Tuning this curious harp: composing music that embodies the experience of illness.

by

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"…variable composition of man's body hath made it as an instrument easy to distemper; and, therefore, the poets did well to conjoin music and medicine in Apollo, because the office of medicine is but to tune this curious harp of man's body and reduce it to harmony."
Francis Bacon, The Advancement of Learning, (The Second Book), 1625

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Abstract

To be ill is to have first-person, embodied experience of disease. The person becomes *dys*-embodied. To compose music that explores the experience of illness, I have combined what I have learned from people living with kidney failure with my understanding of music as a profoundly embodied art, to create compositions that intend to bring the listener to a deeper understanding of the experience of illness**.** To do this I have used several approaches including embodied and blended metaphor, illness narratives and incorporation of text that directly reports the experience of illness.

Portfolio of Compositions

Living Water	for String Quartet	
	2nd Movement, '*Unimaginable Thirst*'	*(6'34")*
	4th Movement, '*I'm carrying fluid*'	*(11'34")*
***Dys*-embodied Dance**	for Violin and Piano	*(6'24")*
***Re*-embodied**	an illness narrative in seven episodes for instrumental ensemble of 11 players	*(11' 4")*
The Noise of Waters	Cantata for Soprano and Baritone Soloists, Mixed Choir and Instrumental Ensemble	
	Section 5: *More than Metaphor*	(*5'15")*

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I am also grateful to the members of the Birmingham Contemporary Music Group for workshopping and bringing to life the two narrative instrumental pieces, *Dys-embodied* and *Re-embodied.* Their expert advice on technical aspects of performance and notation was invaluable.

Many thanks to Maria Witek for generously giving her time to discuss the ideas that underpin this project: the centrality of embodiment owes much to her. I am also grateful to other members of the music department at the University of Birmingham – they have been welcoming and encouraging – in particular Ryan Latimer, Daria Kwiatkowska and by fellow student John Rivera Pico.

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Chapter 1: Introduction

Laying out the challenge

I have two goals in presenting this thesis, both involving the bridging of conventional cognitive domains;[1] the one, more personal to me, being the fusion of the two most important activities in my life – music and medicine, the other, an exploration of how music might express and inform our understanding of the experience of illness. Of course, these are closely related ambitions, but the former is essentially private – an attempt at integration of the self, the latter intends to be public. To be clearer, it is not all aspects of my musical and medical life that I am concerned with, but specifically the composition of music and my academic work as a clinician scientist, both 'creative' activities. There is disagreement as to whether creativity is 'domain-general' or 'domain-specific', although recent research[2] would indicate it's a bit of both; as a practitioner of these activities, despite their belonging to different sides in C.P. Snow's '*Two Cultures*', I would argue that these cognitive processes have far more in common than might generally be perceived. I will return to this at the end of this commentary to report on whether I have been successful in my first goal, but for now will focus on the second.

This second goal might be restated as follows: How to work productively across two (maybe more) different cognitive domains: those involved in the *art of composing* (*e.g.* techniques of music composition, aesthetic considerations, representation within music) and the *scientific exploration of the experience of illness* (*e.g.* qualitative research, disease specific impacts, person-centred medicine). My proposed solution is to combine illness narrative (including documented experience of illness) with blended, embodied metaphor to form an underpinning framework within which compositional ideas could be developed. *Embodiment* is key because illness is the embodiment of disease and music (including dance), perhaps more than any other art form, is highly 'embodied'. I will argue this in Chapter 2 and show in some detail how I have arrived at a framework of how I have approached the experience of illness through music using illness metaphors and narratives. Chapters 3, 4 and 5 focus on my compositions, showing how they are constructed and informed by the framework I have developed, with references to music by established composers that have informed them. The compositions are split up by their emphasis on blended/embodied metaphor (Chapter 3, String Quartet *Living Water, movements 2 and 4*), illness narrative (Chapter 4, instrumental pieces

[1] Cognitive scientists and psychologists refer to domains as modules of specialised mental function, typically located within anatomically distinct areas of the brain, e.g., language, maths

[2] An, 2016

Dys-embodied Dance and *Re-Embodied*) and the incorporation of the reported experience of illness (Chapter 5, Cantata *The Noise of Waters, section 5, 'More Than Metaphor'*). Chapter 6 is a brief conclusion. However, before we can proceed further, it is necessary to say more about what it is meant by the experience of illness and why *embodiment* is so central to my approach.

The phenomenology of illness - To be ill is to have first-person, embodied experience of disease.

Phenomenology, the philosophical study of experience, dating from the early 20th century was pioneered by Edmund Husserl and his pupil Maurice Merleau-Ponty. Havi Carel, in her book *Phenomenology of Illness*,[3] defines phenomenology as 'the mental activity taking place in different acts of consciousness, such as perceiving, thinking, imagining, and so on...' She also quotes an example, relevant to this commentary, from Husserl's own lecture notes *On the Phenomenology of the Consciousness of Internal Time*. When addressing the question of how consciousness is structured so as to appreciate a melody, he points out that both mental retention and protention are necessary to make sense of its temporal characteristics. Protention is how we think of the future, fundamental for the experience of anticipation – and as we shall see later, the metaphors and the underlying mental schemas we use to represent movement through space are crucial in music. Both these pioneers saw that the body is central to phenomenology, breaking with Cartesian duality, arguing that perception is an embodied activity, anticipating the contemporary cognitive science of embodied cognition.[4] This means that human embodiment incorporates consciousness, intelligence, intention, control and our physical interaction with the world. To quote Merleau-Ponty, 'the body is much more than an instrument or a means; it is our expression in the world, the visible form of our intentions'.[5]

Illness transforms the body, disrupting not only its overt physical functions but what it means 'to be in the world'. In the case of long-term or progressive conditions it leads to the need for a complete re-alignment of how to exist. Toombs[6] defines illness in terms of *loss*, identifying at least five types that can occur, including loss of wholeness, [e.g. amputation]; certainty; control, [as embodied in loss of consciousness, incontinence, mental capacity]; freedom and familiarity. The dual terminology of dis-appear and *dys*-appear has been developed by Leder[7] (playing on the frequent use of the

[3] Carel, 2016
[4] Friston and Frith, 2015 and Clark 1997.
[5] Merleau-Ponty, 1962.
[6] Toombs, 1990
[7] Leder, 1990.

prefix '*dys*' when describing medical conditions that cause pain or loss of normal function, e.g. dysphasia, the loss of speech), conceiving illness as the absence or 'disappearance' of the body. This has also been applied to *dys*-ability, although considerable care should be taken in identifying disability with illness as many disabled are not ill, nor which to be considered as such. It should also be acknowledged that the phenomenology of illness is dynamic[8] and strongly influenced by socio-cultural factors.[9]

Returning to Carel, she argues that 'illness is a *limit case* of embodied experience'. It pushes *dys*-embodiment to the extreme and by creating a *distancing effect* informs all experience and thus what it is to be human. Paradoxically, it also provides opportunity for re-evaluation and growth.

[8] Toombs, 1988

[9] El Refaie, 2014.

Chapter 2: Building a framework for illness metaphor and narrative in music

Music is Embodied

It is generally acknowledged that one of the characteristics of music is that it is especially able to express emotion, and this is strong evidence of its embodied nature. It has the power to 'move' us,[10] and to do that it evokes bodily sensations, (palpitations, crying, chest tightness) literally 'tapping' into the way these are processed cognitively. These processes include mental representations of the moving self, states of arousal, entrainment, mimesis and theory of mind, examples of which I have summarised in Table 1. The social and cultural value of *all* these processes have been proposed as explanations for why our species evolved with music as a component of our cognitive ability.[11] Notably, fundamental to all these proposed mechanisms is *embodiment*,[12] again in line with the growing consensus that all cognition is fundamentally embodied – *i.e.,* an interplay between brain, body and the world rather than seeing these as either separate (Descartes' '*ghost in the machine*'), representational or brain centred (computational).[13]

Cognitive psychologists tell us that most of the time, for most people, music is used to regulate mood, acting as an 'emotional reward' system.[14] Sloboda refers to "music is a kind of emotional Rorschach blot". It is important to distinguish between felt and perceived emotions, the latter being more common when music expresses negative emotions.[15] This may explain why we like to listen to music that evokes sadness. The perception (rather than direct feeling) of sadness is what Krueger refers to as 'affordances' of the musically extended (*i.e*., embodied) mind, proposing that music is an 'emotion-extending resource' that enables us to engage constructively with what would otherwise be too painful.[16] To some extent this is what I would hope to achieve by exploring the experience of illness through music – I wish to evoke what that experience may be like rather than causing illness itself. How these various aspects of musical embodiment in Table 1 might fit together is summarised by Dell'Anna, see Figure 1.

[10] As shown by Zoltan Kovecses, 2000, when speaking of emotions, we use metaphors to describe them that conform to the general rule EMOTION IS FORCE (see later for discussion on the formulation of metaphor). CAUSES ARE FORCES, and emotions are there to cause us to do something.
[11] van der Schyff and Schiavio, 2017
[12] Dell'Anna, 2021
[13] Friston and Frith; Clark; Thomas Fuchs, 2020
[14] Sloboda, 2011
[15] Zentner, 2008
[16] Krueger, 2014

Table 1: Summary of proposed cognitive mechanisms whereby music-evoked responses might act and their psychological and social significance. Undoubtedly there is considerable overlap and integration (see Figure 1).

Musically evoked mental representations (Cognitive Process)	Psychological, Biological and Social Functions
Two-way mental mapping of the self's movements in response to or making of music (e.g., mapping of proprioception to motor cortex)	Gestural expression for conveying or emphasising meaning, dance and movement[17]
States of arousal (autonomic nervous system)	Response to threat, expression of anger, positive/negative mood, improved spacial and cognitive performance[18]
Synchronisation and Entrainment [19] (sensorimotor responses to rhythm),[20]	Collective social activities[21] – e.g. dance, marching, moshing, group stillness, rituals and ceremonies[22]
Mimesis[23] (dopamine reward circuits)[24]	Anticipation,[25] ability to experience music in the imagination, musical 'chills'
Music and the theory of mind[26] (Activation of Mirror Neurones)	Enables experiential understanding of others actions; grasp of the mind of other. Empathy, collaborative behaviours

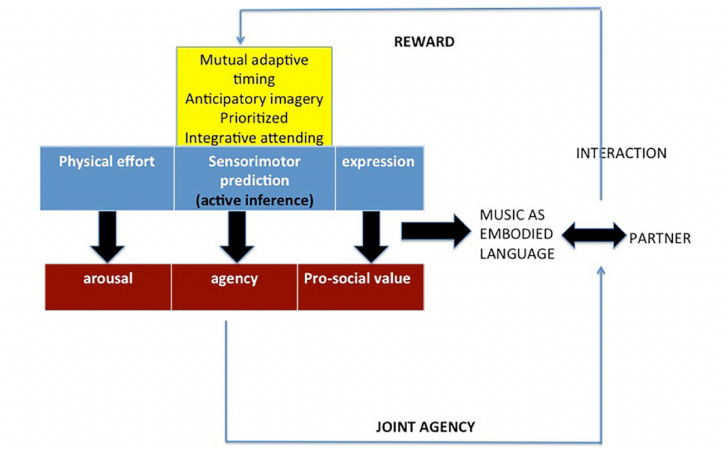


Figure 1: A framework of music as an 'embodied language' (Dell'Anna, 2021) showing how some of the mechanisms in Table 1 might interact.

[17] Cox, 2016
[18] Lim, 2019
[19] Peter Vuust and others, 2018
[20] Walker and others, 2014
[21] Cross, 2001
[22] Jørgensen, 2009
[23] Cox, 2001
[24] Zatorre and Salimpoor, 2013
[25] Huron, 2006
[26] Livingstone and Thompson, 2009

Music and Narrative

It is important to recognise that narrative is crucial to how we humans think and is largely involuntary,[27] given that 'a primary function of the brain is to synthesize elements [*viz.* episodes] into coherent wholes', even when the subject matter is abstract.[28] There is evidence that this happens when listening to music, with half or more of non-musically trained subjects reporting they imagined a story when listening to instrumental classical Western Art or traditional Chinese music. Story 'triggers' are culture specific and more commonly reported when listening to music with which subjects are culturally familiar. Importantly, in this study imagined narratives were associated with greater enjoyment of the music.[29] These subjects are, in effect, imposing what Beach refers to as a private *chronicle derived narrative.* However, once the composer imposes an explicit programme when creating a composition two things happen: it empowers the composer in controlling the narrative, and it makes that narrative public.

How can music express narrative? Berlioz, an early proponent of explicit narrative in music, while somewhat dismissive of music that is purely *imitative*, considering music to be self-sufficient, expressed the opinion that it is able to render both 'sentiments' (*viz*. emotions) and 'poetic ideas' [*idées poétiques*]. Stephen Rogers argues that by *idées poétiques* Berlioz is really referring to metaphor, paraphrasing him thus: 'we hear metaphorically… when we are forced to mingle in our minds two different images, one musical and the other programmatic, which do not belong to the same sphere but seem alike enough that we *believe* we can perceive one in the other' (Roger's italics).[30] If Rogers is correct, then Berlioz is anticipating the concept of *blended metaphor,* the tool I have used to build narrative meaning into my compositions.

