen Composers*, 44; McCartney and Waterman, “In and Out of the Sound Studio,” 11.

women in sound.”⁷⁰ For Hope, “community” is an important structural and creative term, describing her approach to education and music-making:

Hope: I’m very sensitive to this idea of power in institutions... It’s not necessarily about playing together, but you share the opportunities, creating environments where you’re both proud to be part of it.

This suggestion of a horizontal mentorship structure depicts a community where emerging and established composers work and communicate freely. Hope expanded upon this concept in her keynote for the 2017 Women in the Creative Arts conference, advocating for “alternatives to the status quo:” safe, interactive communities for female-identifying and non-binary composers, where it is possible for experimentation to occur without fear of industry dismissal.⁷¹ Such communities can increasingly be found online, where informal support networks and creative exchanges create a sense of mentorship for female composers, and allow critical networking to occur on the composers’ own terms.⁷²

Within electroacoustic music and associated genres, it is necessary to expand definitions of innovation and creativity to better include the myriad artistic and technological approaches used by female composers and sound artists.⁷³

Anecdotal evidence reveals that female music technology students often feel they must adapt to male-dominant creative attitudes, or risk becoming “invisible.”⁷⁴ Rodgers reports that these dominant trends in electroacoustic music are centred on “precision and control,” as well as technological innovation.⁷⁵ Nevertheless, Barclay and Hope asserted that, in the multi-genred realm of

⁷⁰ Strong and Cannizzo, *Australian Women Screen Composers*, 55; Lim, “Grief, Luck, Hospitality,” 13.

⁷¹ Hope, “Stepping Aside.”

⁷² *Ibid.*

⁷³ McCartney and Waterman, “In and Out of the Sound Studio,” 10.

⁷⁴ Danijela Bogdanovic, “Gender and Equality in Music Higher Education,” United Kingdom: The Open University, May 2015, 12, quoted in Strong and Cannizzo, *Australian Women Screen Composers*, 53.

⁷⁵ Rodgers, *Pink Noises*, 8.

electroacoustic composition, there are countless individual methodologies which inform composers' aesthetic and artistic processes:

Hope: There's a tendency to think that it's all about the equipment and your technical knowledge... You've got to throw that away.

Normalising and encouraging experimental processes in education institutions, where standard creative approaches are often reinforced, is vital to equally encourage approaches where technological innovation and other current aesthetic trends are not necessarily prioritised.⁷⁶

Hope: Other than visibility, I think that there's another aspect to that [the benefits of female music technology staff]: different approaches to things.

There is, therefore, a need for educators to acknowledge and address how the classroom, which often includes an unequal ratio of male to female educators, instils unequal gender standards for students.⁷⁷ Strong and Cannizzo found that the presence of female composition lecturers in tertiary institutions has been observed to increase the confidence of female students, consolidating recommendations from Cooper and Hannah-Osborne that mandatory education programs be implemented to encourage diversity both in staff and workplace practices.⁷⁸ Hence, in introducing more female staff to the music technology space, female students can feel that their creative contributions are better understood and received by a more balanced collective, and encourage truly authentic approaches free of the historical pressure to conform to established styles.⁷⁹

Moving forward, Reed prioritises awareness of the many individuals, initiatives, and positive movements which continue to

⁷⁶ McClary, *Feminine Endings*, 115.

⁷⁷ Strong and Cannizzo, *Australian Women Screen Composers*, 55.

⁷⁸ *Ibid.*, 55–56; Cooper and Hanna-Osborne, *Skipping A Beat*, 12.

⁷⁹ McCartney, "In and Out of the Studio," 4.

strive for gender parity in the music industry.⁸⁰ In Australia, unequal gender divisions in the art music community have already inspired action through educational opportunities, panels and increased attempts to achieve gender parity, such as APRA AMCOS' equal gender funding initiative.⁸¹ In 2017, MusicNSW and FBi radio presented the Women's Electronic Music Showcase and Masterclasses in Sydney to create opportunities for female electronic artists and educate women on DJing, composing and music production systems respectively.⁸²

McCartney and Waterman found that successful female sound artists often received informal mentoring or instruction in music technology as children, demonstrating the benefits of introducing music technology to musicians before tertiary education.⁸³ Barclay described one instance where young female students were inspired to further explore music technology by attending workshops:

Barclay: There were ten-year-old girls who had never done field recording before, and one of them came up to me after the workshop and asked, “now, which shop do I buy a hydrophone from?”

