

MUSIC

ARCHITECTURE

**THEATRUM
MUNDI**

Music & Architecture

Ways of Listening

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Introduction

Kiera Blakey

Music and Architecture is an ongoing workshop series organised by Theatrum Mundi, a professional network of academics, architects, planners, performing and visual artists, hosted by LSE Cities. The aim is to bring together a diverse group of practitioners to discuss in small and informal groups, the relationship between physical space and musical space. The first workshops were divided into four parts: Harmony, Rhythm, Melody and Narrative, and Porosity.

The topic arose from Theatrum Mundi founder, Richard Sennett. Perspective, distance, height, balance, proportion, weight, density, light, colour and mass are fundamental elements within our experiences of both music and architecture. For architecture to come into existence, boundaries of physical space must be defined and for music, boundaries within our experience of time need be defined. So can an architect who sculpts and shapes physical space, learn from a musician who creates virtual environments of musical space?

The four discussions saw musical software developers, classical and pop musicians, an acoustician, choreographers, architects, urbanists and social scientists discuss topics such as whether some rhythmic forms – either of musical composition or a city plan – can be compelling and others monotonously repetitive. Whether the disjunction between linear structures in architecture, such as the sequential convergence towards a place like the Champs Élysées, might compare to a crescendo or climax in music. How might the endless shopping street compare to loops in music and what does this do to the way we listen to music, perform it, and inhabit and transform space?

The four contributions in this publication represent the breadth of conversation that arose from bringing together a multidisciplinary group. It's interesting that despite vast gaps between genre, profession and experience, a core thread links each contribution – the notion of an unfinished, non-fixed or open space, whether that be in the design of porosity and presence in musical venues as in Richard Sennett's contribution or in challenging our experience of listening to recorded material in the contribution from Lexxx Dromgoole and Gwilym Gold.

The title of this publication takes its name from architect Andrew Todd, an active member of Theatrum Mundi. It reflects the contributions from both Ronan O'Hora, how do we really hear what's around us, and Laura Marcus – might we come to 'listen' to a house, street or town as an audience does to a symphony.

Theatrum Mundi's role is that of provocateur and enabler where ideas that link the arts and urbanism can be questioned, discussed and debated. Founded in 2012, the project is currently based in London and New York, with partnerships and projects in Frankfurt, Berlin, and Copenhagen. It organises workshops for small groups, salons which are slightly larger discussions, conferences for the public, exhibitions and research.

Rhythm-Studies

Laura Marcus

Laura Marcus is Professor of English Literature, New College, University of Oxford and Goldsmiths College London. Her book publications include *Auto/biographical Discourses: Theory, Criticism, Practice* (1994), *Virginia Woolf: Writers and their Work* (1997/2004) and *The Tenth Muse: Writing about Cinema in the Modernist Period* (2007; awarded the 2008 James Russell Lowell Prize of the Modern Language Association).

‘Rhythm is the fundamental and vital quality of painting, as of all the arts – representation is secondary to that, and must never encroach on the more ultimate and fundamental demands of rhythm’ – Roger Fry¹

The critic John Middleton Murry, writing of his conversations with the Scottish painter J.D.Fergusson in the early decades of the twentieth century, recalled (in his autobiography *Between Two Worlds*):

One word was recurrent in all our strange discussions – the word “rhythm”. We never made any attempt to define it; nor ever took any precaution to discover whether it had the same significance for us both. All that mattered was that it had some meaning for each of us. Assuredly it was a very potent word.

For Fergusson [rhythm] was the essential quality in a painting or sculpture; and since it was at that moment that the Russian ballet first came to Western Europe for a season at the Châtelet, dancing was obviously linked, by rhythm, with the plastic arts. From that, it was but a short step to the position that rhythm was the distinctive element in all the arts, and that the real purpose of ‘this modern movement’ – a phrase frequent on Fergusson’s lips – was to reassert the pre-eminence of rhythm.²

In Fergusson’s reported sentiments there is the suggestion that ‘this modern movement’ had come into being, or had found its true function,

¹ *A Roger Fry Reader*, ed. Christopher Reed (University of Chicago Press, 1996), pp. 105-6.

² John Middleton Murry, *Between Two Worlds: An Autobiography* (London: Jonathan Cape, 1935), pp. 155-6.

in the reassertion of 'the pre-eminence of rhythm'. In this account, modernism rediscovers or recovers a rhythm, whose centrality, it is implied, had become submerged. Fergusson (in Murry's account) represents 'rhythm' as the 'quality' which cuts across the divisions between the arts, although the fact that they made no attempt to define the 'quality' leaves open the possibility (perceived by the more cautious Murry) that 'rhythm' in the various and different arts is to be understood as a homonym rather than as an identity.³

The absence, or refusal, of strict 'definition' alluded to by Murry has as one of its contexts the vitalism (with its resistance to classification and differentiation) to which 'rhythm' was central, and which is part of that 'great hymn to energy', in Jacques Rancière's phrase, sung by artists and thinkers in the early twentieth century. Rancière brings 'rhythm' into this energetic field in his quotation from the modernist writer and critic Blaise Cendrars: 'Rhythm speaks. You are ... Reality has no meaning any more. Everything is rhythm, speech life ... Revolution. The dawn of the world today'. Rancière comments: 'The new common term of measurement, thus contrasted with the old one, is rhythm, the vital element of each material unbound atom which causes the image to pass into the word, the word into the brush-stroke, the brush-stroke into the vibration of light or motion'.⁴ In this passage from image to word to brushstroke to photographic/cinematographic image (these technologically mediated forms being one way of interpreting 'the vibration of light or motion') we find a desire to (re)connect artistic or aesthetic forms which had been artificially divided into the arts of space and the arts of time, or into the

³ Wendy Steiner uses these terms to explore 'interart analogies' – in particular the perceived relationship between painting and literature – in her *The Colors of Rhetoric: Problems in the Relation between Modern Literature and Painting* (University of Chicago Press, 1982).

