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# WEAVING AN EXPANDED SONIC PRACTICE: PROPOSING A TEXTILIC SONIC METHOD

Callum G'Froerer

**Abstract:** This article discusses the way textile metaphors can act as catalysts for reflection in my practice as a trumpet performer and composer. Metaphors such as 'fibre', 'spin', 'yarn', 'ply', 'weave', 'loom', 'drape' and 'felt' are engaged as lenses through which the dynamic, contingent and tailorable interactions are made between sonic and extra-sonic elements in my expanded practice. The metaphors are engaged to shape instrumental techniques, improvisation, form, audiovisual media, physicality and spatial design. In this article, I describe how I developed my own expanded sonic practice by using Tim Ingold's concept of 'textility', expressed as a Textile Sonic Method (TSM). I demonstrate the application of this method using a subset of textile metaphors as the basis for the development of new double-bell trumpet techniques and applications in a range of compositions: *Gradient* (2020–23), for double-bell trumpet, live video and sound processing, co-composed with Olivia Davies and Nick Roux; *Untitled* (2021), for double-bell trumpet, portative organ and electronics, co-composed with James Rushford; and my own work *Charcoal VI* (2017), for spatialised, amplified double-bell trumpet. This article outlines the potential for the application of metaphor as a creative catalyst in an expanded sonic practice.

## Introduction

Structured improvisation works form the basis of my practice as a trumpet performer and composer. A range of electroacoustic and extra-sonic elements are used to create a bespoke trumpet-centric language. I curate a range of sonic and extra-sonic elements within a composition, while incorporating multiple simultaneous physical processes producing a trumpet technique. Sonic elements include the instrument itself, instrumental techniques, acoustic environments, audio software and hardware. Extra-sonic elements modulate these in various ways, and include my body, spatial design, audience presence and visual elements such as lighting or video projections.

I use metaphors drawn from textile concepts and practices as catalysts for reconfiguring these elements, uncovering the dynamic and contingent relationships between them. Textile metaphors include tactile, visual and theoretical concepts, drawn from textile creation

as well as philosophical realms. Some examples are *fibre*, *spinning*, *thread*, *yarn*, *weaving*, *texture*, *knots*, *unravelling*, *tension*, *drape* and *tailoring*. They provide an innovative methodology for evolving and analysing my practice. Like the textile weaver at a loom, I am in constant sensory engagement when creating, performing and analysing works, and these metaphors both capture and serve this type of engagement beyond established musical concepts.

Tim Ingold describes 'textility' as 'tactile and sensuous knowledge of line and surface that [guides] practitioners through their varied and heterogeneous materials'.[1] I have termed this application of textile-centric metaphors to music or a sonic practice a Textilic Sonic Method (TSM).[2] I prioritise the development of new instrumental techniques, gaining fluency in executing simultaneous layers of technique and the subsequent polyphonicisation of the trumpet.[3] TSM helps me understand and adjust the interaction of multiple physical processes or instrumental techniques performed simultaneously, and results in new techniques for performance and composition.

## An Overview of Making, Playing and Thinking through Textiles

TSM considers the performer–instrument interface as a network of woven interactions where explorations begin.[4] Components key to performance such as muscles, lips, tongue, fingers, breathing, stamina, tuning, rhythm and duration are all taken into consideration, creating a choreography determined to some extent by genre – I work across orchestral repertoire, jazz improvisation and contemporary repertoire. This 'field of forces', which Tim Ingold describes as being set up between the basket weaver and their materials, is an apt analogy for the performer–instrument relationship:

> [The basket's form] rather comes into being through the gradual unfolding of that field of forces set up through the active and sensuous engagement of practitioner and material. This field is neither internal to the material nor internal to the practitioner (hence external to the material); rather, it cuts across the emergent interface between them.[5]

Like configuring a loom to produce different weaving styles, I can disrupt or reconfigure elements in my practice, isolating and observing new sounds and techniques that come into being.