Organisations such as Soundgirls.org and Lower Eastside Girls' Club in the United States offer free access to tutelage and mentorship for emerging female artists in music production; in Britain, the Yorkshire Sound Women Network holds workshops and events enabling women and girls to explore music technology, to great interest and success.⁸⁴ Australia has likewise made inroads to age-inclusive sound tuition: in 2017, the Information and Cultural Exchange launched the All Girl Electronic half-day

⁸⁰ Reed, “Gender Equality in Music.”

⁸¹ Lim, “Luck, Grief, Hospitality,” 13.

⁸² “Women in Electronic Music Showcase,” *MusicNSW*, accessed September 9, 2017, <http://www.musicnsw.com/wiem/>.

⁸³ McCartney and Waterman, “In and Out of the Sound Studio,” 6.

⁸⁴ Sophie Weiner, “Can Teaching Young Women to DJ and Produce Solve Gender Inequality in Electronic Music?” *Thump*, February 29, 2016, accessed September 9, 2017, https://thump.vice.com/en_uk/article/bmajww/can-teaching-young-women-to-dj-and-produce-solve-gender-inequality-in-electronic-music; “Welcome,” *Yorkshire Sound Women Network*, accessed September 9, 2017. <https://yorkshiresoundwomen.com>.

workshop in Parramatta, feeding into a free 8-week course providing mentorship and tutoring in sampling and music production to young women.⁸⁵

Collectives encouraging awareness of women in the electronic arts include *female:pressure*, Audible Women, and the Her Noise Archive, borne from the extensive research conducted by the Creative Research into Sound Arts Practice centre (CRiSAP), London.⁸⁶ *Shesaidso.org*, an online network of women in the music industry, aims to increase awareness of current gender issues, and inspire female artists to collaborate and exchange experiences across countries.⁸⁷

Barclay described how the gender landscape is changing, particularly within the field recording community; she cited many international residencies which have seen a surge in female applicants and finalists compared to their naissance, when only two or three participants identified as women. Barclay recalls multiple examples demonstrating the significance of increased accessibility to music technology, including enabling female artists from the Philippines to engage with music technology for the first time via Biosphere Soundscapes internships.

While this assessment of current literatures and the composers' own experiences identified many issues, they also offered current and future solutions to address barriers to visibility. The positive recollections of the composers regarding the importance of male advocacy, community building, and pre-tertiary level mentorship provide a viable way forward to make positive impacts on female artists.

⁸⁵ "Her Noise Archive, *Her Noise.org*, accessed September 5, 2017, <http://hernoise.org>; "All Girl Electronic 2017," *Information and Cultural Exchange*, 2017, accessed September 4, 2017. <http://ice.org.au/project/all-girl-electronic-program/>.

⁸⁶ "Female Pressure," *female:pressure*, accessed October 30, 2016, <http://www.femalepressure.net/fempres.html>; Gail Priest, "Audible Women, a directory of women in experimental music," *Audible Women*, accessed October 14, 2016, audiblewomen.com; "Home — CRiSAP," *CRiSAP*, accessed September 10, 2017, <http://www.crisap.org>.

⁸⁷ "About — She Said So," *Shesaidso.org*, accessed September 10, 2017, <http://www.shesaid.so/about/>. This is only a selection of the world's current prominent initiatives and individuals aiming to facilitate female exploration of sound and electronics.

Conclusion

This study facilitated a conversation between the participant composers and current opinions on gender-related matters in the music technology community. Notable topics were the debated existence of gendered styles in electroacoustic composition, including whether this was a positive point of difference or a basis for misplaced assumptions; the impact of damaging stereotypes for women in music technology; and the beneficial impact of having visible role models of the same gender. The composers drew upon their personal experiences to form opinions, which diverged most when discussing the power of gender to influence composing style. A prominent belief for all composers was the positive influence of having visible female role models, even where the role models' composing style did not correlate with the participants' personal creative aspirations.

Examining the artistic focus and process of the four composers revealed that each, while falling under the broad umbrella of electroacoustic composer, possessed a unique set of values and processes. While there were occasional shared values between some or all composers, the four individual working methods produced very different, but equally valid, electroacoustic results. These composers represent the multitude of approaches that are available to the electroacoustic artist; consequently, the juxtaposition of the four encourages a knowledge of this stylistic diversity within the electroacoustic genre.

The multiplicity of approaches observed cannot prove or disprove the notion of gendered creative styles. However, it disproves the notion of a singular "women's music," and highlights how female electroacoustic composers use their experiences and personal values to shape their output in fascinating and highly individual ways.