⁴ Jacques Rancière, *The Future of the Image*, trans. Gregory Elliott (London: Verso, 2007), pp. 44-5.

verbal and the plastic arts. (The desire for 'a new Laokoön' is one aspect of this newly constituted field of connections.)

Murry, Fergusson and Cendrars were writing from the perspectives of a modernity in which 'the dawn of the world today' was the beginning of a new century. Fergusson's 'little magazine' *Rhythm* (1911–13) emerged from this context, and reveals the influence of a vitalist philosophy strongly influenced by the writing and thought of Henri Bergson. A full understanding of the meanings of 'rhythm' for the modern period requires, however, a longer historical perspective, beginning with exploration of the late nineteenth century in a range of contexts: philosophy, experimental psychology, science, music, aesthetics, art and literature. The analysis of 'rhythm' was central to all these fields. As or more significantly, 'Rhythmics' was in the process of formation at this time as an area of study, or a discipline, in its own right. As in the case of 'ethology' (the science of the study of character, which John Stuart Mill had worked to develop as an independent discipline), 'rhythmics' could be understood as a field of thought or a science which failed to achieve the institutional or conceptual status imagined for it. It was at once all pervasive and, in disciplinary terms, homeless. It eluded definition in ways which, in the field of poetics as well as science, produced in some contexts ever more detailed and determined attempts to take its measure, though in others its very amorphousness as a concept was its most significant, productive and creative feature.

The concepts of 'rhythm' as motion and as connectivity, two of the central topics that emerge in Herbert Spencer's influential writings on 'The Direction and Rhythm of Motion', in his *First Principles of a New System of Philosophy* (1862). In Chapter X of the volume, 'The Rhythm of Motion', Spencer argued for the omnipresence of 'rhythm', building up from the physical world and its laws to the realms of social

organisation and human creative activity. 'Rhythmical action' – initially defined through the terms of 'vibration' and 'undulation' - is to be found in the impact of a rising breeze on a becalmed vessel or, on land, in the 'conflict between the current of air and the things it meets': 'The blades of grass and dried bents in the meadows, and still better the stalks in the neighbouring corn-fields, exhibit the same rising and falling movement'. For Spencer all motion is rhythmical, and the physical universe exists in a mode of perpetual motion which he defines in terms of 'a conflict of forces not in equilibrium': 'If the antagonist forces at any point are balanced, there is rest; and in the absence of motion there can of course be no rhythm'.

Spencer found rhythm not only at the largest levels (in, for example, geographical processes) but in the bodily processes – ingestion, excretion, pulsation – of each individual organism, and in human consciousness, whose rhythm he defined in the terms of a departure and return from and to mental states and feelings. A more conspicuous rhythm, 'having longer waves', he argued, 'is seen during the outflow of emotion into dancing, poetry, and music. The current of mental energy that shows itself in these modes of bodily action is not continuous but falls into a succession of pulses'. The rhythmic dimensions of aesthetic expression start from the body, and 'the bodily discharge of feeling', and their naturalness is proven by the fact that they are also revealed in the cadences – the rise and fall - of ordinary speech.

Spencer's terms and concepts are important for two particular dimensions of 'rhythmics'. The first, exemplified in his focus on the 'bodily discharge' of 'feeling', is the centrality of 'rhythm' to the 'kinaesthetics' and 'physiological aesthetics' which developed in the late nineteenth century, in the work of thinkers including the biologist Grant Allen, the psychologist Havelock Ellis and the philosopher Vernon Lee. The second

line of exploration is that of the impact of theorizations of rhythm, in its definitions as 'pulsation', 'conflict of force', 'continuous motion' and 'rise and fall', on the aesthetic theories and the literature of the period. Walter Pater, in the Conclusion to his collection of essays *The Renaissance*, famously described Life as consisting of a limited number of pulses, adding: 'For our one chance lies in expanding that interval, in getting as many pulsations as possible into the given time. Great passions may give us this quickened sense of life'.

Concepts of 'rhythm' (often linked to 'periodicity', as in the theories of Wilhelm Fliess and Sigmund Freud) were also closely linked to models of sexuality and gender at the turn of the century. Marie Stopes used the concept of 'a fundamental rhythm of feeling' in women (to be represented as 'a succession of crests and hollows as in all wave-lines') to argue that 'woman has a rhythmic sex-tide which, if its indications were obeyed, would ensure not only her enjoyment and an accession of health and vitality, [but] would explode the myth of her capriciousness ... We have studied the wave-lengths of water, of sound, of light; but when will the sons and daughters of men study the sex-tide in woman and learn the laws of her Periodicity of Recurrence of desire?'⁵

