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DIGITAL TECHNOLOGIES, VISUAL RESEARCH AND THE NON-FICTION IMAGE

Roderick Coover with Pat Badani, Flavia Caviezel, Mark Marino, Nitin Sawhney and William Uricchio

Midway through a conversation which is the centerpiece of this chapter, Flavia Caviezel, whose multimedia project *Check on Arrival – Borderland Airport* takes users into the in-between spaces of airport security checkpoints, describes the use of interactive tools such as hyperlinks and keywords as *a superior form of editing*. Take it more broadly – both literally and metaphorically. Practices and logics of ordering and sequencing that have long been central to work done by film editors infuse visual research in research, production/post-production and reception, and they do so across programmes and disciplines.

That the film editor's job has always been metaphorically hypertextual is a good place to begin a chapter about the impact of digital technologies on visual research and documentary production. Once upon a time, the film editor who cut film at a Moviola or flatbed searched among hanging strands and labelled cores of clips and sequences, mixing, taping, gluing, and marking-up films with her white pencils and sharpies. She might have imagined countless possible versions, voices, and angles before arriving at a final, linear (single-channel) print. Similarly, the videotape editor would speed and jig through tapes, more often than not stacked in piles on shelves around the edit station, with its decks, mixers, controllers, text generators, scripts, logs, and log notes. Maurice Halbwachs (1992) famously describes unshared memories as being as illusive as dreams – that memories gain meaning, value and endurance by sharing them. Much the same is true for the experience had by the film editor, whose countless imagined alternative versions vanish with the release of the answer print because they had no shared expression.

There are many practical ways that digital technologies offer *a superior form of editing*. Programmes make materials simultaneously accessible so that editors can collate clips into many differing bins, build multiple sequences and

compare versions. The editor moves easily between visual, audio and effects work, and between poetic and rhetorical modes or logics. She can readily undo, redo and juxtapose differing versions of a project. Materials can be input from many sources and output in many formats such as those for tape, disc, web, etc.

More significantly, layering and compositing found in editing and effects programmes have altered cinematic premises about the frame, continuity and montage; they have expanded cinematic rhetoric and poetics, perhaps defining an increasingly hybrid language that fuses writing and images (Coover, 2011a, 2011b; Manovich, 2002, 2006). The attention to mise-en-scene given by framing and the qualities of time provided by continuity are not dialectically opposed to montage as they were considered to be in traditional filmmaking. Layering and compositing allows for, among other things, co-existence: the uncut image can share screen-space with the edited one; the motion image may share space with the still; the framed detail may be juxtaposed with a panoramic long shot. However, most significant for those participating in this chapter's conversation may be the ways that digital technologies have altered fundamental theories about how documentary images work and how to work with them.

The first important way that digital technologies have transformed visual research projects is organizational. In single-channel, time-based work, a shot plays in time and when it ends, the next shot plays; time is the primary structuring force. Interactive and non-linear works use diverse structures, such as spatial ones. A time-based object (a clip, sequence, etc.) may have links (paths, routes, threads) to other time-based objects; these may even be mapped through a programme's interface, as is the case with hypertext writing programmes such as Eastgate Storyspace® and interactive DVD programmes like DVD Studio Pro®. Similarly, such objects and their icons may be spatially arranged together on a webpage. Alternatively, organizational models may be designed with data sets in which materials are accessed by keywords or by other connections, such as randomized ones.

Furthermore, practices of editing occur across once distinct practices. Video-editing tools are writing tools alongside word processing programmes. Not only are researchers and makers combining ways of editing images, text, photographs, sounds, and so forth, they are also increasingly producing works in many differing formats; a single project may result in a combination of films, websites, essays, books, performances, etc. While digital technologies may invite an integration of diverse kinds of writing and audio-visual media, they also allow for varied and multiple dissemination. This allows for the inclusion of diverse perspectives and expressive modes; while some things are better said directly in an essay, others may be better said, for example, through first-person accounts, motion images, music, or even dance or poetry. Further, positions offered using one approach can sit next to different or even contradictory positions arrived at via another approach *without needing to be reconciled or mediated in the same fashion.*

This integration of practices is facilitated by the fact that editing tools are increasing common and easy to use; many programmes are even designed to look alike or work alike, particularly programmes produced by a single company (for example, Microsoft Office or Adobe Suite programmes). Sharing tools among differing practices is challenging disciplinary concepts and methods (Bartscherer and Coover, 2011) and provoking exciting discussions about where disciplinary approaches may merge and where borders between disciplinary practices are becoming redefined.