Solveigh Goett described the sensuality of making, noting that 'textile knowledge does not only sit, somewhat passively, on the skin, but it emerges in action, by thinking through the hands, be that in making or playing'.[6] My approaches to playing, composing, conceptualising, reflecting and visualising share this sensuality, and TSM encapsulates that approach. The embodied knowledge developed through the making of textile creations offers an enhanced vocabulary for other creative practices, such as music. Victoria

[1] Tim Ingold, *Being Alive* (Abingdon: Routledge, 2010), p. 211.
[2] Victoria Mitchell, 'Text, Textile Techne', in *Obscure Objects of Desire*, ed. Tanya Harrod (Norwich: University of East Anglia, 1997), p. 325; Ingold, *Being Alive*, p. 92; Elaine Igoe, *Textile Design Theory in the Making* (London: Bloomsbury, 2021), p. 41.
[3] Brian Ferneyhough, *Collected Writings* (Abingdon: Routledge, 1995), p. 68.
[4] Paul Craenen, *Composing under the Skin: The Music-Making Body at the Composer's Desk* (Leuven: Leuven University Press, 2014), p. 108.
[5] Tim Ingold, 'Making Culture and Weaving the World', in *Matter, Materiality and Modern Culture*, ed. Paul Graves-Brown (New York: Routledge, 2000), p. 57.
[6] Solveigh Goett, 'Materials, Memories and Metaphors: The Textile Self Re/collected', in *The Handbook of Textile Culture*, eds Janis Jefferies, Diana Wood Conroy and Hazel Clark (London: Bloomsbury, 2016), p. 128.

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Mitchell supports this by noting that 'the subtle nuance and fragile *playability of textiles as embodied metaphor* have contributed actively to the disruption of the authority of language… thus serving to enable senses other than sight to achieve an enhanced status'.[7] Textile metaphors enhance ways of understanding the combination of diverse elements as a process, not just a result. Musical concepts such as counterpoint or timbre can be paralleled with expressions from the textile world such as spin and weave. Textile theorist Elaine Igoe says Mitchell's concept of *textility* shows us that 'linguistically, we can understand the word "textiles" not simply as an object but as a schema'. This means that 'the construct of textiles is an approach to making knowledge manifested through the act of making itself. Be that making language, cloth or almost anything else.'[8]

## Textilic Expanded Sonic Practice

At this point it is useful to define an expanded sonic practice as it pertains to music. In her 1979 article 'Sculpture in the Expanded Field', art theorist Rosalind Krauss suggests that '*Sculpture* is rather only one term on the periphery of a field in which there are other, differently structured possibilities. And one has thereby gained the "permission" to think these other forms.'[9] Thus, an expanded artistic practice engages elements beyond what would normally define its accepted standard form.[10] My own practice has expanded through my study of various music genres, through exposure to diverse ways of creating art and, in particular, through collaborations with composers in the creation of new electroacoustic repertoire and experimentations with non-traditional modes of performance presentation. In my compositional practice, I challenge my relationship to the trumpet by thinking of it sculpturally; I shape its performance in my own compositions and steer its interaction with other media. Ciciliani calls this 'intertextuality': content introduced through extra-sonic media such as video projections or sculptural elements.[11] This in turn introduces affordances and constraints that push my practice into new domains,[12] and allows for broader artistic and thematic concepts to be explored that 'invoke the extra-musical, which activate[s] the non-cochlear'.[13] In this way I create and maintain an expanded sonic practice. An example of this is my work *Charcoal X*,[14] one of the 18 works that so far make up the *Charcoals* series, in which the trumpet physically interacts with different lighting elements (see Figure 1). CDs on the ends of the trumpet bells reflect spotlights on to the walls and influence the timbre of the instrument. Bending down to create reflections on the ground, I am forced to perform sounds on the undersides of the valves. In another section of the work, I play into illuminated