How do metaphors work? directionality, verbal and non-verbal, embodied and blended

As Daniel Dennett has pointed out, 'Metaphors are the tools of thought'.[31] Fundamentally their purpose is to make the abstract or unfamiliar (referred to as the TARGET domain), more concrete (the SOURCE domain), and thus easier and more fruitful to manipulate mentally. Although this explanatory purpose is different to that of the emotions, which provide us with a 'grammar of social living',[32] they have some features in common, notably embodiment, valence, and as we have already

[27] Beach Wise, 2022
[28] Abbott, 2008
[29] Margulis and others, 2019
[30] Rogers, 2009
[31] Dennett, 1991
[32] Keltner and others, 2019

seen, they share characteristics when perceived in music. The extensive work of Lakoff and Johnson and many others has shown that they have a hierarchical structure, ranging from the most fundamental 'primary' metaphors, which tap unconsciously into existing brain 'schemas',[33] through to complex conceptual metaphors, which when they have poetic qualities, qualify as 'literary' metaphors. For example, they describe the 'time-orientation metaphor', in which the past is seen as behind one, with the future in front.[34] This is not confined to English, being a general feature of languages, but in some cultures the representation is different (*e.g.,* it is the reverse in Chinese, where the past is represented as being 'in front', the future as 'to the back').[35] To use the conventional nomenclature,[36] this metaphor is expressed as TIME IS SPACE and nicely illustrates a near universal characteristic of primary metaphors, that of 'embodiment'. The 'deictic centre' is a term that refers to the place where an individual is – the 'viewpoint' from which the person doing the thinking is situated in space. Importantly it also refers to the place occupied at a particular time, for example 'now'. In exploiting this metaphor, the brain uses what is termed an 'image schema'- a map within the brain that allows us to locate things relative to our body, for example physical things in front of us, *e.g.,* a table. This map is borrowed to represent the future and the past when it is employed in the time-orientation metaphor. The level to which this embodiment is central to the way this metaphor works is nicely illustrated by a study undertaken by psychologists in Aberdeen: people thinking about the future unconsciously tend to lean forward, whereas when thinking about the past, they lean backward – ever so slightly.[37]

This example also serves to emphasise the importance of directionality when considering metaphors. When we talk of abstract ideas, and emotions and music are excellent examples of this, we use metaphors in abundance, and this can lead to the temptation to conflate – *i.e.,* mistakenly refer to emotion and music as themselves being metaphors.[38] There are, in fact a number of key conceptual metaphors we use when discussing music including MUSIC IS MOTION (THROUGH TIME AND SPACE),[39] underpinned by the SOURCE-PATH-GOAL schema which organises our experience of motion, and MUSIC AS ARCHITECTURE, underpinned by the conceptual metaphor ORGANISATION IS STRUCTURE.[40] Taken together these metaphors enable us to talk about – and link – two of the most fundamental aspects of music – the fact that it is a temporal art form and that is has structure. For

[33] Arbib, 2002
[34] Lakoff and Johnson, 1980
[35] Zhou and Fan, 2015
[36] Lakoff, 2014 The standard nomenclature for metaphors is TARGET IS SOURCE – i.e. it maps the abstract target concept onto a familiar, concrete SOURCE idea that has an explanatory function – this approach will be used throughout this commentary.
[37] Miles and others, 2010; Miles, Nind, and Macrae, 2010; Christian, Miles, and Macrae, 2012
[38] Scruton, 1997; Spitzer, 2004
[39] Šeškauskienė and Levandauskaitė, 2013; Julich, 2018
[40] Brower, 2000

example, we talk of 'returning to the home key' in sonata form, or 'wandering through distant keys' in the development section.[41] In this context MUSIC is the 'abstract' target of the metaphor, but we can also turn this around and use music to evoke embodied metaphors based on schemas, such as the TIME IS SPACE schema discussed above. This can be further developed the concept of *blended metaphor* as first proposed by Fauconnier and Turner.[42] It builds on Lakoff and Johnson's *conceptual metaphor theory* (CMT) but replaces the one-to-one source and target model with '*mental spaces*' that may include more than one cognitive domain (*e.g.,* two inputs that are associated with the source and target of CMT) and a '*blended space*' which allows for the emergence of novel, synergistic metaphorical content. Kovecses observes that this allows for a better account of creative metaphors.[43] Littlemore has shown that creative metaphors are more likely to invoke an embodied response and she argues that creative individuals are more likely to use embodied metaphor, emphasising that gesture is embodied metaphor.[44] It is not surprising therefore that Zbikowski in his seminal articles on metaphor and music adopts blended metaphor as a broad-based approach enabling cross-domain mapping of different mental spaces – in this case a 'Text Space' and a 'Music Space', which he represents as a *Conceptual Integration Network*.[45] Spitzer has used a similar approach when considering conceptual blending and musical emotion.[46] This clearly suits my purposes well, and with some adaptation I show this here in generalisable form (Figure 2). It provides me with the framework to merge text and the embodied properties of music-evoked metaphor when exploring the experience of illness.

As an example of how blended metaphor from two different domains might work synergistically in exploring the experience of illness, I will draw on the work of Elisabeth El Refaie and her recent book '*Visual Metaphor and Embodiment in Graphic Illness Narratives'*.[47] She gives many examples of how the combination of textual and visually evoked metaphors increase the impact of what the author wishes to convey. Depression often feels like being trapped in space-time (see Figure 3a) and one of the problems of pain, which incidentally can only be conveyed metaphorically, is that it is often intrusive (Figure 3b).

[41] See Andras Schiff's lecture-recital on Schubert's last piano sonata in B-flat, Wigmore Hall, 26.11.21 (YouTube), when approaching the tonic in the recapitulation: ''now we feel we are at home at last"– "this moment [in sonata form] is one of the best inventions of humankind – we like to come home".
[42] Fauconnier and Turner, 2008.
[43] Kovecses, 2015
[44] Jeanette Littlemore, 2019
[45] Zbikowski, 2008
[46] Spitzer, 2018
[47] Elisabeth El Refaie, 2019.

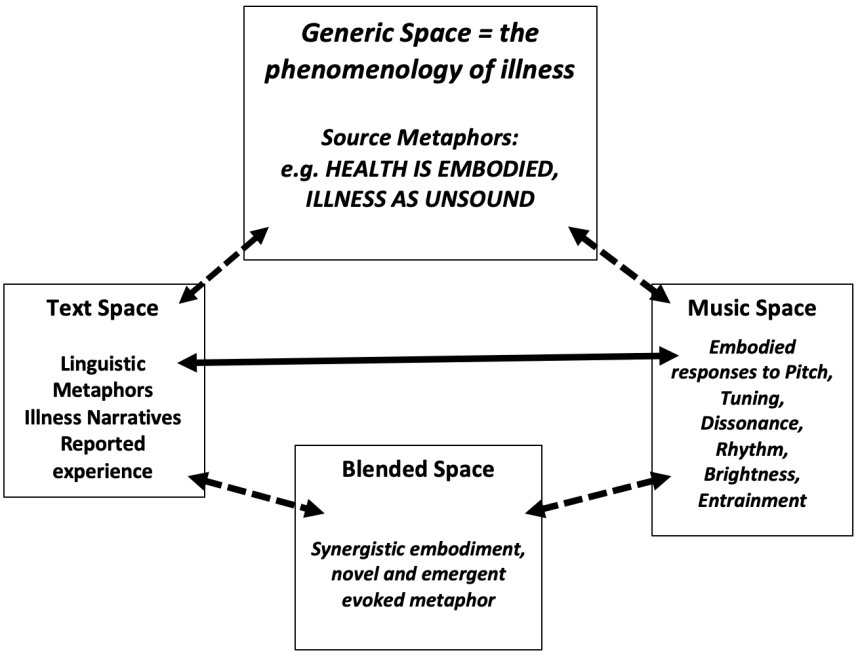
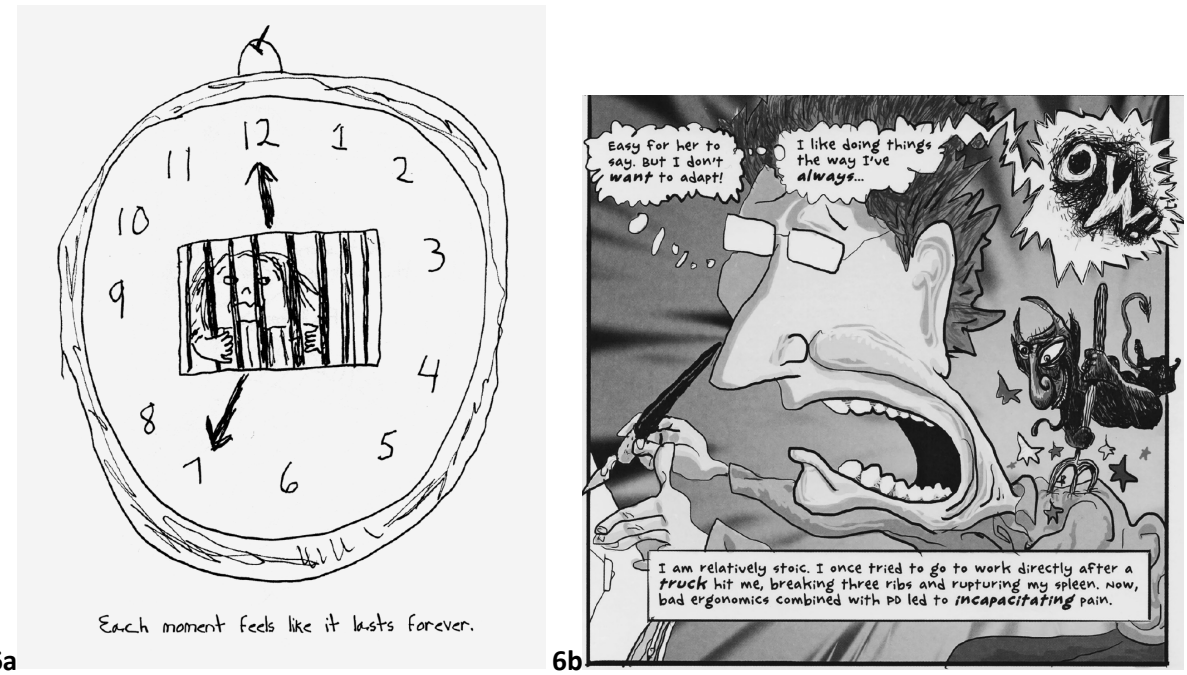


***Figure 2*:** A generalised **Conceptual Integration Network** (as proposed by Zbikowski, adapted according to Lakoff's principles of source metaphor and their targets), as it might be used to express the experience if illness. The 'generic space' in Fauconnier and Turner's original model is taken to be the phenomenology of illness, *i.e., dys*-embodiment. For examples of how the text and music spaces might be populated for illness see the matrix in Table 2 of the next section.



6a **6b**

Figure 3: Both these examples blend textual and graphical metaphors. (a): Swados, E. (2005) *My Depression: A Picture Book*. New York: Seven Stories Press, © Elizabeth Swados (b): Dunlap- Shohl, P. (2015) My Degeneration. (in which the author chronicles the effect of Parkinson's Disease on his ability to draw) © Pennsylvania State University

Illness metaphors and narratives: populating the narrative-metaphor matrix

In the final section of this chapter, I will consider the potential content of this framework as it relates to the experience of illness, *i.e.,* illness metaphor and narrative. Metaphor is used to describe and portray illness in many ways:[48] we talk of our health as *up and down*; we use a wide range of military metaphors such as the illness being an enemy *attacking* the *victim* (*e.g.,* heart attack)*,* of *fighting* the cancer, *conquering* illness, having a *fit* (which derives from the Old English word *fitt*, meaning 'conflict'). Other examples of embodied metaphors include illness as an unnatural state – *out of sorts*, *shadow* of yourself, back to your *old self*; the use of colour as a metaphor for health is particularly striking – *off-colour, washed out*, *fading away, in the pink*.[49] Figure 4a shows some of the main metaphors associated with illness (derived mainly from the Mapping the Metaphor Project, Glasgow University), along with their TARGET-SOURCE designation and worlds they belong to. These conceptual metaphors, along with their primary conceptual, typically embodied formulations are shown in the middle two columns of Table 2, where they have been mapped to recognised characteristics of illness narrative (column one). Illness narratives have particular characteristics as first described by Arthur Frank in *The Wounded Storyteller*.[50] Typically, the shape of the narrative plot, when compared to standard narratives is 'upside down and backwards', as pointed out by Olander,[51] but echoed by others (see Figure 4b). Frank further sub-divided illness narrative into those dominated by recovery, chaos or quest – or presumably any combination of these.