Los Angeles seems to be a basin of crises, whether being destroyed in film or undergoing a fire, earthquake, or mudslide on the nightly news. Its history is also marked by social unrest: the Watts Riots and Chicano Moratorium in the 1960s and 1970s and the LA Rebellion in the 1990s. Covering almost 500 square miles of land, the city brings together 70-some smaller cities and many ethnic and social enclaves. Anna Deveare Smith may have discovered the perfect narrative structure for depicting such a city in her one-woman-performing-many-voices show, 'Twilight: Los Angeles'.

The LA Flood Project builds on her model by presenting a collection of oral histories and fictional testimonies through the one medium that connects more in the city than cars or personal computers: mobile phones. By connecting these histories to GIS data, the project seeks to add a layer of metadata to the city through which travellers can encounter voices of the city in crisis while living in the city in between the exclamation points of most recent and forthcoming traumatic events. Together with an emergency simulation of a flood, the oral histories and fictional narrative triangulate to help visitors discover their own place in this landscape of crises. (see http://laflood.citychaos.com/)

Figure 11.1   *The LA Flood Project*, Mark Marino

The participants in this conversation also address how computer technologies are facilitating collaboration. In their projects, collaboration occurs by working with teams or inviting subject contributions in project development and production, and by working with others to exhibit, screen, stream or perform works. In a couple of works cited, collaboration also includes inviting user feedback or user-generated versions. Interactive documentary and visual research projects can readily incorporate differing voices, perspectives and arguments. As with conversations, linear arguments and narratives may co-exist with alternative and diverse forms of expression. Collaboration propels theoretical and practical considerations. While the researcher may still advance focused arguments, she may not be in control of all the elements that make up a work or of all the ways it is used. Of course, collaborations were frequently necessary in managing the apparatus of cinema production and, in ethnographic projects, in creating the conditions that might allow for filmmaking. Due to the cross-disciplinary and multimedia conditions of contemporary documentary arts, the range of perspectives that may be incorporated has been growing wider. For example, Niten Sawhney draws together videos recorded with youths on the Gaza-Israel border, provoking expressions on the ground and producing responses across international borders, while Pat Badani records cafe-goers speaking in several languages.

The collaborative nature of these contemporary working methods is fostering learning and exchange across fields and, in the process, creating individuals like those in this conversation who move fluidly between research, art and critical discourse. Pat Badani uses video interviews recorded in cafes in different countries to study what it means have a home in the age of global travel; these are embedded in an interactive installation project inviting user responses. Flavia Caviezel takes her camera on both sides of X-Ray machines at airport security checkpoints to examine human aspects of the security ritual. Roderick Coover's interactive cinema project examines production(s) of place in the desert American West using a navigational environment that stimulates choice-making. Mark Marino's lexia-structured L.A. Flood project takes a quasi-documentary approach to imagining the experiences that might surround a flooded city. Nitin Sawhney works with youths on the Gaza-Israel border to stimulate discourse on how physical barriers shape narratives and their attending metaphors. William Uricchio writes about multimedia technologies and works with creative teams at MIT to develop interactive cinema projects which invite user participation into documentary editing processes.

All are redefining the concept of what constitutes the non-fiction image. The approaches discussed in this chapter do not deny the value of single-channel documentary work. The approaches described in this chapter present alternative approaches to working with documentary images that may be particularly

In 2001, wanting to explore the internet as a means of bridging cultures and geographies around ideas of foreignness and migration, Pat Badani conceived a project called 'Where are you from?', a hybrid project that exists both in the web as a large interactive archive of video on demand, and in physical space as participatory installation/events in six world cities. The project explores where people come from and where they go to in search of a better life, raising questions of migration, globalization and cultural identity along with probing the fundamental question of how to define notions of 'home'. The work crosses media formats as well as borders and uses interactivity and keyword selections. It also explicitly draws attention to its own production, locations in which interviews were gathered and the recording conditions (see www.patbadani.net/where_from2.html).