[7] Mitchell, 'Text, Textile Techne', p. 325, my italics.
[8] Igoe, *Textile Design Theory in the Making*, p. 41.
[9] Rosalind Krauss, 'Sculpture in the Expanded Field', in *October*, 8 (Cambridge: MIT Press, 1979), p. 38.
[10] Marko Ciciliani, 'Music in the Expanded Field: On Recent Approaches to Interdisciplinary Composition', in *Darmstädter Beiträge zur Neue Musik, vol. 24*, eds Michael Rebhahn and Thomas Schäfer (Mainz: Schott, 2017), pp. 22–35; Jennifer Walshe, 'The New Discipline', http://milker.org/the-new-discipline (2016) (accessed 12 October 2020).
[11] Ibid.
[12] James Gibson, *The Ecological Approach to Visual Perception* (New York: Taylor & Francis, 1979).
[13] Walshe, 'The New Discipline'.
[14] Callum G'Froerer, *Charcoal X*, for double-bell trumpet, CD, water bowls, spotlights and pre-recorded track (2017).

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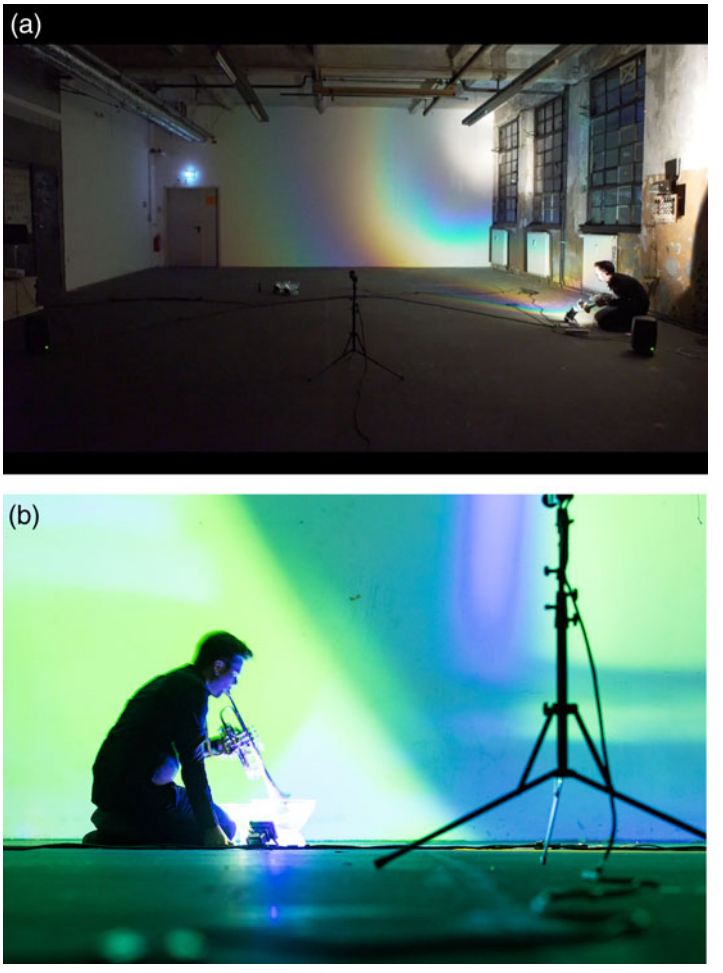


Figures 1a and 1b:
Moments from the Berlin performance of *Charcoal X* (2017). © Rob Loughlin 2017.

bowls of water, creating rippling refractions around the performance space. The trumpet always leads my investigations into the lighting elements, creating compelling interactions between instrument and media.

William Cole's description of expanded artistic practice implies a textile-like configuration, with phrases implying textilic approaches. He calls it 'a pluralistic, indeterminate, and open-ended field, a field of touch-like interchanges, overlaps, and continuities'.[15] When I perform, I am situated within a fibrous, haptic and reflexive sonic–textile environment. My instrument and I are an interwoven unit that can be unravelled and rewoven into different and dynamic configurations of individual, related elements. These include the parts of the body that operate the instrument; mental processes such as memory, concentration and metabolism; the shape and materials of the instrument; as well as the application of specific instrumental techniques. Textilic metaphors create a new method for expanding sonic practice, its creation, evolution and understanding.