Stopes's insistent metaphorising of the concept of 'rhythm' in relation to waves and water indicates the widely held but mistaken view that the etymology of 'rhythm' is 'rhein', deriving from the observed ebb and flow of ocean waves. In the later twentieth century, linguists (including Emile Benveniste) showed that 'rhythmos' was, in ancient Greek tragedy and philosophy, synonymous with 'skhema' or 'form', but that whereas 'skhema' is to be understood as a fixed form, 'rhythmos' is form in

⁵ Marie Stopes, *Married Love* (London: Putnam, 1917), p. 57.

motion, fluid and changeable. 'Rhythmos' is thus to be understood as 'the particular manner of flowing'. This understanding of 'rhythm' as movement and 'becoming' can be traced through from Nietzsche to Bergson and his modernist followers and detractors in literature and the visual arts. The relationship of late Victorian and modernist writers and thinkers to Classical aesthetics and culture also becomes crucial. It was fundamental to Nietzsche's distinctions between the 'rhythms' of Classical and Modern thought, which come to define the different concepts of time, historicity and cultural formation in the two periods.

While Nietzsche, trained as a philologist, must be assumed to have known the derivation of the term, the desire of numerous other writers and thinkers of the period to connect 'rhythm' (etymologically and conceptually) with natural and organic processes is highly significant – a 'creative misprision' on a major scale. The metaphors of the 'pulse' and the 'heart-beat', as well as of waves, come to define concepts of 'rhythm' in a very wide range of contexts. One dimension of the fascination with 'rhythm' in the period arose from the desire to reclaim or retain human and natural measures in the face of the coming of the machine and the speed of technological development.

Many of the 'rhythm-scientists' of the late nineteenth- and early twentieth centuries defined rhythm as the antithesis of both stasis and continuous motion: it was for them not a straight line but a wave. A similar distinction would be drawn by Henri Lefebvre, whose 'rhythmanalysis' rests on a differentiation (though also a relationship) between 'linear' and 'cyclical' time. The work of art, he argued:

displays a victory of the rhythmical over the linear, integrating it without destroying it. Cyclical repetition and linear repetition meet and collide. Thus, in music the metronome supplies a linear tempo;

but the linked series of intervals by octaves possesses a cyclical and rhythmical character. Likewise in daily life: the many rhythms and cycles of natural origin, which are transformed by social life, interfere with the linear processes and sequences of gestures and acts.⁶

These complex processes would be the subject, for Lefebvre, of rhythmanalysis, 'a new science that is in the process of being constituted ... [which] situates itself at the juxtaposition of the physical, the physiological and the social, at the heart of daily life'.⁷ In further and fuller writings in this field of study, Lefebvre argued that 'rhythm' was the most fundamental, and the most overlooked, of all the relations that define natural, social and cultural life. In music, he suggests, there is significantly more exploration of melody and harmony than of rhythm. In the broader experiential and phenomenological fields, we live within rhythms whose measure we have barely begun to understand.

'Rhythm enters into a general construction of time, of movement and becoming' (79), Lefebvre writes, his terms gathering up those of Herbert Spencer, Henri Bergson and other 'rhythmists' whose writings on the topic Lefebvre, insistent on the inaugural dimensions of his own 'rhythmanalysis', does not take up. To open up the longer history of rhythm-studies, however, is to see that it has had its own patterns of recurrence, appearing and disappearing as part of a conceptual history whose lineaments have indeed not been fully traced. Central to this history, and to the (re)emergences of 'rhythmics', are the models, or the utopias, of an interdisciplinarity and a synaesthesia in which connections become far more significant than divisions. As Lefebvre writes, the

⁶ Henri Lefebvre, *Critique of Everyday Life, Volume 3*, trans. Gregory Elliott (London: Verso, 2005), p. 130.

⁷ Henri Lefebvre, *Rhythmanalysis: space, time and everyday life*, trans. Stuart Elden and Gerald Moore (London: Continuum, 2004).

(future) rhythm analyst 'will come to "listen" to a house, a street, a town, as an audience listens to a symphony'.

On Bronze

Lexxx and Gwilym Gold

Lexxx is a producer, Gwilym Gold a musician. Together they co-developed *Bronze*, a new music format that builds and transforms every aspect of a piece of music as it plays, to create a unique version on each listen. Gwilym Gold summarises what led to the production of *Bronze*.

I realised the power of *Bronze* when I walked into the room to introduce the first public playback of the piece we had been working on, *Tender Metal*, and I found myself lost for words with nerves and excitement. Although I had performed in a fair number of circumstances in my life, I had never found myself struck this way. Never before had the presentation to people of a piece of my music (in which I had no active involvement, apart from to press start and stop) felt so distinctly like a performance. Is this because in a way it was a performance? And is it possible for more, if not all, 'recorded' music to exist in this way? You're probably wondering what I'm talking about. Let's go back a little bit so I can give you a start on the thinking. Coming from a background in Jazz and improvised music, it had always seemed clear to me that a discrete sequence of events is not necessarily what defines a song or piece. In most circumstances, (and certainly before the advent of recorded music), when performing a song, a musician will - rather than trying to fulfill an exact sequence of events - be working intuitively within a set of rules. Such rules can have a bearing on everything from the detailed nuances to larger aesthetic decisions, depending on the parameters. A number of factors, including the circumstances and the nature of the piece itself will define how stringent these rules are. It is of course possible that the rules can be so open you end up with a distinctly different piece from one performance to the next. It is also, though, possible that if the parameters are set in a certain way, each performance, though different in detail, will retain some kind of identity from one performance to the next. I would venture here to say that the identity of a song or piece lies not in a specific sequence of events but within a margin of possibilities. With that in mind, let's go back to the piece I mentioned at the start,

