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Content and Discontent

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CHAPTER ELEVEN

CONTENT AND DISCONTENT

SIMON WATERS

If Duchamp's *Fountain* (1917) teaches us anything it is surely that distinctions between the object and its context - between 'content' and 'container' - are difficult to sustain. And McLuhan, writing in 1964, flags this insight most explicitly in his celebrated formulation: 'the medium is the message'. Nevertheless much activity, particularly in the digital domain, proceeds as if this distinction were self-evident: as if content were in some way a distinct category.

Of course such categories are important to us because the activities of gathering (collecting), discriminating (sorting) and ordering (cataloguing) are fundamental cognitive processes. It is little surprise therefore that the notion of archiving has blossomed, in both scale and scope, since the advent of digital storage and recall.

The archive has come to function as one of the crucial current sites where an archivist's sense of 'content' as a benign category, and of archiving as a relatively dispassionate activity, comes into contention with a perhaps more playful or critical sense of 'archiving' as an essential and inevitable strategy of art making or broader signifying practice.

This short paper looks, from a practitioner's perspective, at the manner in which critically rethinking the relationship between content and container (or simply refusing the distinction altogether) has been, in the broadest sense, aesthetically productive, particularly in highly-technologised environments. Some of these observations are neither very new, nor very profound, but they are gathered here in order to identify certain effects which may be regarded as resulting from their combined cultural impact. In the spirit of the title I draw freely here on my previous writings and

presentations - both published (Waters, 2000a/b; 2003) and unpublished - quoting, paraphrasing and refashioning.

I think it is first worth revisiting the notions of gathering, discriminating and ordering (collecting, sorting and cataloguing) to which I referred above, not least because these 'doing' words draw our attention to a crucial, and crucially overlooked aspect of content, which is that it is not an atemporal category of objects with inherent value, but a situated, temporal and processual category determined by the contingencies of active participants.

I'm drawn here to the now unfashionable writing of Gregory Bateson (1972) in which he makes useful distinctions between data (uncontextualised input) and information (data which makes a difference). By implication this latter is data which makes a difference *to* someone or something: a term therefore integrating at some level the process of interpretation, or at least of evaluation. Bateson's notion of information as 'a difference which makes a difference' is based on a the persuasive argument that 'state change' is hardwired in human perceptual systems as 'significance': that steady-state input (visual, aural or whatever) does not constitute 'rich' data and is therefore put into abeyance in our allocation of attention. This has obvious aesthetic implications for a practitioner. 'Minimal' temporal phenomena may, for example, result in two responses: a dulling of attention, or, in some cases, a remapping of the dynamic range of that attention such that small deviations - minute state changes - are refactored as 'significant'. Composers and sound artists are aware of the crucial importance of the 'attack': the first few milliseconds of any sound event, in which the complexities and instabilities of the physical system being excited are at their most potent, and from which we unpack most of the significant identifying detail, and of the consequence that quite different instrumental sounds with their attacks removed can be surprisingly difficult to identify.

But this is a digression. My purpose here is to look at a series of categories which between them suggest at least a couple of hundred years of challenges to and problematisations of the notion of content, particularly in its manifestation as benign, universally accessible information. It is perhaps no surprise that these align historically with pressures for the construction of the modern individual above all as *efficient*, and particularly as efficiently productive and communicative.

The categories I'd like to address are: noise and resolution; overload; supplement; arbitrariness and mutability; emergence; collaboration, authorship and ownership; and silence and absence. In some way they form an interlinked sequence of concerns, all of which I have been forced to confront in my own practice, and I have occasionally drawn upon this, and the work of colleagues, students and other practitioners for illustration.

Noise in the system

Noise is now sufficiently well theorised (by e.g. Kahn, 1999; Hegarty, 2008) whether as a feature of all technologised means of dissemination: an intervention in the 'signal', or (more politically explicitly) as a channelling of informational dissent: Attali's noise as transmuted violence (1985). The aestheticisation of noise is a key trope of modernist practitioners, whether in the polemics of Marinetti and Russolo or, more prosaically, in the increasing crucial role of percussion in the modernist musical vocabulary. Some manifestations of noise art flag their historical specificity by explicit reference to the industrial, Arsenij Avraamov's utilisation of the entire Russian Black Sea fleet as 'orchestra' (cited in Kahn & Whitehead, 1993) being an extreme case in point. Others function as a form of 'heckling', enlisting the strategies of a practice to comment upon and critique it, as in John Oswald's extraordinary and often hilarious *Plunderphonics*¹ or much of Bob Ostertag's work².