[15] William Davy Cole, 'Touch as a Model for Expanded Musical Form', *TEMPO*, 73, no. 287 (January 2019), p. 67.

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Figure 2:
Kay Abude: *#prodgar (the production of garments)* (2015–16), grey lead pencil and fineliner pen on printout, 21 × 29.7 cm; after Richard Serra, *Verb List* (1967), pencil on two sheets of paper. Image provided by the artist.

## Exploring Textile Metaphors – Relating Actions to Self

Just as Ciciliani adapted Krauss' 'expanded field' to 'expanded practice', textile artists have adapted sculptural actions to textilic ones. Contemporary textile artist Kay Abude expanded on sculptor Richard Serra's infamous verb list of 'actions to relate to oneself, material, place, and process' (see Figure 2).[16] This resulted in an extensive list of making-related actions, illuminating overlaps and variations of terms and concepts between Serra's expanded sculpture practice and Abude's singular garment-making practice. It provides a template for applying metaphor to action, the central tenant of TSM.

I have gone through each action on Abude's document and considered its viability as a metaphor for an element of my expanded sonic practice. For example, Serra's action 'to crumple', elaborated in Abude's 'to wrinkle/to collapse', led me to experiment with both wrinkling and crumpling in trumpet performance. I did this by creating momentary fluctuations – wrinkles – in a clean sound and timbre. This then prompted further development – I gradually compressed my embouchure further, to the point of collapse, which is experienced by the listener as a crumpling of the sound. This first translation of metaphor to action (to wrinkle) led to a new action that was then described with metaphor (to crumple). The transition between them is also useful material for sculpting soundworlds in composition.

## The Application of TSM to Performer Composition

Now that I have described how I arrived at an expanded sonic practice through the adoption of textilic metaphors in my TSM, I will explain how I apply textilic metaphors when creating new works with the double-bell trumpet at the centre. The metaphors of spinning, plying, weaving, loom, felting and drape and their related processes are discussed in relation to the creation of the works *Gradient*, *Untitled* and *Charcoal VI*.

## Spinning: Sound Profiles on the Trumpet

Spinning is an effective metaphor for the fusion of diverse materials or elements, focusing on minute details. It also provides a model for

[16] Richard Serra, Verb List (1967); Kay Abude, #prodgar (the production of garments) (2015–16) in *Fabrik: Conceptual, Minimalist and Performative Approaches to Textiles*, ed Jane O'Neill (Sydney: Emblem, 2016), pp. 70–71.

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reconstituting or reconfiguring elements after a change in state. I developed a close knowledge of this process by undertaking a course in spinning, where I learnt and practised making yarn.[17]

Fibre is the base material used to create yarn (see Figure 3).[18] A single yarn may contain diverse types of material, affecting its structure, appearance and strength. In the creation of yarn, strands of fibre are twisted around each other when pulled towards the spinning wheel, and the resulting yarn wraps around a bobbin (a cylindrical spool). The outer texture of each individual piece of fibre determines how it grips on to another piece: sheep fleece fibres have microscopic barbs that help to grip to others, while plant fibre is generally much smoother. While constantly observing the fibres being spun together and feeling the tension of the yarn, the spinner controls the speed of the spinning wheel using the foot treadles, as well as how much fibre is being fed through their hands and on to the bobbin. Different fibres require certain preparations before spinning. While sheep's fleece can be spun directly after it is shorn, a plant such as flax must be broken down into smaller fibres that can be spun.

I adapted what I learnt from spinning to trumpet playing in the following ways. When playing single tones for long durations, I imagine my tone as a yarn being spun on to the bobbin. While playing a long, clean tone, I imagine the fibre being fed into the spinning wheel and imagine its colour profile or texture. Flax (linen) fibre is coarse, brittle and dull, while silk fibres are extremely strong, fine and reflective. I can visualise the tone that I am creating as a yarn that transitions between 100% flax to 100% silk, closely observing how I make that change. The push of the air from the lungs is akin to treadling the pedals of the spinning wheel; the air travelling through the small aperture in my embouchure meeting the mouthpiece is the point at which the fibres spin around each other. I can interpret the different fibres as distinct sound profiles, and the method of transitioning between them refines my awareness ability to gradually transform my sound.