Tender Metal. In the early stages of production, myself and Lexxx were using a multitude of software processes alongside a lot of performance ideas in search of some kind of sonic aesthetic and mood to accompany a set of songs. Although what you might call a sonic palette and some kind of mood were building fast, it became increasingly clear that no one performance of a song felt definitive. When ideas, sounds, rhythms and textures were being performed and manipulated live around a song, it often felt distinctly more vital than when listening back to recordings of what we had done. It was also becoming apparent that the identity of each song lay in something more undefinable than a particular sequence of parts or sounds. It was through this process and these realisations that it became clear that the music should exist as a performance, as a living breathing entity and not as simply a document. It became starkly apparent that traditional recording and presentation of this music (as much as we love a lot of what that can be) was simply not the most compelling way for this music to exist. The existing formats began to feel very limiting for what we wanted to achieve. In fact, when considering the power of the devices that most people use for listening these days it began to feel increasingly strange to us that music formats have developed little, fidelity and length aside, since the gramophone. That people still go and see live music is proof enough that high-fidelity stereo sound files are not, and should not be, the end of line for recorded music.

In many ways, our new music format *Bronze* was a natural extension of other software systems developed during various production processes to manipulate / augment / create sounds, and in fact all of these initial pieces of software were designed for one purpose: to release things from the 'exact repetition' that computers tend to impose upon a creative work. Everything within a conventional software environment is entirely repeatable - within any digital system, two identical inputs will both

cause identical outputs. In the analogue domain, or with any process outside of a computer, nothing is perfectly repeatable, which means that throughout the thousands of processes encountered during the making of a record, each would be significantly shaped by factors outside of one's control. In short, it always seemed to us that working outside of software almost always rewarded us with something deeper, less controlled and more unique, shaped not only by our ideas, but by all elements of chance and randomness that exist in the real world.

It was only later, during some early experiments that we discovered that software is also very good at performing something other than exact repetition. Software is perfect at making impartial random decisions - it can create the exact opposite of repetition without the biases that human judgement imposes - software is able to reliably replicate the chance and randomness that was missing from the existing software we had been using. The first pieces of software were all experiments with rhythm - applying both subtle and drastic variation to the timing of rhythmic elements to simulate the looseness in timing you might expect in a real performer, but applied to sounds only possible with digital technologies. We quickly discovered that whilst pure randomness was a great tool to introduce variation into precise systems, it was only when combined with the influence of a human bias that this random variation produced musical results. What we had been looking for was a combination of factors - human creative judgement augmented by authored random variation.

Of course terminology gets vague and difficult when talking about this sort of thing but I hope you get the idea. I imagine everyone is pretty familiar with and can understand why recorded music came about and why it became so popular so quickly, but I think a more relevant question is why that is still the case when other possibilities are now available.

Music itself is not something you look at or touch and is not something you can really own. Music delivery formats merely provide a vessel for the music to live from. This is becoming even more abstracted with the rise of music in 'the cloud'; whatever your choice of delivery, the music is projected into the air around you and then it is gone.

Throughout the course of creating both the album, *Tender Metal* and *Bronze*, we were almost entirely unconcerned with the way in which we achieved what we wanted to hear, assessing only the nature of the listening experience. Any refinements to the software would be judged solely on their abilities to transform the experience in a way that felt effortless, so that the workings and process would gradually fade into the background and only the piece would remain. This may explain why *Bronze* has turned out so differently to many other generative technologies; we were never guided by a particular functional aspect, a specific process, or any reactive / interactive element. Instead, we continually refined how *Bronze* could allow us to improve the music we were making.

To compare the capabilities of a delivery format to a human performance is of course a reductive and shaky comparison, but I think the point holds. Just as physical spaces are built and rebuilt (and debated over!) should we not be looking more closely at creating more fertile and flexible digital spaces in which music can exist? In both cases, all that really exists of the music is the sound while it is playing, and the impression it has left in our head, ears and body when it stops.

The Piano Will Tell You a Lot of Things About Music Which Aren't True

Ronan O'Hora

Ronan O'Hora is Head of Keyboard Studies, Guildhall School of Music and Drama and has performed throughout the world, playing with such orchestras as the London Philharmonic, Philharmonia Orchestra and the BBC Symphony.

The piano occupies a uniquely paradoxical position amongst musical instruments inasmuch as its outwardly two dimensional character belies its capacity to transcend itself. As Alfred Brendel has observed it is the only instrument which you master by subverting its nature. The duality at the heart of the piano as demonstrated by the fact that it is both the musical instrument best suited to the most basic utilitarian musical tasks (accompanying communal singing, playing for aural tests etc) and at the same time the solo instrument which has the greatest scope of artistic expression and a repertoire equalled only by that of the orchestra.

To understand this paradox it is necessary to consider first what we know about the essence of music. Because of its universal and subliminal nature it is perhaps best described in terms of metaphor, and the Italian composer and pianist Ferruccio Busoni's description of music as sonorous air captures powerfully its all embracing and mysterious nature. In relation to this, the piano's seemingly concrete and precisely defined nature seems a direct contradiction.