Long before punk, noise and distortion formed part of the expressive vocabulary of pop music, and it is unsurprising therefore that it should have been in pop music (understood in the broadest sense) that a reaction to the smooth professional surface which digital technology allowed in both image and sound should have emerged most convincingly. This concern with the signifying possibilities of noise, dirt and distortion is given an additional discursive dimension (analogous to the spatial - to direction, or proxemics) in the digital world of high resolution, extended dynamic range and enhanced spectral clarity, by the introduction of a continuum of **resolution** from distorted to clear reproduction, from deliberately compressed or reduced dynamic or spectral range to 'professional' polish. As an expressive device this continuum has been well used by artists who emerged from the Bristol club scene in the early 1990s, notably Tricky and Portishead, and was rapidly adopted by practitioners in electroacoustic music around the same time.

This continuum is articulated partly through the collision of digital ‘hi-tech’ technologies with resolutely ‘lo-tech’ solutions to musical problems, and with the profusion of (often simultaneous) formats. Many artists adopt ‘lo-tech’ approaches as part of an explicit political agenda: avoiding implication in ‘corporate’ music making by utilising turntables, garage electronics and cheaply available (often deliberately archaic) domestic music technology. Such issues, along with a pragmatic economic sense, inform the use of turntables as performance devices in the urban subculture of the US in the 1980s, and their use by experimental musicians (Christian Marclay, Philip Jeck³) intent on drawing attention to the medium of the recording. A typical electroacoustic work from the 1990s, Ed Kelly and Nick Melia’s *Block Groove*⁴ uses shellac, vinyl and digital recordings and the interventions, treatments and ‘degradations’ characteristic of all three, to construct a piece in which there is play between an ‘acousmatic’ sensibility, the performed interventions, and intrusions from the material support of the recording which frequently emerge as ‘content’. This might be interpreted here as a deliberate McLuhanesque signalling of the mode of representation, of the means of encoding, as inseparable from ‘what is represented’. New York composer Jonathan Mitchell’s *Vinyl*⁵ and Californian Matt Ingalls’s *(f)Ear*⁶ are other explorations of similar territory. In mainstream activity one need look no further than Madonna, whose video for *Don’t Tell Me* (2000) foregrounds technologies of representation by featuring the singer astride a bucking bronco in an image, initially ‘clear’ - and read as ‘real’, which becomes striated by the horizontal transmission lines of NTSC encoding as we zoom towards it. In as further ‘nesting’ of the modes of representation we then pan out to reveal that all of the image thus far has been reproduced on a huge multiple screen in the desert, and that ‘reality’, as we knew all along, has even greater resolution.

The sampling paradigm is never far away here - the assumption that all ‘content’ is mutable - and it is significant that although digital technology afforded the potent instance of a recording device *designed* to function as a performing tool, the archivist’s fascination with gathering, discriminating and ordering, and the practitioner’s with recontextualising and refashioning, are as evident in the ‘beat mining’ and ‘crate digging’ for rare vinyl, as in instant online downloads. Debord’s *détournement*⁷ - subversion through appropriation - is figured as clearly in early Rap and Hip-Hop as in the work of John Oswald.

Overload: The ‘rate of information’ problem

A paper by German communications theorist Norbert Bolz, ‘The Deluge of Sense’ (1994) flags sensory overload as a characteristic of ‘modern’ life, drawing attention to the ‘inhuman velocity’ of the transmission of information. Bolz is adamant that:

the flood of information does not imply knowledge. Mass communication does not provide orientation. *The deluge of sense does not make sense*. On the contrary: the exposure to stimuli of information overload is strongest and most fascinating if the recipient is not able to make use of it. (Bolz, 1994: 1)

One might add that the density and texture of that information may be as significant as its speed, and that a concern with rapid ‘channel-switching’, perpetually exposing the cognitive system to state-changes hard-wired to provoke response has become one of the most pervasive aesthetic strategies of the late-twentieth and early twenty-first centuries.

‘Glitch’ and ‘flicker’ have become genres in themselves, playing on the limits of perceptual stability, foregrounding the resulting ambiguities, disjunctures and instabilities. A concern with ‘content’ *per se* is replaced by a concern for perceptual ‘effect’, the work of Liam Wells⁸ being a case in point.