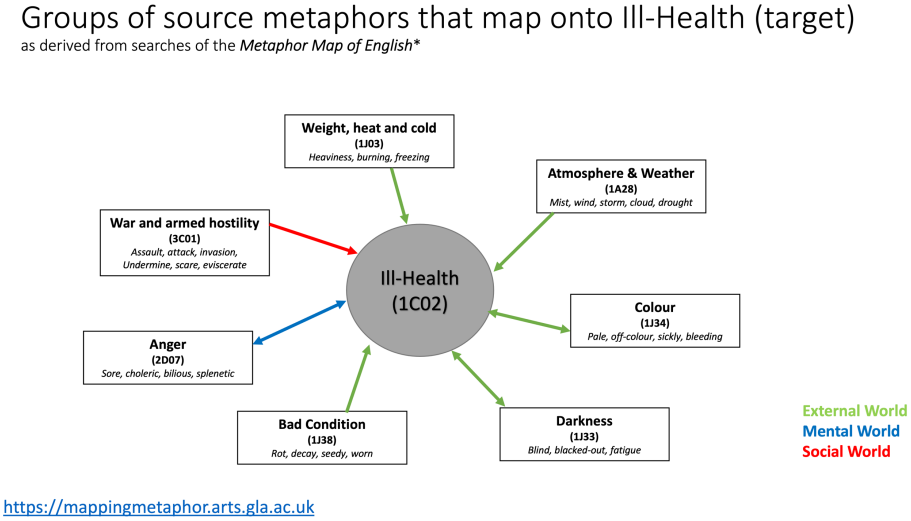


Figure 4a: Groups of source metaphors that map onto ill-health

[48] Goatly, 1997
[49] Lakoff and Johnson, 2003
[50] Frank, 1997
[51] Olander, 2008

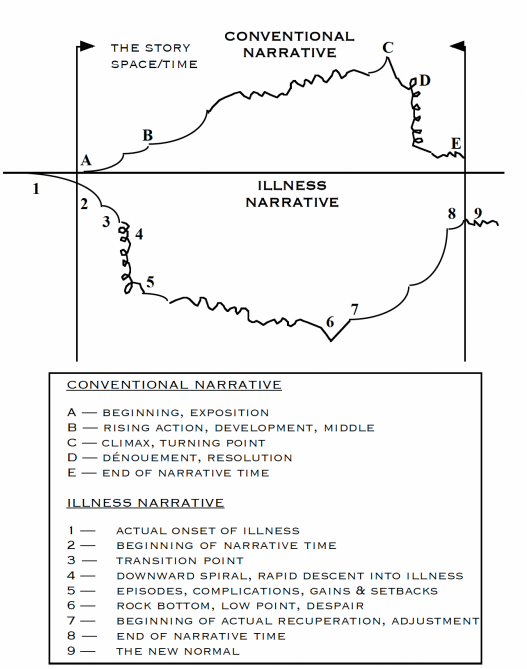


Figure 4b: The trajectory of illness narrative when compared to conventional narrative (see Olander, 2008) – she identified 9 typical stages of an illness narrative – of course what the 'new normal' looks like will depend on whether recovery has been possible.

Other narrative features, (see first column of Table 2) that draw on the phenomenology of illness, include loss of control, the chaos of illness, loss of bodily functions, pain, loss of identity and restitution.[52] It is easy to see how these different components of the narrative might map to 'illness' metaphors, including illness as a journey (in a foreign land), illness as war (especially when considering infection or cancer – illnesses that 'invade the body') and pain, which is almost *always* described in terms of metaphor. Stein refers to pain as being, 'literally, unspeakable'.[53]

I have used these descriptions of illness narrative and metaphor to create an integrated matrix, shown in table 2, which I could then draw on when creating new compositions that address the experience of illness. I have used this matrix to propose potential content for the textual and musical 'spaces' in the Conceptual Integration Framework for blended metaphor described above (Figure 3). The next three chapters will show how this works.

[52] Carel 2016; Sacks, 1984; Frank, 1997, Toombs 1990; Leder, 1990, Lakoff 1993.
[53] Stein, 2007

Table 2: Narrative-Metaphor Framework

Phenomenology, Narratives and Themes[1]	Primary (Embodied) Conceptual Metaphor	Example of linguistic metaphor	Example of music-evoked embodied 'metaphor'[3]
Life with periods of being healthy and being ill, including the course of illnesses and recovery	*GOOD HEALTH/LIFE IS UP* BAD HEALTH/DEATH IS DOWN	*At peak of health, rose from the dead, in top shape, up and about,* He dropped dead, came down with the 'flu, slowing down in his old age, at a low ebb, sinking, journey to the underworld (Hades)	***Pitch frequency*** - PITCH IS HEIGHT[6] *(high frequency is up) high-keyed, humming, major key, emphasised 'major' harmonics* Low pitch is down, falling pitch, minor key **Rhythmic speed**[7] *(fast is up) up-beat, dance rhythms, groove, jive, flourish, trumpeting* (slow is down), ritardando, down-beat **Harmonic rhythm** (*changing fast is up,* changing more slowly is down)
Loss of bodily function	*HEALTH AS GOOD CONDITION* *HEALTH AS EMBODIED* ILLNESS AS BAD CONDITION ILLNESS AS *DYS*-EMBODIMENT	*Concordant, in good order, balanced, dancing*[1] Decay, out of sorts, unstrung, disordered, out of balance hard hit, falling apart, dance[1] with the devil, I am no longer in my body, (I am) losing contact with myself	*In tune, concord, syntonic, symphony, pleasant musical sounds, harmonious, major key, synchronous rhythm* untuned, detuned, discordant, dissonant, absonous, out of key, off key, caterwaul, cacophony, discord, unpleasant sounds, minor key, out of rhythm, off beat, a-synchronous
Pain, Discomfort, Injury	ILLNESS AS DAMAGE PAIN AS (DAMAGE INFFLICTED BY) A SHARP OBJECT	Burning, stabbing, hammering, electric shock, shooting, Heavy, cold, frigidity, stinging, boring, piercing	Non-verbal utterances – (animal like) sounds of distress, e.g., 'screaming', 'wailing', 'sighing', 'crying', dissonance
Loss of control of self: hallucinations, despair, depression, conflicted	ILLNESS AS UNSOUND MADNESS AS UNSOUND DIVIDED SELF[4]	Crazy, cracked, broken, unstable, unbalanced, mood swings, Not myself, need to pull myself together Doppelganger	Discontinuity, fragmented pitch/rhythm, extreme vocalisations or extended techniques, melisma, extreme ranges, incomprehensible word-setting, shifting tonalities, evaded or deceptive harmonisation

Table 2: Narrative-Metaphor Framework (cont.)

Phenomenology, Narratives and Themes[1]	Primary (Embodied) Conceptual Metaphor	Example of linguistic metaphor	Example of music-evoked embodied 'metaphor'[3]
Loss of control as illness runs its course (chaos)	ILLNESS AS CHAOS ILLNESS AS A JOURNEY[2] THROUGH TREACHEROUS LANDSCAPE	Lost, rambling, wandering, in a storm, obstacle	Formal structure that breaks down, loss of key/tonal centre, tempestuous, complex or discordant polyphony, pauses, interruptions, loss of rhythm
Loss of normal physiological function as illness runs it course (chaos)	*HEALTH IS COLOUR* ILLNESS IS LACK OF COLOUR	*In the pink, good complexion, glowing, vibrant, glowing* Pale, off colour, drained, toneless, feeling blue	*Chromaticism, rich texture, harmony and timbre, rich harmonics, vibrato* Lack of harmonic richness, blue notes, monotone, few harmonics
The process of the body ridding itself of illness or being invaded by illness	ILLNESS IS (FIGHTING) A WAR DISEASE IS AN ENEMY MEDICINE AS WEAPON	Assault, (heart) attack, invasion, teeth, kill the monster, fighting the cancer, conquering the illness, having a fit (=conflict), battling the despair, (no) magic bullet	Military music – march, drum-beat, bugle sounds, canon, dissonant, strident, entrainment
Final loss of identity, death quest, acceptance of the inevitable	DEATH IS DARKNESS DEATH AS DEPARTURE ILLNESS/DEATH AS *DYS*-APPEARED/*DYS*-PLACED	Death, mine end, finished…a new (psychic) landscape, journey to another place, a lonely place, (I am) losing contact with myself	Cadence, inaudible/poorly audible, muffled, damped, muted, 'empty' beats and missing notes, use of codas to create sense of acceptance
Restitution: Recovery, Restored, Replaced (artificial or transplanted organs)	RECOVERY FROM ILLNESS AS RESOLUTION ILLNESS IS A TEACHER RECOVERY AS *RE*-EMBODIMENT	Rite of passage, re-balancing, being fixed Cyborg, bionic,	Homophonic, 'hymn-like',[5] nostalgic repetition, formal devices, e.g. use of codas, new music, change of mood, reprise of earlier music, new beginning

Footnotes to Table 2

[1] See 'The Phenomenology of Illness' Havi Carel, 2016; 'The wounded storyteller' Arthur Frank; 1997' Illness narratives in 19C music, Olander, 2008

[2]Linked to the conventional *structural* metaphors LIFE IS A JOURNEY; LIFE IS A DANCE

[3] Littlemore, *Metaphors and the Mind*, Chapter 4; *e.g.,* gesture;

[4] DIVIDED SELF metaphor (Lakoff, 1993) – the self is fragmented – *e.g.,* I'm all over the place, scattered, not myself

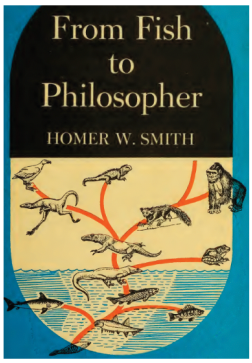
[5] *e.g.,* Beethoven 3rd movement, Op 132 "Heiliger Dankgesang eines Genesenen an die Gottheit, in der lydischen Tonart"

[6] See detailed discussions of PITCH IS HEIGHT in Arnie Cox's *Music and Embodied Cognition*

[7]Derived from a series of embodied metaphors: TIME IS SPACE, CHANGE IS MOTION (*i.e.,* RATE OF CHANGE IS SPEED/TEMPO) the link between these being STATES ARE LOCATIONS; these embodied metaphors underpin the 'temporal dimension' of music. Brower, 2000, 'A cognitive theory of Musical Meaning'

Chapter 3: String Quartet 'Living Water': - Embodied illness metaphor

Why water? As a nephrologist whose clinical and research expertise has been the study of how people with kidney failure are profoundly affected by the body's inability to regulate its water content,[54] a consequence of their poorly or non-functioning kidneys, this is a natural place for me to start. Water is, of course, a metaphor for life itself – our blue planet – and the impact of water security on health, its economic, ecological and environmental importance are a very present concern.[55] Since life evolved out of the sea the salty water in which every cell of our body is bathed – Claude Bernard's '*Le milieu interior*', is only made possible by the functions of the kidney (see inset).[56] Failure of this regulatory function leads to fluid lack - often as a result of treatment to remove fluid rapidly during dialysis - or fluid excess, a life-threatening aspect of which is over-hydration of the lung tissues, '*pulmonary oedema*', which can literally result in drowning. The experience of these two extremes is the subject matter of the second and fourth movements of my quartet '*Living Water*', entitled '*Unimaginable Thirst*' and '*I am carrying fluid*', respectively, both direct quotes from people with kidney failure and the focus of this chapter. For both contextual and aesthetic reasons, I wished to place these movements in the wider context of a work that concerned itself with water as a metaphor for life, and the full score and music is to be found in Appendix 1. The first movement deals with water as a '*force for life*', the third movement the purifying qualities of water '*Wash me thoroughly*', and the transition from second to third movement is intended to embody the relief experienced when quenching a searing thirst. The structure of the whole work, expressed as a set of blended metaphors is shown in Figure 5.



Front-piece HW Smith's 1953 book. Smith, a founding father of kidney physiology, was among the first to propose how species made the transition from sea to land.

The severe thirst experienced by people on dialysis, typically after it has been necessary to remove 2-3 litres of fluid in four hours from the body during a treatment session can be so intense as to be unbearable. For a fuller expression of the lived experience see the abstracted text for the Cantata lyrics in Chapter 5.