The double-bell trumpet's most attractive feature is its ability to combine sound profiles, each bell prepared with a different mute to clearly differentiate the sound from each bell. I can control the mixture of muted sounds through activating both bells at once or by executing tremoli of different speeds. In this way, playing a prepared double-bell trumpet is akin to spinning a single yarn derived from two types of fibre. Trumpet preparations are something I engage across all the works discussed below, in different ways.

## Spinning, Plying, Weaving: Interacting Units Coming Together over Time

Single-ply yarn can be plied (spun again) with like or unlike yarns (see Figure 4) to create a composite yarn. Like spinning with varying types of fibre, plying varying yarns affects the overall appearance and behaviour. Plying is an effective metaphor for combining homogeneous and/or heterogeneous materials into units that interact with other units. These composite yarns can then be woven with each other

[17] In 2021 I participated in an Introduction to Spinning course through the Handweavers and Spinners Guild of Victoria, Australia. This was an excellent way to start getting a hands-on education in spinning fibre – the fundamental process in textile creation. I have also participated in an Introduction to Tapestry Weaving course, which, while it resulted in a more 'finished' textile piece and a more pictorial approach, offered less useful textile concepts.

[18] Fibre may derive from animal or plant sources or may be synthetic.

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Figure 3:
From left to right: raw unwashed sheep fleece, carded (combed) unwashed sheep fleece, raw unwashed alpaca fleece, carded unwashed alpaca fleece. This fleece was given to me to work with as part of my Introduction to Spinning Course at the Handweavers and Spinners Guild of Victoria in February 2021.

Figure 4:
Experimental spinning by Lexi Boeger, containing different textile concepts/metaphors. This thick-and-thin yarn contains spun silk and camel hair that is wrapped in delicate linen thread.[19]

into a larger structure that comprises a range of features and processes, akin to the multiple sonic and extra-sonic elements in my works.

I use this technique of plying different yarns in the six-hour performance-installation work *Gradient*, created in collaboration with composer Olivia Davies and projection artist Nick Roux.[20] In this work, video-projection software is constantly analysing my solo double-bell trumpet performance, determining the amplitude within six frequency bands (0 Hz–100 Hz; 100 Hz–300 Hz; 300 Hz–600 Hz; 600 Hz–1000 Hz; 1 kHz–2 kHz; 2 kHz–10 kHz), activated by the

[19] Lexi Boeger, *Hand Spun* (Beverly: Quarry Books, 2012), p. 75.
[20] Callum G'Froerer, Olivia Davies and Nick Roux, *Gradient* for double-bell trumpet, interactive video projections, and audio processing (2020–2023).

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Figure 5:
Callum G'Froerer performing on double-bell trumpet in a rehearsal of *Gradient*. © Andrew Clarke.

trumpet. Each frequency band corresponds to one image. As I activate one or more frequency bands images are highlighted in the projections, at a rate dependent on the amplitude level of their frequency band. Through my performance I am able to control these constantly morphing composite images, which are projected at a very large scale (see Figure 5).

Meanwhile, sound-processing software is constantly recording me and selecting sample windows (from 0.1–20 seconds) of what I have played to be played back over four speakers. These samples are randomly detuned, played in reverse or the repeated sample playback window contracts and expands. There are five simultaneous layers of sample playback drawn from my live performance, each layer a kind of fibrous material, that are spun together to create the generative morphing soundscape yarn.

The double-bell trumpet performance in *Gradient* is improvised, focusing on gradual timbral shifts, a focus that is also part of *Untitled* and *Charcoal VI*. This involves a trumpet technique in which multiple physical processes are performed at the same time, as in spinning. For example, over the course of five minutes, using circular breathing, I am able to combine and transition between embouchure compression, tongue articulation, rhythmic cycles, valve tremolo techniques and bell switching. The resulting technique and sound constitutes heterogeneous elements spun together into a dynamic and unique yarn.