This flagging of the medium of delivery or storage as equal in significance to any putative content is in itself a form of noise. As a dystopian, rupturing mechanism it can sometimes (as with reduced, minimal input, as remarked above) provoke paradoxical responses, in that the deluge of sense may afford a rescaling of sensory input, such that both affect and effect are dulled. As a composer of electroacoustic music I have often noted that ‘dramatic’ spatialisations of movement or direction of sound through multi-loudspeaker ‘diffusion’ systems serve for many audience members to impair other aspects of their critical listening and enjoyment. Rapid spatial and directional change in sound is hard-wired to ‘potential threat’, and repeated utilisation of such strategies in music may simply dull the senses.

David Liddle, speaking at the same conference as Bolz (above) notes poignantly that:

Information has become a real pain. We are saturated with it. It is not the thing that is scarce any longer. The two scarce commodities are attention

and trust ... [In future] our problem will not be the availability of information, it will be how do we choose to allocate our attention, that's the scarce resource. We only have 16-18 hours a day in which to do anything and allocating our attention is hard. The basis for allocating our attention in my view will be trust, and by trust I don't mean as to whether or not information is accurate, I mean as to whether or not information is relevant or worthwhile or interesting. (Liddle, 1994: 4)

Liddle continues by advancing a compelling argument for the importance of sound in the establishment of 'attention' and 'trust'. Our capacity to selectively 'stream' attention to multiple strands of audio, and the fact that we cannot entirely mute the input, give sound a uniquely demanding quality: an omnipresence celebrated in, for example, Attali's (1985) attribution of such significance to the sonic domain.

Supplement

Even as we engage with activities which might, tolerably in some circumstances, be regarded as productive of 'content', such as playing the trumpet, we engage simultaneously and inevitably in the production of 'supplementary' activity. Of course the distinction between content and supplementarity is usually one of convention or habit, and reductive of the rich affordances of the activity. In digital systems any data stream is simultaneously data, and a potential controller.

Jonathan Impett's *Metatrumpet* (Impett, 1994) involves a series of sensors⁹ attached to a concert instrument, running through an interface to a lap-top computer. The sensors allow the harnessing of continuous streams of data (the performer's position, the angle of the instrument, the patterns of valve use) which is a by-product of the activity of playing the trumpet. This data is harnessed as input for a complex of real-time digital interventions in and developments of the instrument's sound. Every aspect of the work emerges as a result of the interaction between live performance activity and the emergent, complex system behaviour. The project is characterised by Impett's insistence that the data streamed from the sensors is a supplementary component of an *existing* musicianliness. In (Impett, 2001: 108) he describes thus the development of this model for interactive music, which he defines as 'music instantiated in real-time on the basis of local performance and environmental information: Music is understood as a dynamical complex of interacting situated embodied behaviours. These behaviours may be physical or virtual, composed or emergent, or of a time scale such that they figure as constraints or constructs. All interact in the

same space by a process of mutual modelling, redescription, and emergent restructuring?. What becomes clearly evident here is the importance of describing such dynamical systems in terms of **behaviour** rather than content.

Arbitrariness and mutability

The notion of content is marked by intentionality, and by being in some sense revisitable or repeatable in order that it might be referenced. But, as suggested above, the essence of sampling is equally of **mutability**: of the capacity to refashion relationships between elements and strands of activity in real time.

An interface conceived around access to ‘content’ would have identifiably different design criteria from one which afforded more dynamically-conceived behaviour. In a ‘content-driven’ model a physical action - the movement of a fader, perhaps - must operate according to principles of predictability (a given input producing the same effect each time), linearity (or some similar ‘scaling’) mapping the physical input to its effect, and stability (the global behaviour of the device remaining fixed). But such design principles may be hugely reductive of the potential behaviours afforded by a similar device - another fader - which is characterised by travel in which there is a dynamically-determined point at which one behaviour flips over into another, or in which there are significant breaks and deviations from linearity in the relationship between input gesture and effect. Most of all if the entire function of the device gradually remaps over time the nature of engagement afforded becomes necessarily dynamic: decisions have to be made ‘in the moment’. The work of researchers such as John Bowers (Bowers & Hellström, 2000; Bowers, 2003) on interface design and improvising machines is particularly valuable here.