[54] For research publications see: https://scholar.google.com/citations?view_op=search_authors&mauthors=simon+j+davies&hl=en&oi=ao
[55] The Lancet, Editorial 'Water and Health: Think Bigger.' 2023
[56] Smith, 1961

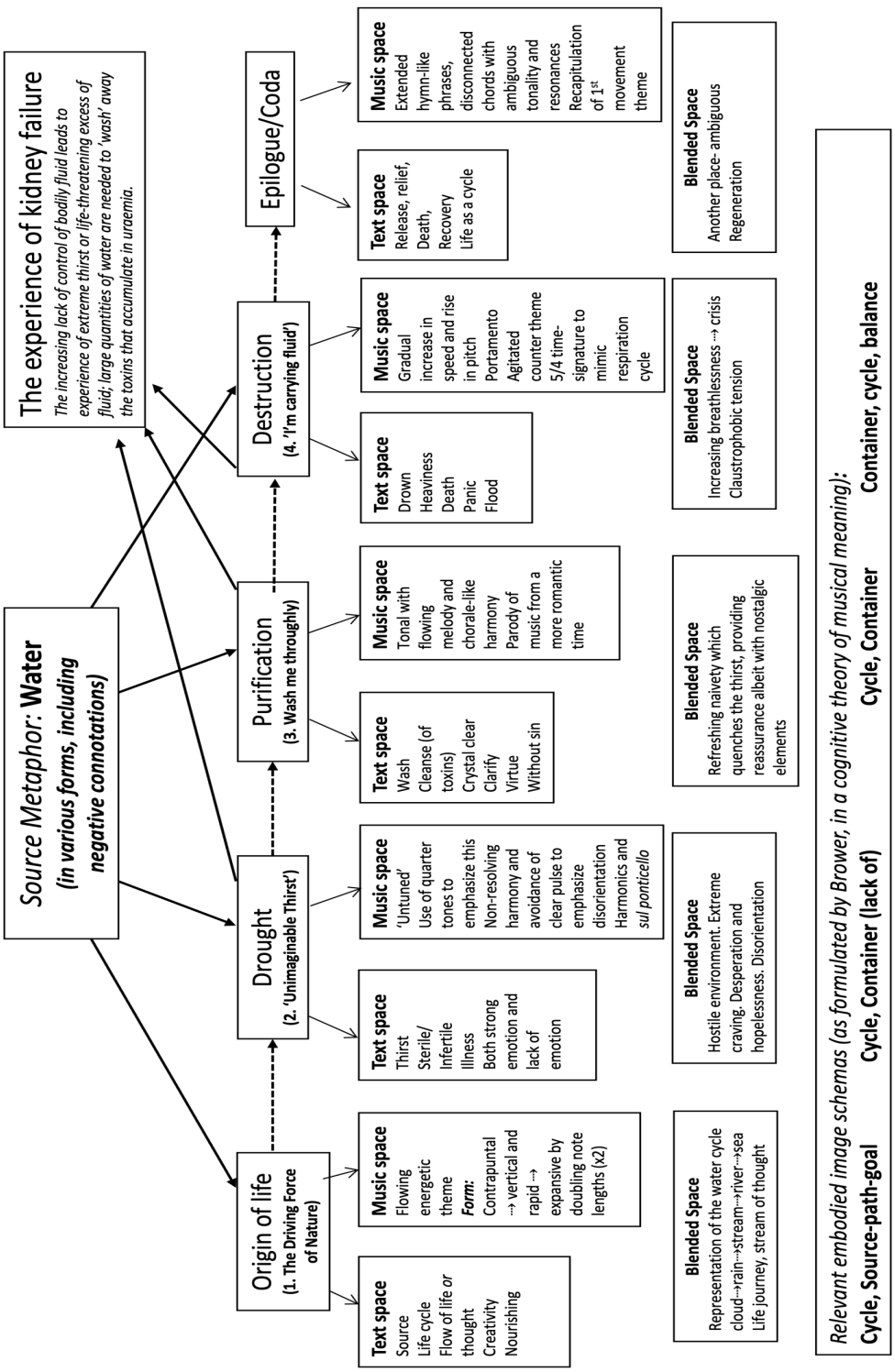


Figure 5: *Schematic representation of blended metaphors underpinning the String Quartet, Living Water, and their underlying image schemas as proposed by Brower*[57]*.*

[57] Brower, 2000.

Unimaginable Thirst opens with a dissonant and intense motif that announces the distressing nature of this experience, (see Figure 6a), introducing key elements that will be developed later – including ponticello to create a harsh, 'dry' roughness of timbre, 'screeching' dissonant portamento in the upper strings indicating distress and use of 'detuning' (quartertones) which speaks to the metaphor of HEALTH AS TUNED.[58]
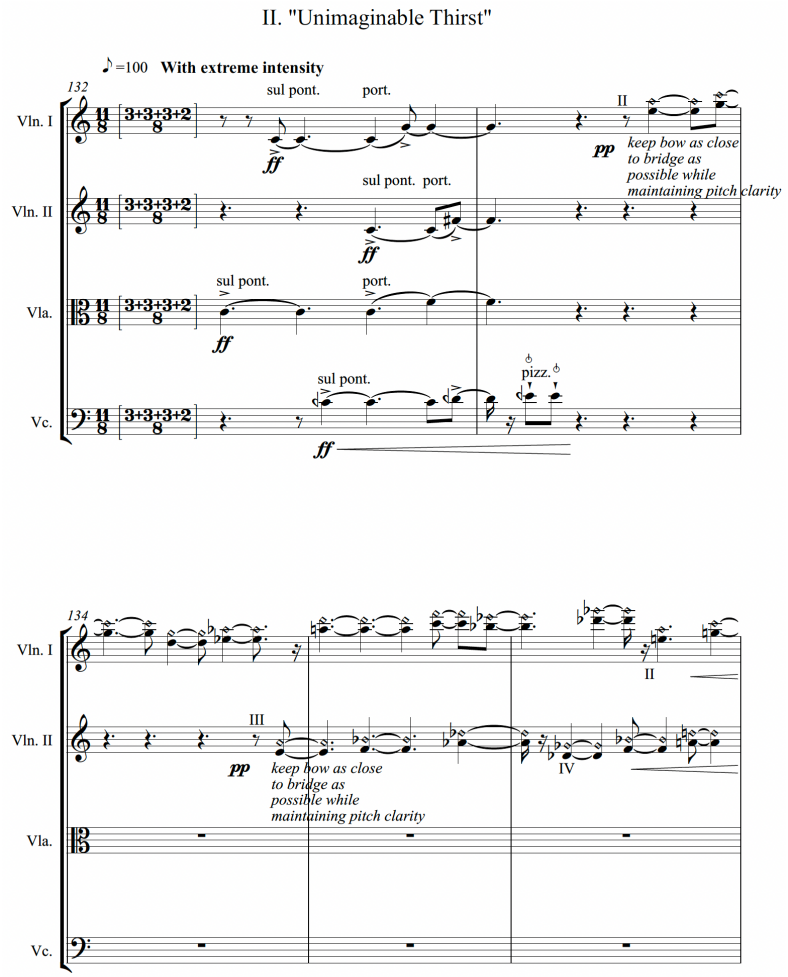


Fig. 6a Opening motif: *sul pont*., semitone and quarter tone dissonance, portamento, Bartok pizzicato, followed by harmonics in the upper strings, unresolving harmony

The subsequent use of 'near' ponticello harmonics in the upper strings as a series of inter-locking chords that *won't resolve* harmonically into a single tri-chord is intended to express the nagging, persistent presence of thirst that effectively takes us into an alien, sterile landscape. I chose to make the 'cello the protagonist – so as to emphasise the loneliness of this experience, and the central section of this movement is effectively a 'soliloquy'. The writing here (Figure 6b) is extreme – almost

[58] In the early 17th century to say you were 'detuned' meant you were out of sorts, unwell; modern usage – 'a well-tuned engine is in good condition (https://mappingmetaphor.arts.gla.ac.uk). This is the metaphor that Francis Bacon is using in the quotation at the beginning of this commentary.

unplayable – consciously informed by the 'extreme' vocal writing used by several composers in their expression of extreme distress or 'loss of mind'.
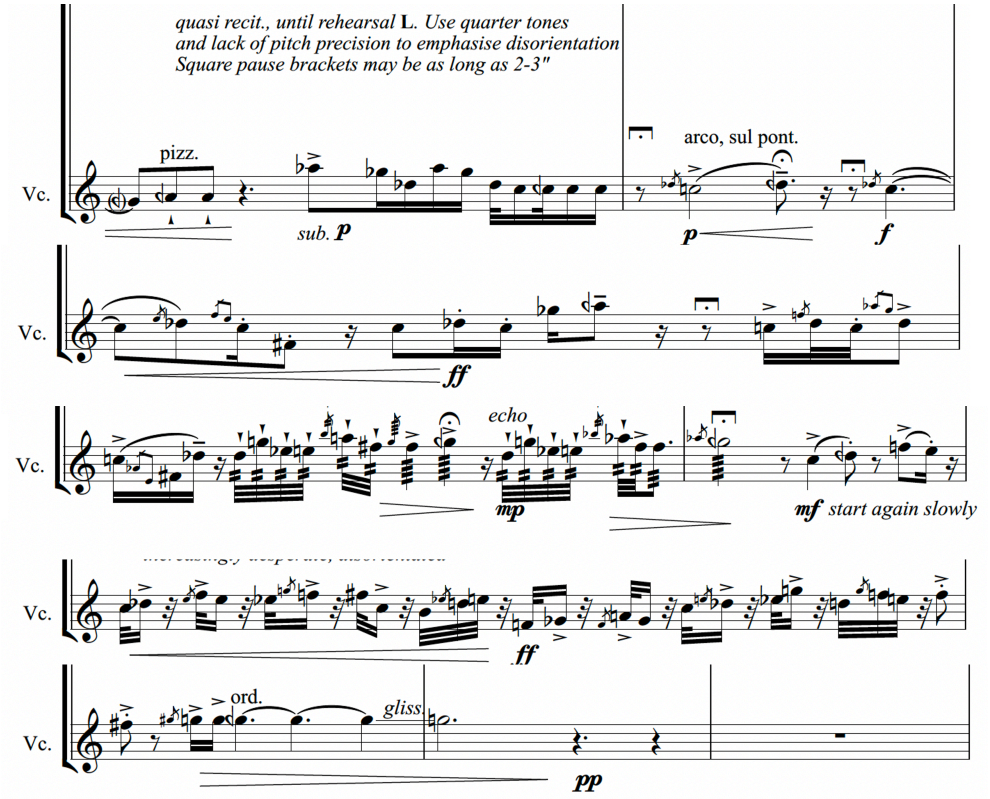


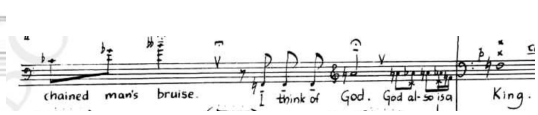
Figure 6b. 'Cello as protagonist in '*Unimaginable Thirst*'. Intentionally almost impossible to play, this represents isolation, disorientation and thirst driving the subject mad.

While it is, in general, hard to find good examples of music expressing the *experience of illness* in Western Classical Music, 'mad scenes' are an exception. I have drawn on a number of examples of this, including the coloratura 'mad scenes' in Bel Canto opera,[59] Brett Dean's portrayal of Cordelia's loss of mind in his Hamlet, (2013-16) (Figure 7a) and extreme vocalisations in Maxwell Davies' *Eight Songs for a Mad King*, (1969), (Figure 7b). My intention here was to show how extreme thirst takes over the mind, becoming all-encompassing, through the metaphor of madness (illness) as an unsound or damaged object.[60]

[59] Pipes, 1990; Christensen, 2017.
[60] Bramwell, 2016
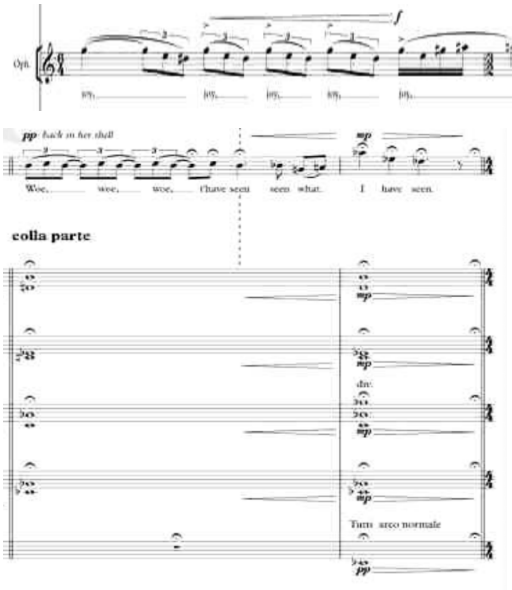


Fig. 7a Brett Dean's *Hamlet*, Act Two, Cordelia (*left*) with incomprehensible word setting.



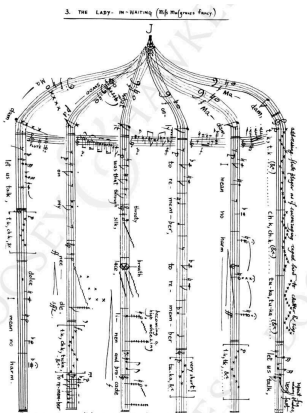


Fig. 7b Maxwell-Davies, *Eight Songs for a Mad King* (*right*) extreme vocalisations and the depiction of a caged bird – where the visual metaphor is literally drawn into the score

When the other instruments re-join with a repeat of the un-resolving harmony and increasing intensity of the *portamenti*, leading, with the aid of harmonic rhythm to the first narrative '*crisis*' of the piece at the end of the movement. The beginning of the third movement, played '*attacca*', is intended to release this tension, as thirst is released by drinking, reflecting the restorative and purifying power of water, the subject of the third movement.