Like a woven fabric, *Gradient* is a single unit containing several interacting units on different scales: the performer–instrument; audio-analysis software; video projections; sound processing; speaker spatialisation; the natural acoustics of the space; performer movement through the space; and the audience's presence. Like the weaver at the loom, I am in control, combining these yarns – themselves multifaceted – and achieving an even blend over time, as information is fed to me and as I shape that information according to my wishes. I make decisions on how I prioritise one component of the work over another as the work unfolds – the sonic, the visual or the relationship between live performance and software processing. My attention is constantly fluctuating between the music I want to sound and what I want to create in the interactive audiovisual environment.

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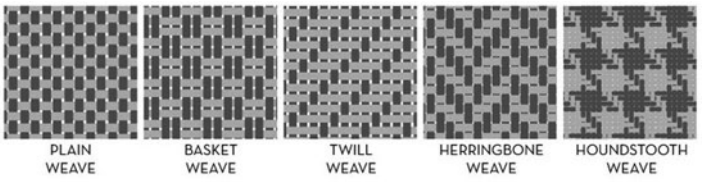


Figure 6:
Five standard weaving styles.[21] The black yarns are the warp threads, travelling vertically, and the grey yarns are the weft threads, travelling horizontally.

## Weaving, the Loom, and Felting: Formulations for Electroacoustic Variation

*Weaving* configures separate yarns together. Different weaving styles result in different appearances and textures, as well as different levels of tension the yarns exert on each other (see Figure 6). Spinning and weaving function similarly by bringing disparate materials together, resulting in a new structure, though weaving does not rely on fibres gripping together. Rather, it requires a loom that configures warp yarns that travel vertically, and the weft yarns that travel horizontally. The warp yarns are set in place to be stationary, while the weft yarns are threaded under and over the warp.

Felting is a far less structured action than weaving, as individual fibres are bonded using moisture, temperature and sometimes compression. The layered fibres stick to each other and there is a high degree of 'loft', or air trapped in the resulting material, creating a cushiony effect. Felting offers a compelling metaphor for contact between and denaturing of material/s (see Figure 7). Felting involves chance processes since the process is not able to control each fibre's direction, resulting in a variety of different outcomes.

I co-devised a new structured improvisation work for double-bell trumpet, portative organ and electronics with James Rushford, *Untitled* (see Figure 8). One bell of the double-bell trumpet was prepared with a harmon mute, its signal routed through a small analogue synthesiser and delay pedal, panned towards one speaker. The second bell was prepared with a cup mute, panned towards the other speaker. Rushford alternated between using the bellows and manually blowing into his instrument. This allowed him a wide repertoire of articulation techniques and brought the organ closer to the sound of the trumpet. Rushford played a small analogue synthesiser to augment the sounds of the organ.

The first section of the work consists of a repeated pitch sequence that we played slowly and without exact synchronicity, using subtle timbral and electronic effects to ornament the held pitches. The formality of the sequence represents the regularity of loom weaving; however, the variations in timbre are akin to different materials being spun into the woven yarn. The second section of the work has the simple, open instructions 'low – high – low – high', which create a process akin to felting. The combination of randomness and controlled decision-making throughout the improvisation resembles the thick and thin sections of felted yarn – literally called 'thick–thin' yarn (see Figure 9). Yarn's capacity to be felted opens up many metaphors within one type of material, a site of dense interaction.

The third and fourth sections repeat the first and second and feature an extended sequence of pitches with frequent timbral

[21] https://successfulfashiondesigner.com/types-of-weave-structures/ (accessed 10 November 2021).

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Figure 7:
Loose coloured wool fibres ready to be felted.[22] These fibres will be submerged in hot water, then pressed, then submerged in cold water to set the structure.