Once behaviour is identified as a more appropriate concern than content, the question of the agency of that behaviour emerges. Collecting, sorting, cataloguing and searching activities are now subject to algorithmic intervention to various degrees, and as these cognitive categories are as fundamental to e.g. composing as to archiving, it is inevitable that a practitioner’s role increasingly involves devolving tasks to software ‘agents’. These may ‘behave’ in a manner entirely determined by the human agent, or they may exhibit varying degrees of independence and dynamic development. In some cases the result may be that collecting,

sorting, and cataloguing are devolved to a dynamic ‘feature-matching’ function in which the responsiveness of a computer agent to input from a performer ‘feels like’ the presence of another human agent, featuring both ‘appropriateness’ and apparent ‘arbitrariness’ in its repertoire. The work of David Plans Casal with Michael Casey’s *Soundspotter*¹⁰ real-time audio matching tools (e.g. Casal & Morelli, 2007) is, to my knowledge, the most consistently developed practitioner-driven investigation of this area of activity, calling upon Casal’s considerable and well-matched abilities as concert pianist and programmer in the development of ‘somebody’ fast, technically-able, and ‘imaginative’ with whom the human performer may improvise ‘on demand’.

The Virtual/Physical-Feedback (VPFI) flute¹¹ represents my own attempt to model and explore the relationship between the bodily and the virtual in a personally comprehensible manner: to make sense out of multiple streams of data notably with respect to ‘foundness’ or ‘unforeseenness’ in performance. Such qualities are regarded as creating particular difficulties in digitally-mediated contexts in which sustaining ‘attention’ is problematic, but ‘forgetting’ is also paradoxically difficult. The system’s embracing of the arbitrary reconnects us with Bateson, who develops his argument (Bateson, 1975) by suggesting that, if information is difference which makes a difference, the fundamental source of ‘the new’ is therefore randomness or arbitrariness.

The current VPFI flute system involves acoustic feedback¹², feedback through DSP physical modeling, and feedback through Casey’s Soundspotter technology¹³ which, in conjunction with an evolving genetic evaluation system (Casal, 2007), contributes ‘matching’ material from the buffer in a constant and developing dialogue with the player. The proposed next stage of implementation is to extend the system to operate with sound input streamed to Soundspotter from audio searches of the web. This is not merely a technical extension. The current system extends my concern to manifest a model of sonic proxemics, the underpinning concept being that ‘sound is a form of touch’¹⁴. Self-evidently, the basic acoustic feedback operation of the system, with its immediacy of response to the slightest physical change, is regarded as mapping onto ‘intimate’ space, the DSP and ‘local’ Soundspotter activity represents Hall’s ‘social and consultative’ space, and the web-based input to Soundspotter represents ‘public or environmental’ space. Performance on the system thus affords exploration of both social and sonic aspects of musical space.

Emergence

Complex systems such as that described above can be characterized as having **emergent** properties in the sense that the resulting behaviours do not come about from the operation of a single rule or event but rather from an 'ecology' of interactions between all of the elements in a given environment, and frequently, that environment itself. Composer Agostino Di Scipio is keen to stress what he calls the bio-ecological principles involved in a series of works which he calls *Audible Ecosystemics*, in particular energy exchange, structural closure, organisational openness and structural coupling of system and environment. The works utilise feature extraction within a feedback system consisting of a conjunction of microphones, loudspeakers, computers and rooms, in which feature extraction generates low rate control signals which drive gradual interventions in the sound material. In addition the computer cross-compares microphone input signal and system output, generating difference signals which are also fed back into the system as controls, so the system can be said to develop a sense of its own history - an evolutionary perspective. Di Scipio avoids using the term 'interactive', preferring to describe 'dynamical interdependencies among system components' (Di Scipio, 2003)

Transposed into the social and political domain of the interpretation or reading of a work the term emergent has been appropriated as indicating a conscious utilisation of the changing boundaries between the subject (listener, interpreter) and the maker (artist, composer), in which the former interact with what the latter has made, such that the work can be said to emerge in its 'use', rather than having been designed in its entirety by the artist and then 'presented'. This too might be regarded as a principle enhanced by the mechanisms (technological and social) associated with digital technologies, and a significant challenge to unproblematised notions of content.