The opposite problem, the accumulation of fluid between dialysis treatments gradually building up in the lungs, is the subject of the last movement, '*I am feeling heavy*' – literally due to the weight of fluid in the tissues. The underlying form of the movement is a *passacaglia* that gradually increases in tempo as it is repeated, passed up from 'cello to viola and then the violins towards the second crisis of the quartet, midway through this movement. The choice of a 5/4 time-signature reflects the asymmetry of the respiratory cycle (inhalation is shorter than exhalation), such that each bar is equivalent to the chest cavity (embodied CONTAINER metaphor) and the accompanying *portamento* figure, initially in the viola, *embodies the action of breathing.* I have asked the instrumentalists to breath themselves in time with this cycle to ensure that embodiment takes place. The third element is a rising 5-7 note phrase, first heard tentatively in the violins, played increasingly aggressively as the first half of the movement progresses towards the crisis, at bar 68, page 46 (*viz*. 'rock bottom', low point in the illness narrative, Figure 4). This counter motif/gesture has a fragmented nature expressing distress and damage and combined with the gradually increasing tempo as the

passacaglia cycle is repeated, both serve to raise the tension and anxiety that accompanies increasing breathlessness.

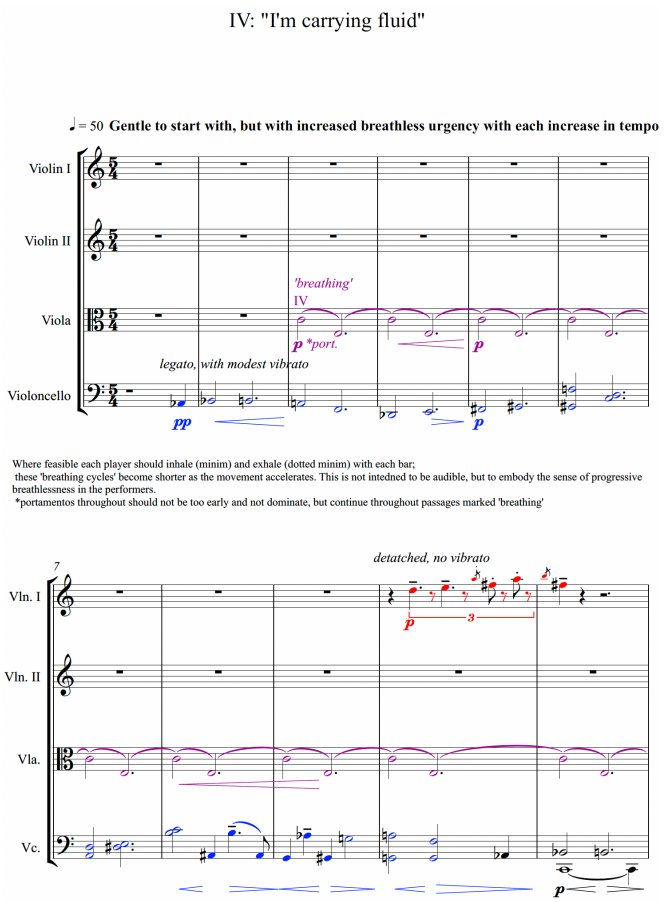


Figure 8: Opening of the 4th Movement, illustrating the 3 motivic elements: the 'cello has the passacaglia, (in blue) viola the 'breathing' motif, violin the rising, fragmented motif (in red)

Following the crisis there is a silence and then an extended 'epilogue' in which the music is dramatically slowed. The narrative here is not prescribed, leaving the listener to decide whether this section is representative of recovery or death, but whichever this is, it is now the 'new normal' as defined in the illness narrative. After a short section (E, bars 74-78) derived from the fragmented rising motif, the viola, supported by 'cello plays the passacaglia theme very slowly, now broken into 4 sections, reminiscent of a hymn-like structure – each 'phrase' concluding with a complex chord made up of the harmonic spectrum in the lower strings and stacked fifths in the violins, (see rehearsal marks F, G, H and I). At F and G the 'cello has the 2nd and 3rd harmonics of an imagined octave lower fundamental, the viola approximating to the 7th and 13th harmonics. These chords emphasise the stillness of this section and the subsequent short coda, returning to the music of the first movement, reminds us of the circularity of the water cycle, a metaphor for regeneration.

This movement owes some of its ideas to Benjamin Britten's third string quartet, specifically the last movement, *'La Serenissima'*, written near the end of his life, which also uses a passacaglia and alludes to the tolling of the bell of *Santa Maria della Salute* in Venice.[61] My use of harmonics in the cadential chords of the epilogue, often found in the spectrum of a tuned bell are a reference to this and their inclusion here is influenced by their frequent use in Julian Anderson's music, for example his string quartets.[62] This is quite different to my use elsewhere of quarter tones to evoke the de-tuning metaphor of illness. There is little doubt that Britten's quartet is about death – there are five quotations of his opera *Death in Venice* in this movement, and its serenity implies acceptance. Bells have taken on huge metaphorical significance in all cultures, typically in relation to death, and it is as much the threat of death as death itself I am trying to evoke in this final movement. This is further emphasised by the slowing down of time.

[61] David Mathews, 2013
[62] Anderson and Dingle, 2020

Chapter 4: *Dys*-embodiment and *Re*-embodiment: illness narratives

This chapter discusses how I have built illness narratives into two linked instrumental compositions that deal quite explicitly with the phenomenon of illness as the embodied experience of disease. In the first, a short piece for violin and piano, *dys*-embodiment is expressed as fragmentation, in the second instrumental piece there is a more complex narrative in which the young woman experiencing illness is literally *re*-embodied when she receives a kidney transplant.

Dys-embodied Dance, for Violin and Piano

Dance is a clear example of music working as an embodied art form. As observed by Arthur Frank,[63] 'When the body is healthy, it coheres, its parts work in concert[64] ….. the origins of music are inseparable from dance, and dance is one of the great metaphors of life itself'. This underpins the concept behind this short piece which uses forms of the 'Jig' to demonstrate *dys*-embodiment, through a process of collapse and fragmentation followed by a more stable 'Sarabande' upon which the jig re-composes itself to portray a narrative of illness and recovery. The overall structure of the piece is shown in Table 3:

Table 3: Structure of *Dys-embodied Dance*.

Section (Time Signature)	Bar Number	Tempo (pulse in bpm)	Description
Introduction (9/8)	1-8	Varied (69-74)	Thematic material presented as a slip jig
Jig (9/8) and Reel (12/16)	9-17	Faster (76)	Syncopated thematic material that combines jig elements with those of a reel
Jig (9/8) and Reel (12/16)	17-34	76 but pauses	Material developed, begins to fragment, stops and starts, loses consistent pulse and eventually fades
Increasingly fragmented Changing time signatures	35-57	76→ slowing	Increasingly falling apart, with loss of clear pulse, glissandi, extremes of register (piano and violin), used of *col legno* to evoke falling
Quasi Cadenza No time signature	58-62	Free time	Violin Cadenza – no rhythm, detuned pitches reflecting the body no longer working in synchrony or 'in tune' with itself
Calm, quasi Sarabande Piano (3/2)	63-74	Slow (62)	Piano takes the lead in a slow 'Sarabande', a restoration of rhythm (and harmony), in which the violin joins in with fragments of the jig, getting gradually stronger and more agitated
Sarabande in Duet: Broad (3/2 → 9/8)	75-84	Slow (56) → Accel→ Fast (72)	Final flourish (reel) and fall!

[63] Frank, 1991

[64] The reader is referred to opening quotation in this commentary in which Francis Bacon refers to the human body as an instrument easy to distemper

The introduction presents the violin's material in the form of a slip jig, *i.e.,* a jig in 9/8 time that is played more slowly than a regular 6/8 jig. The interval structure is preserved when this is presented as a syncopated theme at bar 9, (figure 9) where the violin moves back and forth between a jig rhythm and a faster reel (the semi-quaver figures felt in 12/16 time).

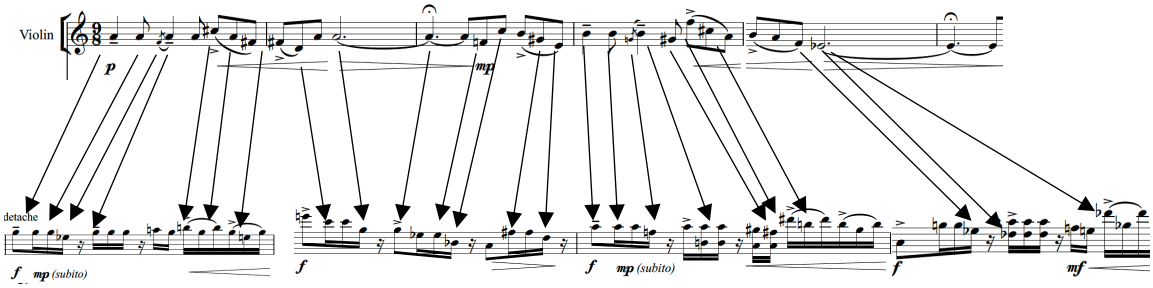


Figure 9: Comparison of the opening bars when the violin states the main thematic material as a slip jig, followed by the elaborated and transposed version at bar 9, which includes snippets of jig and reel.

This, combined with cross rhythms in the piano part, initially hesitant during the introduction and later suggestive of a 2/4 time-signature, introduces an inherent instability early in the piece which gets gradually worse, until eventually in the cadenza section all sense of rhythm and thus sense of time is lost – as it is in those with severe and incapacitating illness. This is the nadir or 'point of despair' in the illness narrative.

The introduction of new material by the piano, in the form of a different dance, imitative of a Sarabande, provides the stability upon which a recovery can happen. Calm, but quietly powerful, it builds on a repeated 5-bar cycle[65] to a climax at bar 75, by which point the violin, which has been 'rebuilding' (recovering) its jig-like material from fragments, joins together with the piano. From here on both instruments work together, with a final flourish of the reel motif.

Frank, as a continuation of the quotation above,[66] goes on to say: 'Until I was ill I had never heard so clearly the dance in the music, and life in the dance'. The reasons for my using dance as the vehicle for this *dys*-embodiment illness narrative should be clear enough and the decision to incorporate 'jig-like' material is meant as a reference to the role of the violin in accompanying community dancing. I needed a strong but quite different dance rhythm to provide the stable basis for recovery in this narrative and the use of contrasting dances in baroque forms was a natural place to look. My choice of a Sarabande was inspired by J. S. Bach's powerful use of this dance form in the closing

[65] I have notated this in 3/2 not 3/4 as is more usual for a Sarabande
[66] Frank, 1991

choruses of his settings of the St. John and St. Mathew Passions. Bach wrote more Sarabands than any other dance type, in many styles (*viz.* the solo suites, Goldberg variations and the choral prelude *An Wasserflüssen Babylon*), but in this case its use at the culmination of the Passion settings clearly has a serious and profound narrative purpose.

Re-embodied, an illness narrative in seven episodes for instrumental ensemble

This composition is conceived as a more explicit narrative and is based on a true set of events. It is told in a series of seven episodes, played continuously, and the story relates that of a mother and her child, in which the child has a life-threatening illness early in life from which she recovers, only to get progressive kidney failure later as a consequence. This leads to kidney failure in adulthood for which she receives a kidney transplant from her mother – she is literally *re-embodied*. The narration is complex: episodes 1 to 3 were told to me by the mother, episode 4 is the point at which I met the daughter when her health was failing and episode 5, which is the emotional centre of the piece, represents the state of mind of the mother during her narration. The mother's narration is, therefore, nested within my narration of the whole story. The content of each episode in more detail, mapped to Olander's classification of the stages of an illness narrative, shown in brackets, is as follows:

Episode 1: a young child and mother are at play (*Beginning of narrative time*)
Episode 2: the child becomes suddenly unwell – her mother is distressed, taking her from doctor to hospital- no one seems quite sure what is wrong, but the kidneys have failed, leading to coma. (*Downward Spiral – rapid decent*)
Episode 3: the illness is life-threatening, but the crisis passes and the child recovers. The mothers' relief is intense – (*Ups and downs begin*).
Episode 4: the child grows into young adulthood. She thrives and engages in life, but then her health gradually declines. The kidney damage in childhood has caused a gradual decline in function – and she becomes increasingly *dys-embodied* as her vitality drains away (*Initially up, then slowly down*)
Episode 5: the mother expresses her sorrow at her child's plight. She wants to help – give her part of her body if needed (*Rock bottom*)
Episode 6: preparations are entrained. The mother gives her daughter the life restoring gift. (*Beginning of actual recuperation*)
Episode 7: the daughter is re-embodied – her health restored. On the surface normal life resumes, but some anxiety remains. (*New Normal*)

The music was conceived of as a double set of variations in which there is separate thematic material that is clearly identifiable with the daughter and the mother. These themes are constructed so as to contain the elements within them that reflect both character and future events in the narrative. The daughters theme expresses both the optimism of youth and the fall into chaos of illness (HEALTH IS UP). The mother's theme is warm, flowing and yet anticipates sadness (Figure 10).