Figure 8:
Callum G'Froerer and James Rushford performing *Untitled*, for portative organ, double-bell trumpet and electronics, at the New North concert series in Melbourne in May 2021. © New North 2021.

transformation and more electronics than earlier, again returning to the plying approaches, but with additional units being added. Exploring unison is the key compositional tool in the work, reflecting these processes of yarning and plying, bringing together strands and units.

On a weaving loom, horizontal weft yarns are intersected by vertical warp yarns, forming new yarn-against-yarn relationships that emerge line by line (see Figure 10). A pattern gradually emerges that has a unique structure and behaviour. In *Untitled*, Rushford and I function as a collective weft yarn that is interacting with the stable warp yarn of a simple score structure and instructions developed for the work, creating as much variation as possible within that limitation. This evokes the formal structure of weaving, despite the possibility of creating variation and creative patterns within that system.

[22] https://rosiepink.typepad.co.uk/rosiepink/tutorial-how-to-make-flat-felt-wet-felting.html (accessed 1 May 2022).

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Figure 9:
'Thick–thin' yarn. This spun wool has been plied once and felted using moisture and heat.

Figure 10:
A loom with red, green and white yarns used in both the warp and weft.[23] The configuration of the weft yarn changes with each line according to a pattern.

The work's repeated pitch sequences and structured sections create a woven pattern. Over time, after each statement or phrase, each weft yarn is established and pushed down against the warp yarn, each iteration (yarn/musical material) being expressed as a new layer.

[23] https://northhouse.org/course-session/warp-and-weft-introduction-to-floor-loom-weaving-1-13-2022 (accessed 18 December 2022).

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Figure 11:
Callum G'Froerer soundchecking *Charcoal VI* (2017) before its premiere performance in Berlin in May 2017.

As I set out to produce constantly morphing timbres in *Gradient* and *Untitled*, the sounds often emerge as a composite. Fine techniques emerge, evolve and disappear in different ways and over different time frames, like the fibres during spinning – or when less controlled or planned, akin to fibres in a felted work that head in different directions and are sometimes separated by loft, creating variable texture. Unlike the structural clarity of the weave, felting creates a more cloud-like texture, its sound something like the visual appearance of Figure 7.

## Bringing Multiple Textile Metaphors Together in *Charcoal VI*

*Charcoal VI* (2017, revised 2021) is a structured, improvised work for amplified double-bell trumpet, four spatialised speakers, sample triggering and spoken text. A goal of *Charcoal VI* was to create a work using the five textile metaphors that I outlined above as compositional starting points; in this process, two other metaphors, drape and dye, emerged. This work contains many interactions and relationships between these elements as well as audio software, text and the preparation and modification of the trumpet (see Figure 11).

Four small condenser microphones are secured on the instrument in locations where air audibly rushes past (near the end of both bells and outside the removed first and second valve slides; see Figure 12).

Each microphone signal is heavily amplified and projected through one of the four speakers. The depression/movement of the valves (first, second and bell-switching valve) determines where air is directed in the trumpet and, thus, which microphone/speaker is activated, in any combination from one at a time to all four simultaneously.[24] This was inspired by the mechanics of the loom: not only the systematic application of warp and weft but also the concept of loft. The lack of a mouthpiece (blowing and speaking the text straight into the lead-pipe of the trumpet) allows for a heightened presence of various articulations and sibilants and a more noticeable phonetic shaping of air sounds (see Figure 13), which evolve using a process informed by the techniques of spinning.

The microphones amplify the natural resonance of the trumpet's pipes and capture the sound of air, modulated by articulation and

[24] Depressing the valves halfway divides airstreams across two outlets, making it possible to activate multiple air/sound outlets.

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Figure 12:
Positions of microphones attached to the double-bell trumpet for *Charcoal VI*. Two more microphones are attached inside each bell.