So which are these areas in which the piano appears to musically misinform? Firstly, the fixed nature of the piano keys mean that what is in truth essentially a seamless continuum of musical pitch is salami-sliced into equidistant divisions with, seemingly, a void in between them. One effect of this is that, when beginning to learn the piano, the student (and those hearing the resulting efforts) is spared the sometimes excruciating sounds resulting from the first stages of trying to master other instruments where one has to learn how to produce sounds of clearly defined pitch from the infinity of sonorous air in which they live. This latter process, messy as it is, is perhaps analogous to the human

journey from the gurgles, squeals and shrieks of a baby to defined and articulate speech. In contrast, the piano offers an early (false) certainty about the parameters of music which needs to be jettisoned in order to release the instrument's capacity for more mature and meaningful musical expression.

Another area where the piano can blur musical reality is in its percussive infrastructure. The fact that notes are produced by hammers hitting strings means that it is dangerously easy to think that the beginning of a note is always the most important part. In considering any non-percussive instrument (or the human voice, which the foundation of musical expression) it is a truism that a note can go wrong after it is initiated- a moment of inattention can allow a note to go out of tune or the timbre to change from beauty to ugliness. On a more elevated level, any great singer or string player will continually remind us how many times a note can be colouristically transformed and how central this is to expressive power. On the piano, conversely, it is tempting to think the die is cast once the note is struck and therefore to fail to listen to a note for its full duration, which is vital for producing a true sense of musical line.

There are other elements in the piano's makeup that, whilst they are of obvious practical benefit, can be at least suggestively unhelpful in musical terms. The absolute flatness of the keyboard can seem at odds with fact that music, like any language, relies on continuous inflection to convey its meaning. Similarly, the binary visual black and white of the keys seems limited in an art form which cries out for the greatest range of colouristic possibilities.

Having listed several important musical "defects" in the piano an obvious question is begged- why on earth have so many of the greatest composers lavished so much time and creative energy on an instrument

that does not appear to connect as naturally as others with the organic wellsprings of music? The answer lies in the transformative power of the piano, its capacity to reinvent itself through its imitative capabilities. A flute and cello can both sound beautiful but cannot sound like each other- the piano however can sound like both (and at the same time). Uniquely, the piano only really finds its true nature when it is imitating other instruments or the singing voice, reminding one of Hindemith's dictum that the only original sound in the world is the cry of a baby - all else is an amalgam of the various conscious and subconscious influences we assimilate in order to find our personal voice. The piano's vast range of register, colour, articulation and timbre (extended further more by the extra dimension added by the sustaining pedal) make it the ideal solo vehicle for the greatest range of musical expression, and the myriad possibilities available in the piano to combine different sounds suggestively allows for an inexhaustible creative challenge and inspiration to composer and performer alike.

Good Homes for Art

Richard Sennett

Richard Sennett is Founder of Theatrum Mundi, Professor of Sociology at New York University and the London School of Economics and Political Science. He writes about cities, labour, and culture, his books include *Together: The Rituals, Pleasures and Politics of Cooperation* (2012), *The Craftsmen* (2009) and *The Fall of Public Man* (1977).

In June 2012, I attended at the Barbican Centre in London a revival of *Einstein on the Beach*. This five-hour, multi-media collage of music, dance, and scene-making first appeared at New York's Brooklyn Academy of Music in 1978, setting a Wagnerian standard for modern performance art. Among its other provocations, *Einstein* encouraged people to wander in and out at will during its five hours—take a coffee or cigarette break or, today, check your mobile phone.

This invitation to the audience is a small signal of a much more sweeping idea about the experience of theatre. Today, we want to draw performer and public closer together than in the past; in particular, modern ideas of performance space seek to break the rigid, nineteenth century etiquette of a passive, silent, still spectator focused on the stage; instead modern performing stages celebrate informality. Dancers, musicians, and actors routinely do pre- and post-performance chats; again, when I was a working musician forty years ago, we never spoke to the audience during a performance, while today young musicians sometimes act like talk-show hosts onstage. Informality has a political undertow: because experience in the theatre is looser, it seems freer, and therefore more democratic.

There's an architectural side to loosening up, drawing closer the performer and the public. Informality is a quality designers seek by breaking down the boundaries between stage and street, by designing theatres which are intimately related to their surroundings in the city. I'm going to explore this informalising, melding impulse, both inside and outside the concert hall. I'll show how designers work with two issues to make relaxed homes for art; in technical jargon, achieving this goal

involves the design of porosity and of presence. I'll show how these architectural concepts apply particularly to music venues. But I want to conclude with some reasons why, even so, a good home for art should not feel like your own home.

The Temple of Art

The first thing to be said about the impulse to experience art informally is that it is nothing new. In eighteenth century theatres people chatted amongst themselves or munched on the odd chicken-drumstick during the course of a performance, they wandered *Einstein*-fashion in and out of theatres at will, yet were also deeply engaged with the drama or music performed whenever they attended to it, shouting out comments to actors or calling musicians to repeat a movement, aria, or even a particularly choice phrase. Informal meant engaged, with the audience in control.

Performing artists increasingly took back control as the nineteenth century progressed. Even in Beethoven's day efforts were made to stop audiences talking while musicians were playing. The advent of gas-light in the nineteenth century meant it became easier to darken the hall and light up the stage, and so focus audiences on the performer rather than on each other. As the size of concert halls increased, so did their impersonality; by the time of the Palais Garnier in Paris and the Ringstrasse theatres built in Vienna, these halls were truly monumental edifices in which thousands of people attended in the dark, silent and unmoving, to the art of a relative few or to just a single individual.