Figure 11.2   'Where are you from? Stories', Pat Badani

exciting in the context of the kinds of research projects that take place in the humanities and social sciences. The projects discussed in this chapter demonstrate ways to work with video with text, sound, movement, maps, and infinite other kinds of materials and activities in the research process.

It may be particularly apt, under such conditions, that this chapter takes the form of a conversation. In a departure from expository formats that dominate critical writing, the work is open-ended and shaped by the diverse perspectives of the participants. Where conventional exposition frequently edits away divergent issues to maintain focused attention upon a primary argument, conversations may suggest multiple directions when participants propose threads not followed as well as the ones picked-up and continued. Thus, this conversation engages a set of issues in form as well as content. It

begins with the fundamental question, what it is new and different about making documentaries and other non-fiction works with digital tools?

William Uricchio: One difference from the analog tradition is *what* we have access to in terms of where our cameras can go and whose voices we can reach. New digital technologies are enabling us to reach places, people and conditions that have long been inaccessible. The ubiquity of recording and transmitting technologies – the camera equipped cell phone for example – is a game changer. It has changed not only what we can access, but who does the accessing. The great mass of the public is now potentially engaged in recording life as it unfolds, and better, crafting it into coherent form, into documentary. The digital turn has also offered more than tools: it has also led to the development of new environments such as the network. The Internet has effectively done away with the institutional filters that long stood between organizers of sounds and images and the public. The world's largest stock footage library is at our fingertips; and anyone's documentary is guaranteed distribution. This unfettered access to the public is terrific; but it also has a price that we can see when we turn the formula around: the public also has unfettered access to individuals' footage and documentaries. They can remix it, repurpose it, see it in contexts and ways that its creator never imagined – and perhaps never intended. The long reign of the author or artist as a controlling presence is under siege. The challenge can be as simple as that also afforded by DVDs and DVRs, allowing viewers to fast-forward, freeze or repeat; or as extreme as allowing deconstruction, reassembly, and radical new uses. Ideally, of course, sympathetic collaborations between author and audience will lead to productive interactions, constructive dialogue, and perhaps even new kinds of texts and audio-visual terrains.

Mark Marino: There are also different forms navigational systems for traversing collected narratives. For example, the Literatronica engine on which *A Show of Hands* is built uses a spatial metaphor of lexias. Remember how Eastgate *Storyspace®* gave you that visual map? Literatronica does that with lexias, although distances are signified by numbers, and the numbers make a difference. *The LA Flood Project* uses a more literal space-navigation system. The user travels through the map or the space to encounter the text pieces, much as they might travel through a museum. So, space is important in both, though in different ways. One is tied to the historical city; the other is tied to narrative logic.

Nitin Sawhney: For me, the mapping work is a part of the workshops we conduct with youth. It's a way to begin to perceive their neighbourhoods. Using photography, maps and interviews that lead to richer narratives they develop further in their films in the project, *Voices Beyond Walls*. Our documentary, *Tarya Warakiya (Flying Paper)*, is a parallel project, which also engages these

youth in extended work with us. The mapping for us is an intermediate part of the process, but one that is revealed in the presentation of the work in exhibits. Last summer in Jerusalem, we had two groups of kids in parallel workshops use mapping to understand each other's neighbourhoods across the dividing wall and then go on to make films that built on those narratives. The city was their canvas and mapping surely helped them develop the storyboards and scripts for their projects.

There tended to be three main zones – the city, the refugee camp and the buffer zone. One of the things we did with kids who lived there was to work with them to design a kite camera that takes aerial photography/video of their buffer space from above. The 'Kite Cam' was used as part of the documentary to provide aerial views during the kite festival, though we only managed to get some footage before it crashed. So, in a sense we tried to get participants to think about their space and buffer zone through the filmmaking process.