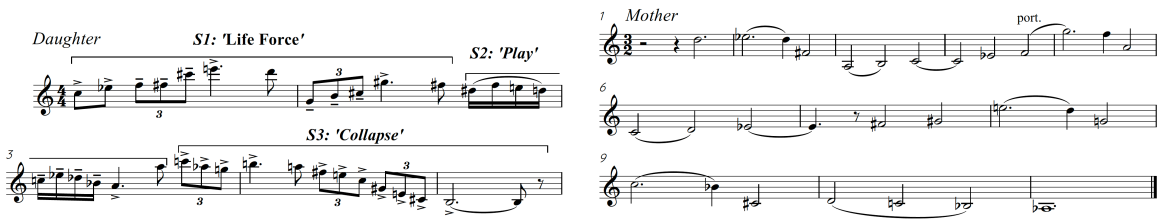
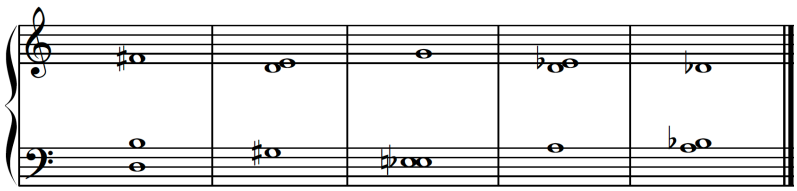


Figure 10: Thematic material representing the daughter and mother in the narrative. These are coloured **red** (daughter) and **blue** (mother) respectively in the score.

The narrative is also underpinned by a series of tri-chords that appear at key moments, initially at the beginning and end of each episode, but with increasing importance as the piece progresses, forming the whole harmonic structure of Episode 5 (the emotional centre). The chord sequence (Figure 11) is associated with emotional states that are linked to: I to V, calmness/sadness, anticipation, collapse, closure and unease, and it is underpinned by an interval structure:



	I	II	III	IV	V
Semitone Intervals:					
	7	2	4 (16)	1	3
	9	6	1	5	1
	4(16)	8	3 (15)	6	4
	20	16	8	12	8
	32	16	32	12	8

Figure 11: The top numbers refer to the semitone intervals between notes (where this includes octaves this is shown in in brackets) whereas the lower numbers add these together. The use of these chords is shown in the score in **green**.

Finally, throughout the score there are a few short quotations alluding to the life of Mozart – something I need to explain. They are not intended to be overtly audible and represent a private rather than public aspect of the narrative. Why did I choose this particular story for *Re-Embodied* from the thousands of potential case studies I have worked with over a lifetime of clinical practice? There are for me strong resonances between this narrative and that of Mozart's illness, something that I became aware of at about the time I was choosing this speciality for my career. It is almost as if by making this career choice I was feeding a fantasy that Mozart's life might have been saved.

There is general consensus that Mozart died of kidney failure.[67] Sophie Haibel, sister to Constanze Mozart, and an eyewitness to his death reported in letters that Mozart had to have a special 'night jacket' made that could be put on frontways because he was so swollen that 'he was unable to turn in bed'. He reported to her '*Why, - I have the taste of death on my tongue*', likely referring to the local production in the mouth of ammonia from urea accumulation in the blood.[68] Mozart also had several serious childhood illnesses documented. Whether he had the same condition as the daughter in *Re-Embodied* has been speculated upon, but not proven.[69]

The 'Mozart' musical material I have used includes the short CDFE motif and two brief quotations. It is not intended to be easily heard, just woven into the structure in recognition of the link in my mind between his and my patient's narratives. CDFE,[70] sometimes referred to the Mozart motif, (also the Credo motif), was used 1,243 times in 14 of his compositions, including his first and his last symphony, *The Jupiter*, where it plays a prominent role in the last movement.[71] It has also been equated with the phrase '*Es wurde licht*' – 'Let there be Light'. On its first occurrence in *Episode 1*, which is representative of the daughter's childhood, (see Trombone, b. 35-38) it is associated with fragments of two of his earliest childhood compositions for piano (in the woodwind b. 38-43). There are several subsequent appearances of CDFE (see Mozart material marked ***purple*** in the score) and one additional quotation in *Episode 4*, b. 187, where the muted trumpet parodies the opening accompaniment (violins) to the *Lacrymosa* of his Requiem. Benedikt Schack (1766-1826), a friend and singer, wrote about the hours of Mozart's life: 'We were in the first bars of the *Lacrymosa* when Mozart started to cry hard. He put the quill aside and 11 hours later at 1 o'clock in the morning, he passed away'.[72] The CDFE motif also has obvious connections to the 'playful' section of the daughter theme.

Re-Embodied seeks to build on number of blended metaphors (as discussed in Chapter 2, Figure 2) by combining the textual space of the narrative with the embodied 'musically evoked' metaphors laid out in Table 2. These are summarised in Table 4.

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[67] Hatzinger, 2013; Guillery, 1992; Davies, 1983 His physicians at the time were confounded but this was before the description of Bright's disease in 1827. Richard Bright, working at Guy's Hospital in London, where I undertook my Medical Research Doctorate, described severe swelling (fluid retention) due to disease of the kidney. My supervisor, Stewart Cameron did much to pick up where Bright left off, studying early in his career the relationship of protein in the urine, which correlates with the fluid retention caused by a number of kidney diseases.

[68] a process I have quantified with research colleagues David Smith FRS and Patrik Spanel, using sensitive spectrometry methods.

[69] Davies, 1983

[70] Schmid and Sanders, 1956

[71] Wuchner, 2011

[72] Hatzinger, 2013

Table 4: Summary of Text and Music Spaces in Re-Embodied

Narrative Episode (Text Space)	Music Space
Episode 1: (b. 1-44) Mother and her young child (daughter) are at play – a scene of innocence and fun. She is running about and falling over.	Opens with the 'anticipation' chord. The music is lively and upbeat (but off beat) with playful use if S2 in the daughter theme, followed by a collapse on the floor (first appearance of the collapse chord, **b. 27**, here in an innocent context – but possibly prefiguring what is to come. There is a warm presentation of the mother's theme (viola/cello) and a brief, distorted reference to Mozart's childhood compositions (prefiguring?). Harp scales and string pitches derived from the daughter theme.
Episode 2: (b. 45-77) the daughter – still a young child, becomes suddenly unwell – her mother is distressed, taking her from doctor to hospital- no one seems quite sure what is wrong, but the kidneys have failed, leading to coma.	Again, the anticipation chord, now more sinister and chaotic. S3 for daughter theme and more phrenetical falling, to collapse chord **(b. 61).** The mother is desperate (see her distorted, fragmented theme as brass duet that fades into despair).
Episode 3: (b. 77- 125) the child is unconscious – may not survive. Mother prays for her recovery and then again at her recovery.	Anticipation chord in the string harmonics. Daughter theme gradually emerges now in the Bass Clarinet/Alto Flute (HEALTH IS UP). Recovery starts **b. 98** and complete by **b. 108**, with the music suggesting a prayer (Hymn) to recovery at **b.93** and mothers joy (Hymn) at **b. 114**.
Episode 4: (b. 126-209) She thrives and engages in life, but then her health gradually declines.	Linked by 'cello alluding 'anticipation' chord. Scherzo like movement – illusions to jazz, initially high energy S1 and S2 of daughter theme. Energy gradually fades, with thinning of harmony and slowing of harmonic rhythm. Progressive loss of colour (chromaticism). Mozart's death is implied – distorted reference to *Lacrymosa* from the requiem.
Episode 5: (b. 210-228) the mother expresses her sorrow at her child's plight. She wants to help – give her part of her body if needed	Trombone solo, (with violin) decorated version of mother's theme, evoking sadness accompanied by first full use of the chord sequence forms the accompaniment.
Episode 6: (b. 225- 245) Daughter and Mother will fight this together. Preparations for a kidney transplant are put in train. The mother gives her daughter the life restoring gift.	Interrupted by 'militaristic' music, aggressive use of the full chord sequence in strings, harp and bassoon, and gradual entrainment of both rhythm and pitch
Episode 7: (b. 246-end). The daughter is re-embodied – her health restored. On the surface normal life resumes, but some anxiety remains.	Energy and life return: a contrapuntal structure provides a new 'underpinning' to her life with a fugato entry of an energised version of the daughters theme, first piccolo then clarinet and then vibraphone. The Mothers theme emerges and them both daughter's and mother's thematic material merge (crotales). At **b. 276** closure equated to new normal – not without some underlying uncertainty, finishing on the 'unease' chord.

I would draw a parallel between my approach of combining narrative and metaphor with the frequent use of metaphor by Thomas Adès, of which his *Living Toys* for instrumental ensemble is an excellent example. It is based on a short, fantastical narrative, as might be made up by a child, in which his toys come to life in an imaginary world where he is all powerful (Adès has since acknowledged this narrative as his own creation). Jason Preece in his PhD thesis addressing this

subject, shows how Adès integrates music metaphor into this narrative by constructing a conceptual blend diagram of the type I have been using, reproduced here as Figure 12.[73] There are clearly parallels here with how I have been working.

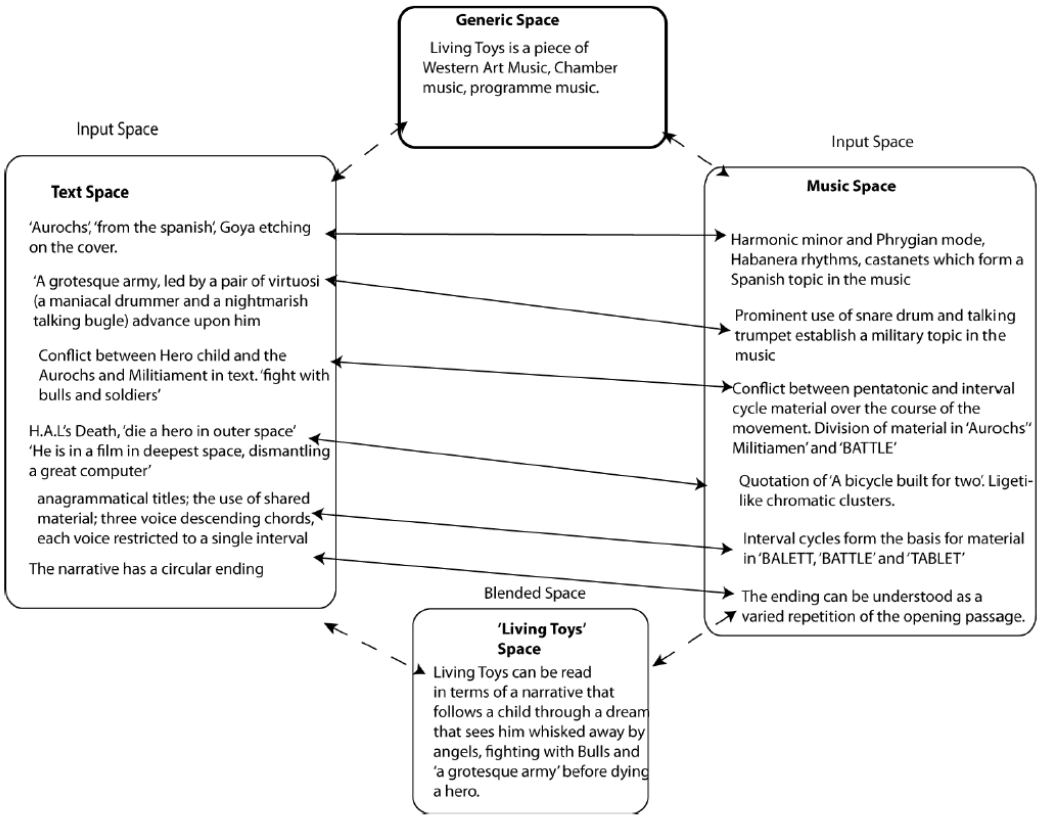


Figure 12: Conceptual blend diagram, analogous to the blended metaphor approach I have used in *Re-Embodied*, taken from Jason Preece's analysis of *Living Toys.* Source: "Stars, Magnetism, Bulls and Heroes: Thomas Adès's Metaphors and his Music", PhD thesis, (Figure 9, page 74).

My blended spaces are intended to evoke many aspects of the experience of illness, including chaos and panic, relief, sorrow, rejuvenation and anxiety.

[73] Preece, 2016.

Chapter 5: More than Metaphor – incorporating lived experience.

Although I have found metaphor a useful 'way in' to composing music exploring the experience of illness it was also important for me to incorporate material derived from the direct reporting of lived experience. As with the quartet, I wanted to place music composed using this approach within a wider context. Given this was to require inclusion of text it needed to be sung, hence the decision to write a cantata – *The Noise of Waters*. The primary subject remains water, but is now addressed with a much broader brush, touching on the many properties of this life-giving substance, its metaphorical properties (both spiritual and creative nourishment), and its importance both to our *milieu interior* and *exterior* (water security). The overall plan and content for each section is shown in Figure 13, (and the full score and audio file are to be found in the appendix 1) but for the purposes of this commentary the focus is on bars 410-488 in the section entitled '*More than Metaphor*').

The first task was to construct a text of verbatim statements made by people with kidney failure in terms of their experience of symptoms, predominantly related to those caused by a failure of fluid homeostasis. This was achieved by undertaking a literature search and selecting candidate quotations from qualitative research articles (for full list see appendix 2). From these candidate phrases a final selection was made on aesthetic and thematic grounds and placed into the text by ordering them according to symptom specificity first moving towards statements of an increasingly existential nature. The final text is shown here:

I am always thirsty,
I feel drained and parched
Thirsty all the time
My mouth is drying out
My mouth is dry all the time
I always drink more than I should
I fail to resist
I am always thirsty
I think about water all the time
You think about water
My thoughts remain always fixed upon thirst and water

the thirst is stronger than me
I am terribly thirsty

tortured, fixated, obsessed
I can't help myself
It is stronger than me.
I don't feel like I'm alive
when I cut down on water.
I get so tired
I need water
I am a prisoner
I need water

Treading water
I could not breathe
Visions:
a mountain with fresh water gushing forth
I feel I cannot breathe

Figure 13: Structure of the Cantata is loosely modelled on a Bach Cantata, with opening and closing choruses, solo 'arias' and the Psalm settings acting as chorales.