Changes in the status of the performer were bound up with these theatres. The performer's status rose; this was particularly true by the

1830s for musicians, who in that age of high Romanticism were more treated as seers than as servants of the public. If you believed, as Victor Hugo did, that ‘music is our window on the soul,’ then it became possible to declare, as did Franz Liszt, that ‘the concert is ... myself.’ The technical demands of music in the Romantic era helped widen the gulf between artist and public; an amateur pianist can sort of scrape his or her way through a Mozart sonata, but is defeated at the outset by the Liszt b-flat sonata: the artist inhabits a sound world you cannot. This gulf translated into theatre architecture like in the *mystische Abgrund* Wagner designed for Bayreuth; a leather hood covers the pit so that unseen and ‘mystically’ the orchestral sound floats into the hall.

For dramatists like Brecht early in the twentieth century, or choreographers like Tino Sehgal early in the twenty-first century, making performing spaces more informal is their refusal of the Romantic cult of the supreme artist; they want to take down the temple of art, and to return to the spectator his or her primacy, such as existed in the eighteenth century. For modern theatre architects, it’s not so much a matter of either-or, a question of who is in control. Rather, informality has translated into two truly vexing problems, those of designing porosity and presence.

Porosity

This word means in design making the skin of a building porous between the inside and outside; a sky-scraper with a ground-level entrance is not porous, a sky-scraper with many entries and exits on the ground is. Porosity has come to be associated also with flexibility, so that space inside and outside can be configured and reconfigured in many ways. That combination of permeable and flexible has particularly marked the modern design of performing-arts spaces.

An example comes from projects of the architect Andrew Todd, who has worked for a long time with the director Peter Brook, and who recently made an enormous performing-arts space on the docks of Marseilles. Here's a prototype of a new, simple structure, made entirely of sheets of high-tech plywood, meant for dance, music, or theatre, flexible and porous in character, since the panels can easily be re-configured inside and outside and allow people to move around free before, during, and after a performance. One virtue of this theatre is that you can dismantle the panels, load them on a flat-bed truck, and take the theatre anywhere. Florian Beigel's Half Moon Theatre in Mile End Road in London is a fixed structure similarly seeking to create a porous relation between the street and the stage.

When the doors are open in structures like these two, musical performance radically changes its character for those listening outside; reverberation return – the reflection from walls of sound coming back to the listeners – diminishes, and the music heard outside begins to mix with ambient sounds in the environment. If you are a composer like Brian Eno, who works with ambiance expressively, that's fine, but would you like to listen to Schubert's *Winterreise* mixed in with honking autos or, more kindly, accompanied by birds singing at dusk? Perhaps indeed you would; my own most intense experience of this song cycle occurred lying on the grass outside a rehearsal studio with its doors open, looking up at the stars while the music floated out into the night. In any event, this is the kind of question that informal architecture poses to listening.

There are ways of creating a sense of visual porosity even while hewing to the theatre as an acoustically sealed space. A brilliant example is Eric Parry's new music hall made in Wells. Parry is perhaps best-known as the architect who has remade the St. Martins-in-the-Fields complex in London. In Wells, by sinking the stage below grade and surrounding

the hall with windows at grade level, Parry seeks to make the listener aware of the outside even when insulated from its sounds.

The tie between inside and outside that modern design seeks is an urbanistic as well as architectural matter, which means the role a building plays in its surroundings. The Barbican Centre in London exemplifies ground-zero in this regard, a perfect example of how not to make a good modern home for art in the city. Its concert halls are buried deep inside a housing complex that in turn shuns any embrace of the surrounding city; these are dungeons for art. By contrast, the terracing surrounding the South Bank Centre in London, a renewal project of many hands, now embraces the outside, and promotes informal lounging about, eating, skate-boarding, shopping for books, and the like, even though the South Bank architect is of the same concrete-brutalist sort as the Barbican.

An exemplary American example of drawing in the public is the renovation done by Elizabeth Diller of Alice Tully Hall, the chamber music venue for the Lincoln Centre in New York. The glasswork here is particularly impressive in dissolving the divide between inside and outside, even though Tully Hall itself remains an artificially-lit closed chamber; a particularly nice touch is the 'proug' on the street which creates an outdoor sitting space looking in.

'Porosity' has become a visual benchmark for success in designing cultural centres; free-flow seems to be a card inviting the public to hang out on a Sunday afternoon at these places. Sponsors have hoped, moreover, that informal space will draw new audiences to artistic events within. Even in a rarefied venue like Tully Hall, devoted to classical chamber music, this can in fact happen, as when a young man encrusted with nose, lip, and ear studs told me at an evening devoted to songs of Duparc and Faure that he was 'checking out' what was on offer. But

the design of 'presence' for a performing arts space works against such hopes; it involves technical issues which work against porosity.

The Design of Presence

'Presence' means feeling engaged right here, right now; in the theatre it can feel something like sitting expectantly on the edge of your seat; 'right here, right now' is the sensation philosophers name 'immanence.' In music, the technological revolution of our times seems to take away that urgent immediacy.