Collaboration, authorship and ownership

The notion of content is irrevocably historically intertwined with notions of authorship, ownership and copyright. Authority has been conferred as the result of filtering processes (such as editorship in publishing) which afford 'trust' on the part of those who buy into that content. But digitally-mediated processes for amassing and distributing invite both automated and collaborative contributions and interventions which are far less

‘accountable’, and this very anonymity has become an important factor in the behaviour of many current practitioners. This increased tendency toward collaborative or collective working may result from the fact that, at least in the (historically) early stages of the forms of work we are considering, artists tended - often out of necessity - to work together with technicians and with programmers, as well as from the fact that the networking possibilities of the physical world are now multiplied so dramatically by networking in the digital domain. Within such collaborative enterprise, the notion of authorship is no longer a necessary condition of a work’s emergence, although, as media theorist Andreas Broeckmann has pointed out, ‘we should not underestimate the degree to which envy, fame, sex, money and power still play their roles’ (Broeckmann, 1996). Some of the collaboration undoubtedly results from the degree of hybridisation between previously separate disciplines or areas of expertise which is encouraged by the increasingly similar interfaces used for manipulation of text, image, sound etc. Some I would ascribe to the physical isolation of screen-based working practices, and can be regarded as a response to that physical isolation: a critique of the inadequacy of the interface between digital devices and analogue human beings which has led to a compensatory re-socialising of the process of making. Finally, and most obviously, the connectivity which results from current networks facilitates and even encourages the likelihood that collaborative activity might result from input at geographically disparate locations. Currently such distributed activity is most successful in situations where temporal synchronisation is not critical: non time-based work or ‘ambient’ musical activity, and although technically surmountable, the problems associated with dispersed real-time synchronised activity make it most evident in contexts where there is significant institutional support¹⁵.

As I have written elsewhere (Waters, 2000a: 76), the sampler elegantly utilises two of the fundamental characteristics of digital systems: massive non-linear data storage, and the capacity to address that stored data at any point instantly. In doing so it effectively (and by design) blurs the distinction between ‘creative’ and ‘disseminative’ technologies, and therefore the distinction between composer and listener. Affording ‘users’ the capacity to reformulate and refashion material may constitute the most significant challenge to a notion of content. It is significant that even the most seemingly institutionalised practices of archiving and ‘curatorship’ are replicated in informal social space (e.g. by record collectors, train spotters, DJs etc.) and are increasingly fascinating as aesthetic strategy, Christian Boltanski’s work - particularly that addressing notions of

memory and forgetting - being illustrative here¹⁶. The prevalence of 'digital repositories' such as that associated with the Ars Electronica Center in Linz¹⁷ illustrates a delicious irony in that the fluidity and transience which characterise many aspects of digital culture (websites and their addresses, for example - especially illegal download sites - or online multi-site performances) are counterbalanced by immense social and economic pressures to fixity and permanence. Perhaps, in a more critical exploration of the play between these two counterbalancing tendencies, a digital equivalent of the sort of filter system which operated to limit the survival of pre-digital aesthetic production (the cost of publishing and printing books, for example) will emerge as a factor in systems for storage and diffusion.

Silence

A final potent challenge to content comes from the antithesis of noise and overload: **absence** and **silence**. The electroacoustic compositions of Nick Melia¹⁸, for example, operate at the extremes of the perception threshold in both frequency and amplitude. By using primarily extremely high or extremely low frequencies, and sounds which are replayed at or just above the ambient noise level of a particular performance space, the composer inhibits ascription on the part of the listener, approaching a condition in which there is a resistance to or deferral of interpretation. Audience members report carrying 'ghost' frequencies out of the concert hall which sustain 'prosthethically' in the body for many minutes. Another young composer, Stef Edwards¹⁹, who espouses an interest in 'programming for unexpectedness' (to himself) and in 'making a system sufficiently complex that one can't know what will happen' - concerns which link him to the discussion earlier - utilises 'absence' in his project *Radio Pieces*. In this work listeners are encouraged to phone into a radio station while keeping their radios, tuned to the same station, as near to the telephone as possible. The resulting acoustic feedback from the open phone-lines, mixed and balanced by the composer at the radio station as it happens, animates this 'central' space with the influence of the distributed, external spaces occupied by the listeners, providing the 'silent' core with 'content' to broadcast.²⁰ The social elements, distributedness and emergence, are as significant here as the sonic components. The ecosystem is both sonic and social.