The composers' discussion of current barriers to involvement in the community and possible solutions were compared with current literature, particularly the *Skipping a Beat* and *Australian Women Screen Composers* reports. Many aspects of the composers' experiences and suggestions aligned with the issues found by these and other investigations and initiatives. These solutions included raising awareness of how current societal roles, such as the increased family workload on mothers, affect female composers

differently to men. Greater awareness of the need for different working schedules, networking opportunities and deadlines will help to inform adjustments to enable these composers to participate equally in the industry. The recommendation to introduce quotas to pave the way to influential roles and artistic opportunities for female composers was largely supported by the participants. Some uncertainty from Yap, however, reflected a wider ambivalence reported in the music community. The importance of male composers and other male community members acting to include female composers was stressed from many sources. Where music technology courses may favour particular approaches or aesthetic values, increasing diversity in music technology staff should encourage different creative approaches and learning styles in emerging composers.

The need to accurately communicate the rich artistic output of four electroacoustic composers was tempered by the space constraints of this study. It is recommended that readers seek out the works, writings, and other resources by these four composers to supplement their understanding of their process and aesthetic.

As mentioned by Hope, increasing diversity in the spotlight is “not just about women, it’s about everyone else too.” Indeed, by examining female and all non-binary composers as one marginalised group, the issue of categorising composers as “male” or “other” is exacerbated.⁸⁸ The visibility and artistic experiences of non-binary composers are equally important to address; as such, studies of greater diversity which focus on more specific non-binary gender categories are necessary.

This study could be easily expanded in multiple ways: by examining the individual artists in greater detail, by providing a clearer categorisation of the different sub-genres within electroacoustic music and exploring these, by undertaking a larger study with more Australian composers (as there are, of course, multitudes worth discovering), and by expanding the study to examine and compare the approaches of those who identify specifically as non-binary. While space is made for discussions of visibility in tertiary institutions, future studies could zone in on the

⁸⁸ Brin Solomon, “Breaking Binaries,” *VAN* 51 (June 2017), <https://van-us.atavist.com/breaking-binaries>.

Australian music technology classroom, through analogous or statistical information on current representation and attitudes.

The four composers interviewed have presented their highly individual working practices, their current opinions, and their future hopes for visibility in the Australian electroacoustic community. In doing so, they have amplified the Australian voice to join electroacoustic composers from other nations, who are also raising awareness of the practices and barriers of female electroacoustic composers. Furthermore, they have augmented the current issue of gender visibility in Australian music, and increased awareness of how issues for female composers affect current and future electroacoustic artists.

The arts are powerful forces for societal change, and in gender equality they will be no exception.⁸⁹ This study calls on the electroacoustic community to rethink attitudes and structures which inhibit equal visibility to maximise opportunities for diverse artistic styles to flourish. By normalising dialogue around electroacoustic composing processes and attitudes, we can increase the volume on female electroacoustic artists in Australia — and the world will listen.

ABSTRACT

Current data shows a striking lack of visibility for female composers in electroacoustic history, Australian tertiary institutions, and in the public eye. Combined with a lack of female composers in positions of influence, this creates barriers to promotion, funding, employment opportunities, and inhibits the ability of music technology students to access their creative insights. “Increasing the Volume” addresses this lack of visibility by examining how female electroacoustic composers approach their craft, and discovering ways to position their works more prominently throughout the industry, to the benefit of the composers and the wider music community. Interviews with four Australian composers revealed that, while personal perspectives toward gender issues varied, the need for accessible networks and visible female role models to encourage diverse artistic thought was acknowledged unanimously. The composers discussed barriers to

⁸⁹ Jan Browning, *Equal Arts*, 21.

female involvement in the Australian electroacoustic scene, and made recommendations to remedy these barriers. The interviews provided examples of the breadth of approaches of female composers in this genre, working to counter the essentialist notion of a singular female electroacoustic voice which is exacerbated through the current lack of representation. “Increasing the Volume” thus delivers current insights into the individualistic process of electroacoustic composition, and highlights further ways to facilitate female composer participation in Australia and the world.

AUTHOR BIOGRAPHY

Alexis Weaver is an electroacoustic composer based in Sydney, Australia. She fuses her classical music education with the ever-expanding area of music technology, and is currently undertaking a Master of Music at the Sydney Conservatorium after finishing a Bachelor of Music (Honours) in 2017. She has composed soundtracks for animation, short stories, radio, and the Sydney Fringe Festival. Her acousmatic and radiophonic works have been broadcast in France and Scotland, and recently featured on RMN Classical electroacoustic compilation album, *Electroacoustic and Beyond II*. Most recently, Alexis’ interactive installation and performance, *Frog Chorus*, was exhibited at the Australian Museum as part of their 2018 *Culture Up Late* nights.