I've about two thousand CDs downloaded on my Apple iTunes; this music is instantly available to me whenever I want to listen, which I do intently on airplanes, but casually when doing the dishes or reading the newspapers. To the critic Walter Benjamin, the modern 'age of mechanical reproduction' threatens to diminish the gripping power – what he called the 'aura' – of art, so that music in particular is reduced to mere ambient background, Mozart becoming like sonic wall-paper.

What does live performance do for us that Apple iTunes cannot? What is presence about in a live performance? One element is contrary to the ethic of relaxed informality. Anxiety rules many if not most performers back-stage before a performance: will he or she suffer a memory lapse? An equal, if more subterranean, unease pervades the audience: will someone suffer a heart attack, or just as bad, will a mobile phone go off? Paradoxically, tensions of these sorts contribute to the sense of occasion, of presence, on both sides of the footlights. Uncertainty plays a positive role in making performance come alive – which is why many musicians prefer to make live recordings, even though they could achieve more surgically-precise results in the recording studio.

For the designer, though, presence involves calculating certainties in the theatre. We've seen the problem of sound rebound appear in Andrew Todd's design for a knock-down theatre. More technically, in one aspect this involves the 'initial time-delay gap,' a phenomenon first studied by the mid-twentieth century acoustician Leo Beranek. This is the gap between the initial arrival of sound to a listener's ears and its first reflections from the other surfaces in a room. The gap is good, since it provides us the sense of being enveloped stereophonically by sound, as one acoustician puts it by feeling 'inside' the sound rather than outside 'observing it through a window.'

How long should this gap be? In great nineteenth century venues like Boston's Symphony hall, it was more than 2.2 seconds; in a small venue like King's Place in London, it can be reduced to under 1.5 seconds. New materials in the walls, ceiling, and floors today help acoustic designers like Paul Gillieron manipulate the 'initial time-delay gap;' others who remade the New York State theatre in 1999 provided compensating resonance by hidden electronic means, a much-debated 'wired live' technique.

The point here is that we are designing presence in ways which are flexible yet anything but informal. Artifice provides the sensation of immediacy; calculation produces presence. Once his or her nerves are conquered, I'd say a great singer is as much the designer of presence, of the gripping moment, as is the acoustician. In theatre design, moreover, we are trying to manipulate phenomena like the initial time-delay gap to unify time and space in the hall; you feel in your ears more fully what you see onstage. With the result that the players loom larger in our experience, as close to us sonically as visually.

Seeing clearly is the other way architects seek to design presence. Rather than perforating a membrane, as in porous design, the goal here is to make all visual obstacles between disappear, to remove any hint of a membrane or visual filter. As with acoustics, the designer needs to cope with the propensities of the spectator's body, notably its cone of vision. Human eyes can focus on objects as coherent ensembles within a 60-degree cone but stages permit people to use only the upper half of this cone, seeing 30 degrees around. Still, were an auditorium entirely and evenly lit, the eye would take a lot of material extraneous to the stage. We can use lighting to focus the view; by seeing less fully, they can concentrate more. Yet there is a more difficult issue of visual intimacy which architects deal with in terms of sight lines.

The interior of the Royal Opera House, Covent Garden is a prime example of the traditional horse-shoe theatre; by the late seventeenth century in northern Italy this kind of theatre became nearly synonymous with opera as an art form. The social idea embedded in the horse-shoe is that the audience has as clear a sight of itself as of the stage – but only some of itself. You were meant to see rulers in a high, central royal box, aristocrats in lesser boxes ringing them; stalls in the seventeenth and eighteenth centuries were for fashion-spectators of a lesser rank; no one look up to the masses of poor people in the amphitheatres, who had poor views of the stage and no view of the kings, aristocrats, and fashionables below.

One extreme corrective to the status-bound sight-line is the Teatro Della Compagnia designed by Adolfo Natalini for Florence in 1987. The sight-lines here are all orientated forward rather than laterally, giving an equally clear view of the stage and no view of your neighbour; the few boxes to the side are the cheapest seats in the house because vision is restricted. It's in my judgement a bare, grim space of visual equality, rescued outside by its discrete insertion into the street-fabric of Florence. An opposite

extreme is theatre in the round – more usually today theatre in the square – where audiences sit on three or four sides and players either fill in the centre space or complete the fourth side, as a modern adaptation of the old Elizabethan thrust stage. In this solution to the socially-exclusive sight-lines, the audience is put on an equal footing, seeing each other equally clearly, but at a price; the experience of connection is diminished, at least in musical performances.

Whereas actors and dancers can feel comfortable filling up the central space theatre, moving around constantly, musicians are stationary creatures. Thus, if you are performing dead-centre, half the audience sees you in profile, or worse, has a clear sight only of your back. If you perform at an open slide, many in the audience will have to twist their necks to see you, which is not comfortable for long periods of time; people start to twist and squirm in their seats.

Banishing social hierarchy is a good idea in general, but is visual democracy what theatre is all about? Natalini's theatre is a rigidly uniform version of equality; there's no mutual awareness. Theatre in the square is looser in form, and the audience is much more aware of one another on the same footing, yet in a musical performance the players as well as the audience pay a price for this kind of equality; the difficulties of sight-lines diminish his or her own presence.

The design of porosity and of presence show that intimacy is full of ambiguity and inconsistency – this is as true onstage as it is in bed. Moreover, there's an argument to be made against drawing performer and audience too close, not a Romantic argument about the supremacy of art, but one based on the ordinary, universal experience of performing. I'll conclude by showing what it means in the design of stages.