I wanted to underpin the text with appropriate musical expression while maintaining the strong link to water. Whereas for the rest of the cantata water is acting as a metaphor for various aspects of life, spirituality and creativity – '*i.e.,* life sources' – here I wanted to emphasise the bilateral relationship: MUSIC IS WATER and WATER IS MUSIC, such that the music space evokes this deeply metaphorical relationship. I was drawn to Steven Feld's description of his own field research *'Flow like a Waterfall': The Metaphors of Kaluli Musical Theory* in which he shows how the Kaluli, a culturally distinct people of the Great Papuan Plateau use the metaphor of the waterfall to talk about music.[74] This especially applies to music expressing sadness – with the intention of engendering nostalgia, reflectiveness and even weeping in the listener – as performed in ceremonies called *Gisalo*, also the name given to the music – *sa-gisalo* being the text. This recalls Kreuger's proposal of music as an 'emotion-extending resource' and was a perfect fit as I wanted the *blended metaphorical space* to evoke the underlying sadness of the predicament expressed in the direct quotes from those with kidney failure. *Sa-molan* refers to the sensory experience associated with the text fitting to the melody and is described by the metaphor of a waterfall plunging into a water pool. Many of the terms used to describe the musical phrases and choice of pitches derive from this metaphor including *sa-we:l* – the leading pitch of a falling phrase, the point at which water comes over the top of a water fall, *sa-ga*, the way in which a waterfall branches into different channels on the way down, *sa-mogan* the flow of water, *mogan* the water pool. *Sa-gu* is the generic term for the waterfall sound, and the different sounds at different points of a waterfall use this root – e.g. *sa-gulu*, the deep note or 'drone' which is also the pitch centre of the phrase on which it ends. Generally, the phrases fall in pitch and almost always with pitches of a major second or a minor third, derived from the call of the *muni* bird but named using waterfall terminology:

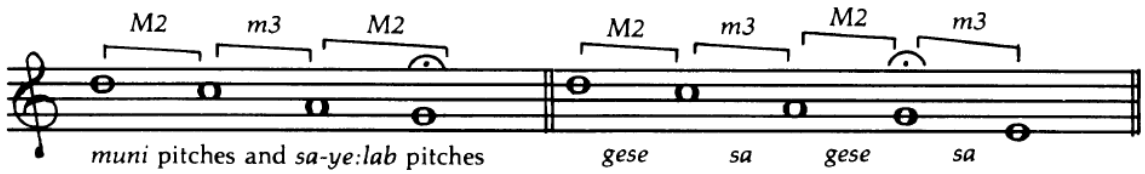


Figure 13. Pitches found in *gisalo* music; *sa* on itis own can mean waterfall.

[74] Steven Feld, 1981

I have adopted these ideas to develop the pitch and interval selection and phrase shape for the instrumental music as shown in the following example (bars 425-7):

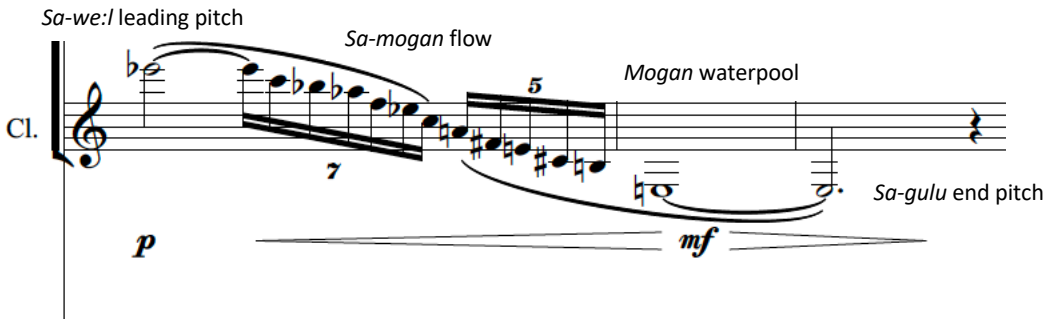


Figure 14: Falling 'waterfall' phrase in the clarinet, with examples of Kakuli metaphor.

These phrases are layered on top of each other (as shown in figure 15) to create the overall sound world onto which the choral setting of the text was subsequently added, using the same pitch structure, effectively creating a lament. As the section develops the music thins out, losing colour, until eventually only a solo viola remains.
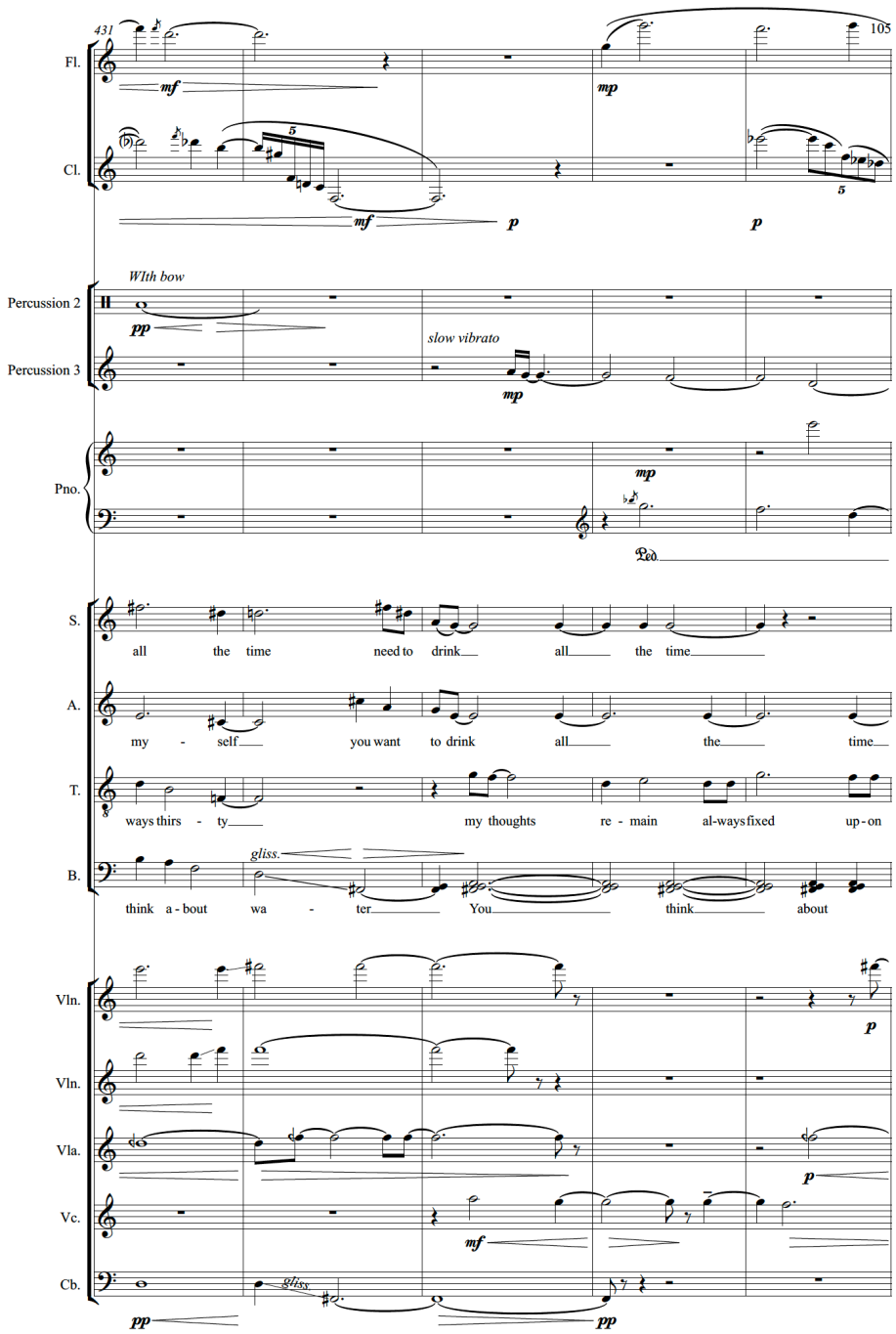


Figure 15: (See score bars 431-435) Example of the layering of the waterfall-inspired music phrases (Percussion 2 is the thundersheet played with a bow to obtain harmonics and Percussion 3 is Vibraphone with a slow motor). The use of glissandi by the strings to shift the tonality and inclusion of detuned pitches speaks to the detuned harp metaphor.

Chapter 6: Conclusion

My main yardstick of compositional success would be if the music I have written takes the listener closer to the experience of illness – evoking how it *feels* to be 'bodily' ill – in its broadest sense. Prior to embarking on this project, I looked for examples of this in Western Art Music. Illness is of course used as a dramatic plot device and not infrequently as a literary metaphor (especially in opera[75]), but in each of these cases illness is the source for the metaphor rather than the real target of interest. It is true that certain themes emerge, such as the depiction of madness - as discussed in chapter 3 - although in reality I would contend that these examples are more often depictions of extreme psychological distress than examples of specific mental health issues, let alone performing the important function of giving the *prima donna* an opportunity to show off dazzling vocal and dramatic skills! Portrayal of lovesickness is much more common than that of clinical illness and in many ways, this is much closer to what I am intending to achieve with the help of blended metaphor. While thinking in terms of blended metaphor has been used productively within music analysis,[76] I am not aware of its deliberate use in the process of composition itself. Specifically, it allowed me to combine my expert knowledge of how illness affects the individual (text space) with musical gesture, timbre, harmony and structural forms, as outlines in Chapter 2, (music space) to form 'embodied' building blocks that could then be combined to tell my illness narratives.

Why was it important for me to do this? To some extent it was to address what I perceive as under-representation of the experience of actual illness in classical music – something that popular music, music theatre in particular, it could be argued has achieved more successfully.[77] I was also keen to 'give voice' to sufferers of kidney disease, whose plight is often under-appreciated when compared to other medical conditions such as heart attacks, cancer and increasingly, mental health conditions. The nature of their suffering is perhaps less overt, with symptoms such as thirst and fatigue rather than pain and the well-publicised side effects of chemotherapy, with a perception that transplantation solves the problem. Whilst transplantation is life-transforming for most it is not the end of the story. But perhaps most importantly it was to fulfil a personal need to explore the

[75] In their book *Opera: Desire, Disease and Death* (1996) Linda and Michael Hutcheon scope out the representation of illness in this musical form. As would be expected there is ample representation of contagion (e.g. tuberculosis, syphilis, cholera as metaphors for poverty, sexual morality and risk taking, e.g. *La Boheme, Parsifal,* - in which Amfortas suffers from an unhealing wound that has characteristics of syphilis, 'a medical sign' of the 'scourge of God', *The Rakes' Progress* and *Death in Venice*).

[76] Zbikowski, 2008; Spitzer 2018

[77] Musical theatre has a particularly strong record in the representation of mental illness, one that is growing and increasingly explicit. Brian Yorkey, the lyricist of the Pulitzer Prize-winning *Next to Normal* (dealing with bipolar disorder), is quoted as saying "Music operates on levels that words and images alone don't…this very subconscious, emotional level, [which] vibrates with your soul".

experience of illness from a different perspective than the one I have been adopting throughout my life as a clinician and medical researcher.

Perhaps the greatest change in the practice of medicine over the last 40 years has been the slow progression from a disease centred model, via a patient centred approach to a person-centred model of care.[78] As students we learned about diseases almost exclusively and were left to work out for ourselves how these affected real people by listening and observing and it is only relatively recently that we have truly put the person experiencing disease – the one who is ill – absolutely at the centre of things. (Some may argue this still has a long way to go). This change has been very evident in my research career, which started in a medical laboratory, moved into the clinic in terms of the problems I was trying to solve and now routinely involves patients as co-investigators in the design, interpretation and dissemination of research findings. In this context I see my compositions, by focusing on the experience of illness, as continuing this direct line of discovery. The body is a 'curious harp', as Bacon observed, and using music to complete this journey seemed entirely natural to me. Has this had an impact on the way I practice medicine? I think so. I would like to think I have always been empathic and holistic – but it has brought a new focus when I try to put myself in the shoes of my patients. I think it is about imagining their experience of illness *with the body* and that this is achieved more successfully through music than words alone.

[78] Morton and Sellars, 2019

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Appendix 1: List of scores (PDFs) and audio files

Living Water – String Quartet

Full Score: *Living Water String Quartet Full Score.pdf* (see 2nd Movement, pages 21-31 and 4th movement, pages 37-53).