Work and working

The issues listed impinge on aesthetic production not least because a significant factor in any process of aesthetic development is the existence of (one's own) previous work. Beyond the obvious notion of perfectibility - that in each work at some level one hopes to supplant and improve upon the perceived inadequacies of the previous attempt - there is the more mundane fact that each work generates a large proportion of unused material at various stages of development. Within my own work this backlog of unresolved compositional problems has always been reinvested in the subsequent project to some degree, with two inevitable consequences: The first is that the 'status' of material becomes extraordinarily fluid: what might have been a relatively complete musical 'statement' can reappear as a sample source or control strategy for improvisatory inclusion in another work: distinctions between 'source material', 'transformations', and 'completed sections' are contingent only on a particular instance of use. The second is that a degree of continuity is established (at least for the maker) between works which usefully blurs the sometimes arbitrary disjunction of the completion of 'the work' from the ongoing process of 'working'. The very banality of these observations, reified each time I work, is enough to give me pause whenever the notion of 'content' arises.

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Notes

¹ <http://www.plunderphonics.com/>

² <http://bobostertag.com/>

³ Philip Jeck is best known for his *A Vinyl Requiem* (London, 1993) with Lol Sargent, a performance/installation involving projection from 2 slide- projectors and 2 movie-projectors onto a bank of 180 'Dansette' record players. Works by New York-based Marclay, whose business card apparently describes him as 'record player', are discussed in a 1998 interview at <http://www.furious.com/perfect/christianmarclay.html>

⁴ ARiADA, University of East Anglia, 1999, at <http://www.sara.uea.ac.uk/>

⁵ 1993 – at <http://www.prx.org/pieces/3481>

⁶ 1997 version for tape alone - <http://sfsound.org/matt/compositions.html>

⁷ Debord's concept of *détournement* is complex and fluid, incorporating notions of (mis)appropriation, of turning aside from something's usual function, of re-use in an unforeseen manner, of deflection, negation and of the inverse of quotation. (Debord, 1967: theses 206-210)

⁸ <http://www.liamwells.co.uk/vid/water.html>

⁹ Mercury switches, pressure, ultrasound, Hall-effect, acceleration and breath sensors are used, and pitch to MIDI devices and envelope followers also operate on the acoustic signal.

¹⁰ <http://soundspotter.org/>

¹¹ <http://musariada.mus.uea.ac.uk/~simon/performance-ecosystem/>

¹² A physical system in which the amplified signal from an ordinary acoustic concert flute is replayed through a small loudspeaker and transmission line system back into the body of the flute through a plastic tube inserted through the cork in the headjoint of the instrument.

¹³ Using MPEG7 metadata to provide rapid correlation between input signal and real-time analysis of massive buffered audio signals - live or from file.

¹⁴ Proxemics (Hall, 1966) has to do with the definition of personal 'zones' or territories that surround individuals: These are categorised as intimate space, social and consultative or 'local' space, and public or environmental space.

¹⁵ Some of the most consistent research in this area is being coordinated by Alain Renaud - <http://www.alainrenaud.net/> and is documented in e.g. Renaud, Carôt and Rebelo, 2007

¹⁶ Boltanski's engagement with archiving is best approached via *La Vie Impossible* (2001) and *Les archives de C.B.* (1965-88, 1989), referenced at http://www.centrepompidou.fr/education/ressources/ENS-Boltanski_en/ENS-Boltanski_en.htm, and is discussed in van Alphen (2008)

¹⁷ <http://www.aec.at/>

¹⁸ <http://www.sara.uea.ac.uk/>

¹⁹ <http://www.sara.uea.ac.uk/>

²⁰ *Radio Pieces* was first broadcast in June 2002 by Resonance FM, a limited coverage London-based station.