Distance

The eighteenth century philosopher Denis Diderot was the first to argue that a certain distance between performer and public is necessary for a musician or act to do his work well. Diderot advances this view in a brief essay, *The Paradox of Acting*; he writes that the performer has to learn to manage his or her own emotions, listening to the music he or she makes and judging it, without being swept away as an audience might be. Which is perhaps just to say, performing requires self-control. But Diderot goes a step further: the musician needs to learn to relax on stage, to banish nerves; that, too, can be achieved only by stepping back from the public, forgetting that a thousand people are listening — a matter of feeling alone with oneself on stage, free from self-consciousness. These two elements, listening to oneself critically and banishing nerves, combine to create Diderot's paradox, embodied in the phrase 'expressive distance.'

It's a phrase which translates into action. People fortunate enough to hear Arthur Rubinstein play saw a man who put everything into his hands, made no facial grimaces, conveyed, as he once said to me, that 'in public I am still alone with the music; the audience is both there and far away.' Diderot's paradox. Pianists who move around a lot when they are playing, like Martha Argerich, are releasing tension; she says she does it to relax her body rather than show the audience how much she is feeling. Diderot's paradox.

For actors, the wearing of a mask is an artifice which can particularly aide in relaxing the body. The mime/dramaturge Jacques Lecoq explored how to make this happen in modern theatre by contriving a neutral mask for performers. He trained first fellow mimes and then actors like Ariane Mnouchkine to release their bodies by wearing this mask, pouring all

their energy into hand, arm, and leg movements – the actor's equivalent of Rubenstein at the piano. The formal, rigid mask enabled them to perform more expressively.

The current ethos of informality and intimacy treats such impersonal behaviour as cold. But if formality distances people, it also can join them together in rituals, which are a kind of shared performance. Think of taking Communion; anyone can do it, but they have to do it just right; the rules of the ritual have to be rigorously observed. In secular rituals, too, distance and rigor rule, as in the dressing up for a performance. Though traditional concert tuxes for men are a nightmare, with their vented armpits and strangling bow ties — still, we want to dress up in some way for the occasion; dressing up is part of the ritual of performing. Indeed, the rituals of dressing up, silence, and stillness are behaviours which link the audience to the performer, and these formalities heighten the experience of music; no one puts on a suit to listen to a CD at home, and in that ritual-less state the music is less gripping / by chance, informally.

These, then, are reasons for thinking of the theatre or concert hall as a special place in which Diderot's paradox comes to life and in which a formal ritual envelops our experience of art. The cult of informality, with its dark sister 'accessibility' – so favoured by arts administrators – may actually do damage to art. This view would argue against much of the current effort in design to make good homes for the performing arts. How could the alternative, art as ritual, translate into physical space?

One stunning traditional model haunts the modern imagination of how to create such a space: Richard Wagner's creation of a theatre at Bayreuth, a temple devoted to his own operas designed to lift the audience out of its everyday pre-occupations. Let's glance briefly at one physical move he made to create this temple to art: it is the leather-covered hood

he placed over the orchestra pit, a device he named *mystische Abgrund*, the mystical abyss. This device creates a physical, impenetrable distance between audience and orchestral performer; the orchestral sound comes from somewhere un-seeable, seeming to envelope the theatre magically. The Wagner hood was a musical equivalent of the Lecoq mask. Indeed, the hood has Lecoq-like effects on the performer. Playing underneath this hood was in my day an almost unbearably sweaty experience; still, protected from the public, we felt a certain freedom to do the arduous work Wagner demanded of us, focused on the music alone. Bayreuth also created a physical *mis-en-scene* for audiences, like its hard benches, which made people feel that they were at a demanding occasion; unlike the *Einstein* performances, there was no physical relief.

The temple of art is the traditional model, and I'm not arguing that we should return to it, either in its physical details or its mystique. I am saying that there are good reasons for thinking that the porous, informal spaces designers want to make today may miss something essential about the experience of performance. There must be a way to combine the visual virtues of porosity and the clarity of sight lines with Diderot's idea of expressive distance, combine these architecture virtues with the ritual character of musical performance. I'd like to conclude by talking about just one musical space which does in fact reconcile the visual virtues of openness and informality with the peculiar experience of making and listening to music.

This is Hans Scharoun's Philharmonie in Berlin. The sight-lines problem is brilliantly resolved so that the audience can see one another equally, yet focus on the stage. Acoustically, the hall is a marvel; without Wagnerian trickery, the sound appears to come from everywhere. Perhaps the most experimental aspect of Scharoun's design is its version of porosity; the theatre can be entered in many ways, and the building reaches tentacles,

as it were, to the outside, yet, for ease of access, a clear differentiation is made between stage and street. Like Frank Gehry's Disney Hall in Los Angeles, which is the architectural child of the Berlin Philharmonie, the specialness of an open, easily penetrable space is emphasised.

As an urbanist, I believe that informal, often messy conditions are key in bringing streets to life. As a one-time performer and now listener, I've come to appreciate that music requires more formal and hermetic space. The architectural issues touched on here, reflect a much greater problem: what kind of community do we experience in art? Perhaps, opposed to the dictum the more informal, the more mutually engaged, we need to contemplate another version of community in the performing arts: the more formal the roles of performer and spectator become, the more they are bound together.

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