Figure 13:
Berlin performance of *Charcoal VI*, showing the technique of playing the trumpet without the mouthpiece. © Smallroom Berlin 2017.

filtering techniques using the lips, teeth, tongue and vocal cords – layered in the same way that fibres are assembled in felting. This magnifies the physical processes used to control a regular trumpet tone, although this does not feature in the work at all. The magnification of delicate techniques exposes my sound like unravelled yarn, where the original fibre/material of the thread becomes exposed. Close amplification creates a weave across the various speaker positions, transforming the modest volume of the mouthpiece-less trumpet into an expanded and dynamic sound mass dancing throughout the performance space.

## Trumpet Techniques on the Loom

A loom operates as an interface where two axes of material collide and weave in various ways. The preparation of the trumpet (valve slides removed, microphones attached) is undertaken as if I was preparing a loom, selecting warp thread material, for example, or adjusting spacing and tension. Articulated air sounds and text played through the trumpet represent the warp threads.[25] These techniques are

[25] Typically in a tapestry, strong twine is used as the warp and is completely hidden behind softer, coloured weft threads. In multi-shaft loom weaving, the warp is as visible as the

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extended via amplification and electroacoustic elements, intersecting in the same ways as weft threads. The manipulation of the valves sits somewhere between the warp and weft, representing the variable grip the threads have on each other, akin to the microscopic barbs in natural fibres. The warp and weft are woven together in various ways throughout *Charcoal VI*, sometimes tightly, when I am working with very delicate techniques, paying close attention to how they are amplified or being very deliberate with their spatialisation. At other times I weave more loosely, resulting in heavier and less varied textures: performing the techniques in a dense manner, changing the location of the sound rapidly and at a high volume.

## Drape and Dye

In these dense or rapid-fire moments, I can also adjust the balance between low- and high-frequency tongue-strikes, activating the speakers in different ways and affecting the overall transparency of the texture. This is achieved by adjusting the shape of the tongue and oral cavity. This play of the rhythmic density and the variations in amplitude were inspired by the drape of fabric, which is affected by the tightness of the weave. Drape is 'the play of clinging and falling'.[26] Clothing that is designed to drape loosely will have areas of close contact with the body and areas of distance from the body. High density is equivalent to contact; the variable levels of volume amplification of delicate sounds are equivalent to varying proximity.

At different points in *Charcoal VI* I recite fragments of a text that I composed into the trumpet. The way certain consonants and vowels are amplified through the trumpet is a source of exploration in *Charcoal VI*. At times a sound in the text will be elaborated through trumpet material, and vice versa. I have particularly enjoyed tangling elements through the work. The text is uttered in its entirety twice in the work:

> the only thing standing between us
> was our own experience
> each page written
> a brighter light
> falling asleep
> with your hands in wet sand
> your breath
> a shoreline
> waking up
> in the light
> your breath pulled
> closer to the horizon
> dry sand falls between your fingers
> a dream
> a catastrophe
> pulling us closer

At other times in the work, I utter single words, or parts of words, using the consonants and vowels as the source material for improvisation. This allows me to weave speech, language comprehension, my own poetic composition and an array of novel instrumental

weft, contributing to the design as well as providing structure. I would argue that the latter represents the situation in *Charcoal VI*.

[26] Claire Pajaczkowska, 'Making Known: The Textiles Toolbox – Psychoanalysis of Nine Types of Textile Thinking', in *The Handbook of Textile Culture*, eds Jefferies, Conroy and Clark, p. 89.

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techniques into an expansive measure of fabric as a conceptual basis for the sonic world that the work explores. The soundworld of the text acts as a dye for this fabric – it features throughout the spoken and trumpet material.

## Conclusion

Working with elements of the TSM has resulted in a different type of engagement with the interacting elements of my expanded sonic practice, building a 'tactile' knowledge of how ideas are formed and evolved. The methodology has opened many unexpected avenues of enquiry and has transformed my relationship to the trumpet. By using the textilic metaphors of fibre, spinning, yarn, weaving, felting, drape and dye, I have found new sonic materials and compositional approaches.

In my application, TSM is trumpet-centric. However, it could be adapted to any artistic practice featuring elements that interact. Textile metaphors offer a framework that can be engaged to reflect, generate and readjust throughout the creative process.

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