PERFORMING TECHNOLOGY

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Insights from the Two Thousand + NINE Symposium

Edited by
Franziska Schroeder

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User Content and the New Digital Media:
Insights from the Two Thousand + NINE
Symposium

Edited by

Franziska Schroeder

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P U B L I S H I N G

Performing Technology: User Content and the New Digital Media:
Insights from the Two Thousand + NINE Symposium,
Edited by Franziska Schroeder

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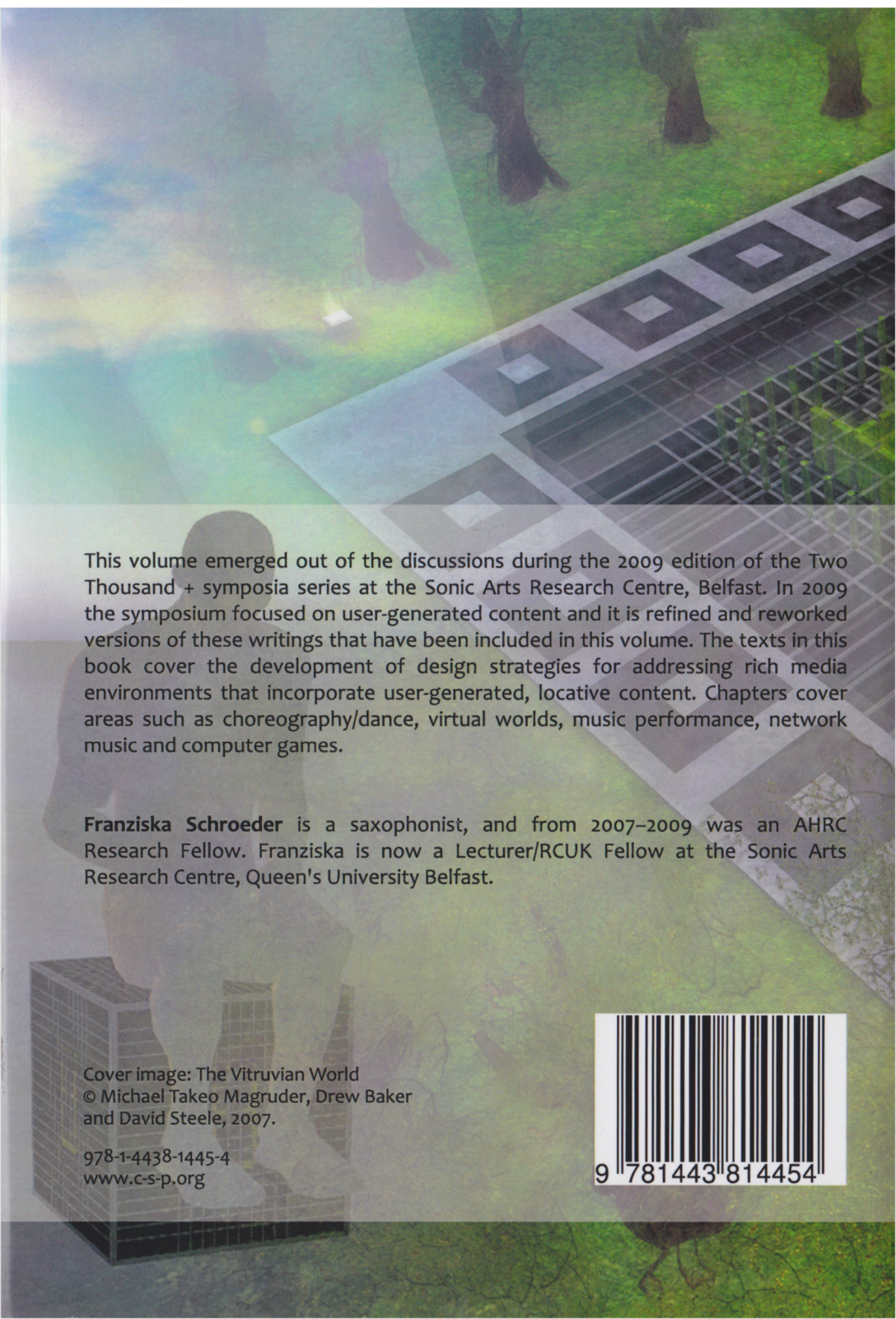
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This volume emerged out of the discussions during the 2009 edition of the Two Thousand + symposia series at the Sonic Arts Research Centre, Belfast. In 2009 the symposium focused on user-generated content and it is refined and reworked versions of these writings that have been included in this volume. The texts in this book cover the development of design strategies for addressing rich media environments that incorporate user-generated, locative content. Chapters cover areas such as choreography/dance, virtual worlds, music performance, network music and computer games.

Franziska Schroeder is a saxophonist, and from 2007–2009 was an AHRC Research Fellow. Franziska is now a Lecturer/RCUK Fellow at the Sonic Arts Research Centre, Queen's University Belfast.

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