Audio file (wav): Living Water String Quartet.wav (Performance by the Ligeti String Quartet)

Dys-embodied Dance

Full Score: *Dys-embodied Dance.pdf*

Audio file (wav): Dys-embodied Dance.wav

Re-embodied

Full Score (a) *Re-embodied Full Score.pdf* (Black and White)

(b) *Re-embodied Full Score Colour Coded.pdf* – indicating the thematic and harmonic material in different colours as described in the text, Chapter 4

Audio file (wav): Re-Embodied.wav

(Workshop performance by the Birmingham Contemporary Music Group)

The Noise of Waters

Full Score: *The Noise of Waters Full Score.pdf* (see bar 410, page 101 to bar 488, page 112)

Audio file (wav): The Noise of Waters Cantata.wav

The full scores can also be found at the back of the hard-bound copy.

Appendix 2: Developing the lyric for “More than Metaphor”, Section 5 of the Cantata ‘The Noise of Waters’

These texts and their sources are summarised below this description of the methods in tabular form.

A literature search with the following terms was undertaken using PubMed and related online databases: ‘kidney failure’; ‘dialysis’; ‘qualitative research’; ‘thirst’, ‘fluid intake’; ‘symptoms’

From the articles identified, direct patient or carer quotations were extracted (see second column in the excel database, with their respective sources, third column) and from these potential phrases were identified relating specifically to the symptoms of thirst (green) and the associated existential threat (red). From these a further selection was made for use in the final lyric, as indicated by a “Y” in the first column, largely on aesthetic grounds. Finally, these phrases were ordered to construct the lyric, which focusses initially on the symptoms related to thirst but then moves into the existential threat these pose.

Phrases taken from qualitative studies investigating the experience of kidney failure

Used	Phrases (direct quotes) Extracted	Reference
	I was told I had to change my diet	doi.org/10.2215/CJN.12400720
	We were constantly overwhelmed and putting out fires	doi.org/10.2215/CJN.12400720
	Being told that I had to change my diet was like telling me that my life was over	doi.org/10.2215/CJN.12400720
	Only that they're going to be putting fluid into my belly. It's an input and output, so you put in the fluid and you take it out, and you put it in	doi.org/10.1186/s12882-020-01870-1
	You're just going to die	doi.org/10.1186/s12882-020-01870-1
	I feel as though I'm going to lose a lot of my freedom.	doi.org/10.1186/s12882-020-01870-1
	they were drinking (not me)	doi:10.1136/bmjopen-2017-019926
	I couldn't soak in water	doi:10.1136/bmjopen-2017-019926
	I'm covered in scars… my face is really fat… I just hate looking at myself, I think I look like a freak	doi:10.1136/bmjopen-2017-019926
	I do have an illness yet I still want to establish that I'm … normal… like everyone else	doi:10.1136/bmjopen-2017-019926
	treading water	doi:10.1136/bmjopen-2017-019926
	When they talk to me about the water, they're nice about it. They do scold somewhat, but I know that my fluid gains are a problem. They've done things to help me.	Thesis Thomas Bordelon Montana State University
	Drinking less water—I thought it would be harder	Thesis Thomas Bordelon Montana State University
	I've been thirsty for 19 years. No one but a dialysis patient could fully appreciate being thirsty like that.	Thesis Thomas Bordelon Montana State University
	You know, you just don't absorb fluid from the atmosphere.	Thesis Thomas Bordelon Montana State University
	She was always fluid over-loaded and didn't take any responsibility about it.	Thesis Thomas Bordelon Montana State University
		Thesis Thomas Bordelon Montana State University
	Bill has helped me with not drinking so much fluid. I don't know how to tell how much weight that you have on	
	This guy .. threatened to leave and drink a bottle of Rye	Thesis Thomas Bordelon Montana State University
	it's a machine that takes off the fluid	Thesis Thomas Bordelon Montana State University
	I was scared to start with, but I knew I had to go on dialysis—I couldn't breath.	Thesis Thomas Bordelon Montana State University
	Choices are all our own – how we're sleeping, how we are eating, how we are breathing, how we are moving – I would say that we have ultimately a huge control over that	DOI:10.1111/bjhp.12289
	I feel like I've got a big, heavy load on me and I'm just so tired.	DOI:10.1111/bjhp.12289
	Immersion in an Ocean of Psychological Tension: (meatphor used by a mother)	doi: 10.4103/ijnmr.IJNMR_156_17
	She needs to drink a little water	doi: 10.4103/ijnmr.IJNMR_156_17
	Sometimes, my daughter secretly goes to our neighbor's house to drink water	doi: 10.4103/ijnmr.IJNMR_156_17
	My daughter and I are fighting over the use of water.	doi: 10.4103/ijnmr.IJNMR_156_17
	When you are not supposed to drink, that's all you think about.	doi:10.1053/j.jrn.2009.09.001
	The machine and that tech in there are my crutch. I know I can come in and they are going to take care of the fluid	doi:10.1053/j.jrn.2009.09.002
	To me I am not drinking that much. But you know, when I get to dialysis I overdid it	doi:10.1053/j.jrn.2009.09.003
	By the time I take medicine … that quart of water is gone	doi:10.1053/j.jrn.2009.09.004
	If that fluid builds up and you can't get rid of it, that poison goes around your heart and through your whole body	doi:10.1053/j.jrn.2009.09.005
	What really helps me [adhere to a fluid restriction] is remembering what it's like to not breathe."	doi:10.1053/j.jrn.2009.09.006
	I try to drink water rather than something that tastes good, because if it tastes good, I want to drink more of it	doi:10.1053/j.jrn.2009.09.007
	I was just sitting there in the waiting room. There was a group of people waiting to go on the machine. People were talking fluid	doi:10.1053/j.jrn.2009.09.008
	every day that you come in here overloaded, you are shortening your life span. It's that critical. You have to let them know that	doi:10.1053/j.jrn.2009.09.008
	My problem is liquids, …the one thing that is the most difficult. I have tried everything. I have tried sucking on ice, buying a certain water bottle, a certain size cup.	doi:10.1111/jorc.12185
	on a hot day, you want to drink but you know you have to control your intake	DOI: 10.1177/1359105314525066
	Sip on a drink, but don't swallow it right away, play with your tongue and then you swallow it.	DOI: 10.1177/1359105314525066
	You can suck on an ice cube and then spit it out.	DOI: 10.1177/1359105314525066
	The whole day I'll be checking my weight to see that I don't over-drink	DOI: 10.1177/1359105314525066
	I just eat plain rice, so that I'll be less thirsty.	DOI: 10.1177/1359105314525066
	I will think of water as my enemy then I won't	DOI: 10.1177/1359105314525066
	I will think of the spasms I will suffer later and then tell myself not to drink too much	DOI: 10.1177/1359105314525066
Y	I fail to resist, I am always thirsty; I can't find a way to avoid the drinking need; my thoughts remain always fixed upon thirst and water; my thoughts are always fixated on the bottle, and I am always close to the fridge.	doi.org/10.1053/j.ajkd.2014.09.012
Y		doi.org/10.1053/j.ajkd.2014.09.012 [Primary Source
	I get so tired when I cut down on water	doi.org/10.1016/0277-9536(82)90069-7]
	Do I want to live or drink?	DOI: 10.1179/1753807613Y.0000000031
	If I am going to live thirsty, I don't want to live	
	know when you are making love and you want to stop half way, how many people can control that. So when I have that water in my mouth it's like something is holding my hand, maybe God, and then I give up and I say, oh well I'll have it all.	doi.org/10.1053/j.ajkd.2014.09.012 [Primary source DOI: 10.1179/1753807613Y.0000000031]
Y	I'm terribly thirsty; I can't help myself…it is stronger than me.	PubMed ID: 22866360
	Now, however, I'm terribly thirsty, and I don't succeed in controlling myself	PubMed ID: 22866360
Y	I need water	PubMed ID: 22866360
	I resemble a person for whom drinking is a drug…the thought is always there,	PubMed ID: 22866360
	The problem is that the thought remains always there. My brain is fixated on water. Apart from the hours during which I sleep, my mind is fixated on water.	PubMed ID: 22866360
Y	I am a prisoner; you are no longer free to do as you wish, like a person condemned to death. Because you have everything in front of your eyes and you know that you cannot do it, you cannot drink. I am a prisoner, and I would not know how to express it in any other way.	PubMed ID: 22866360
Y	I try to control myself. I try to drink less,	PubMed ID: 22866360
	Our body is made of 70% water, so how can a person not drink?	PubMed ID: 22866360
	have difficulty breathing, and I don't want to stay like that…	PubMed ID: 22866360
	I like to drink lots of water; I try my best, but at the end of the day I'll be dead anyway.	DOI: 10.1179/1753807613Y.0000000031
Y	I don't feel like I'm alive when I cut down on water	doi.org/10.1016/0277-9536(82)90069-7

	'Cutting down on water is really rough on the body; you don't feel like you're really alive'	doi.org/10.1016/0277-9536(82)90069-7
	It's so hard to force yourself to cut down on water. I always drink more than I should	doi.org/10.1016/0277-9536(82)90069-7
Y	Every day you think about drinking water. Even now my mouth is drying out . . . I think about water, how much fluid I can drink	doi.org/10.1080/13548506.2012.658819
Y	I feel that I cannot breathe, so I went for a check-up at the hospital and water had already accumulated in my lungs	doi.org/10.1080/13548506.2012.658819
Y	and you are thirsty all the time, just need to drink all the time...	doi:10.1177/1359105313475898
	all fluid comes out, your skin gets really dry and itchy ... irritating because you don't have enough fluid you know	doi:10.1177/1359105313475898
	most of your body is fluid anyway when you cannot drink enough it's difficult but	
	but the fluid by drinking two extra glasses than you should have, you do suffer	doi:10.1177/1359105313475898
	drink more than enough water....so ... out of breath	doi:10.1177/1359105313475898
	not to drink to too much water ... most people enjoy their water	doi:10.1177/1359105313475898
	cause you get thirsty	https://search.proquest.com/dissertations-theses/impact-demographics-social-support-health-beliefs/docview/366834328/se-2?accountid=8630
Y	I love ... drinking a very tall glass of cold water; I'm always thirsty...I feel drained and parched	https://search.proquest.com/dissertations-theses/impact-demographics-social-support-health-beliefs/docview/366834328/se-2?accountid=8630
	want to gobble down, drink, drink, drink, drink, and that, that's the hardest	https://search.proquest.com/dissertations-theses/impact-demographics-social-support-health-beliefs/docview/366834328/se-2?accountid=8630
	I want to be in control of my own health, destiny	ProQuest Document 216523921
	has made the tongue feel bitter	doi:10.1136/bmjopen-2018-024739
	we have a lot of tension in our mind	doi:10.1136/bmjopen-2018-024739
	My problem is liquids, as long as I have been on dialysis that is the one thing that is the most difficult. I have tried everything. I have tried sucking on ice, buying a certain water bottle, a certain size cup	doi:10.1111/jorc.12185
	me having all this fluid on	doi.org/10.1053/j.ajkd.2014.09.012
	like fighting nature all the time because you want to drink all the time.	ProQuest Document 216546142
	man in the desert crawling along with his tongue hanging out..... but I'm doing this fantasizing about drinks.	ProQuest Document 216546142
	that...goodbye to taking as much fluid as I want to	ProQuest Document 216546142
Y	visions..... such as a mountain with fresh water gushing forth	doi.org/10.1053/j.ajkd.2014.09.012
Y	the thirst is "stronger than me," "tortured," "fixated," "obsessed," "addicted." 'distressing' and 'for some could never be satiated'.	doi.org/10.1053/j.ajkd.2014.09.012

Appendix 3: About the Author

I am a clinician scientist working extensively in the field of kidney failure. I currently hold the position of Professor of Nephrology and Dialysis Medicine at Keele University and I am an Honorary Consultant Nephrologist at the University Hospital of North Midlands. I undertook my medical training at King's College Hospital and my doctoral research at Guy's Hospital in London before moving to the North Midlands.

For many years my research has focussed on peritoneal dialysis, especially the role of the peritoneal membrane in determining the success of this treatment for kidney failure. This led to an increasing concentration on the management of fluid status in both peritoneal and haemodialysis and the understanding of centre-level practices in improving the experience of dialysis treatment.

From 2010 to 2012 I was president of the International Society of Peritoneal Dialysis, a role which spurred my interest in the problem of inequity of access to treatments for kidney failure. I currently co-lead the International Society of Nephrology's Kidney Failure Strategy and the development of a toolkit for delivering dialysis in resource-limited settings in conjunction with the WHO.

My research has been supported by Kidney Research UK, the National Institute of Health Research (UK), the European Union (Horizon 2020) and the National Institutes for Health Research (US).
In 2013 I was awarded the Distinguished International Medal by the American National Kidney Foundation and in 2018 the Oreopoulos Award from the International Society of Peritoneal Dialysis.

My education was largely funded by music scholarships from the ages of 9 to 18, both singing and instrumental, at King's College Choir School Cambridge and then Canterbury, where I first studied composition with Alan Ridout. I composed regularly well into my 20s but inevitably this took second place to my academic medical work, which also fulfilled my creative drive. I have remained an active musician throughout, studying singing with Nicholas Powell (previously Royal Northern College Music) and I conduct the Border Singers, a chamber choir based in Whitchurch, https://sites.google.com/view/bordersingers

To listen to more music I have composed please go to https://tuningthiscuriousharp