Coover: I get the sense that *making* the film is as important and valuable in creating connections as *showing* it. This emphasis on process and participation seems to emerge in many differing ways among documentary makers of our time. Thinking back to the kinds of exchanges offered by Jean Rouch and Edgar Morin in *Chronique d'un été* (Chronicle of a Summer, 1960), are collaborations of our time different?

Pat Badani: Well, there probably isn't a radical shift per se, but rather one that is part of the media continuum.

In terms of 'making' documentary film, Rouch and Morin's project already pioneered a new aesthetic by changing the connections made between author and subject. Their strategy was simple yet groundbreaking: they would ask non-actors to speak about their personal experiences while being filmed, an approach that turned the process of documentary making into a collaborative and participatory one. Interestingly, this was facilitated by what was then a 'new technology', namely: 16mm film, sync sound, and light hand-held cameras that allowed them to take the project to the streets and to document 'true life' in a spontaneous way. However, when I think back at some of the conversations Rouch and Morin had about their project, I remember Rouch expressing serious doubts about the possibility of recording a conversation naturally with the camera present. A similar intervention would seem less awkward today because of the way that media technology is part of our everyday lives. If Rouch and Morin had to overcome people's uneasiness in front of the camera due to the lack of familiarity with media broadcasting in 1960, today the problem is a diametrically opposite one. For me, the question is still how to document conversations naturally, but – due to expanded media being here, due to the technology – for me the question has become: What is natural?

Voices Beyond Walls, is a participatory media initiative that supports creative expression and human rights advocacy among marginalized children and youth (aged 10–25) through digital storytelling workshops, new media production, and global dissemination of their work. It was founded in 2006 to serve young Palestinians living in refugee camps in the West Bank, Gaza and East Jerusalem. The project consists of a programme of digital media training and capacity building with local community centres, collaborative digital storytelling and neighbourhood mapping workshops conducted with youth, as well as ongoing evaluation and follow-up opportunities for learning and creative media engagement. Like many of the works discussed in this chapter, Voices Beyond Walls has taken on many forms, including the 'Re-imagining Gaza' programme in the Gaza Strip and a parallel workshop in Al Aroub camp in the West Bank (see www.voicesbeyondwalls.org).

Figure 11.3   Voices beyond walls, Nitin Sawhney

The shift in process and participation that you ask about is perhaps more evident in terms of today's connections created in 'showing' the documentary material. While Rouch and Morin relied on traditional methods of distribution for showing the film 'Chronicles of a Summer', 'Where are you from?' is part of a generation of works making use of an interactive Internet-based archive of video on demand, a new type of broadcasting having as a precedent the community-based video projects of the 1970s and similar to these in terms of their intentionality, but with a major feature that separates them from their media precedents (and ultimately make them more effective, in my view). Instead of a 'one to many' form of communication as with film or video, Internet broadcasting is a platform for showing documentary material that

offers communication from 'many to many' and is furthermore openly accessible worldwide, any time, to anyone with Internet access. The question of access is huge because this feature creates unprecedented connections and new collaborations with viewers who also become to a certain degree participants and co-editors.

Flavia Caviezel: When you put your video recordings or other materials online after the recordings there is an immediacy. The exchange process with the participants is suddenly, virtually represented. I anticipated that this might be very sensitive. During our research project at Zurich Airport (2004–2006) on control procedures, we had to negotiate with the officials of the airport police and customs about the final presentation form of research results (videos, photos, statistics, texts) – our aim was to develop an interactive and collaborative online platform. But they didn't give us the permission to put the material online because it was still considered as subversive and uncontrollable. Concerning the collaboration with the controllers at the airport, we had to create an atmosphere of trust to get the permission for interviewing and observing control procedures. This took quite a long time. Our topics included not only visible unveiling but also invisible phenomena like the so-called 'profiling' and 'routing' and how these become manifest in the heads of the control agents. Furthermore, the guards' perceptions of the border area and working places were points of analysis. To approach these different phenomena it was crucial to create intimacy with the airport employees during approximately one hour of interviewing, and this was best achieved in filming only by one person. You might say that we, as researchers, performed as 'accomplices' for one hour with persons who could have completely different points of view, and after finishing we changed our roles back again to be critical outside-observers – a classical situation of research in social sciences described in the concept of 'becoming and othering'.
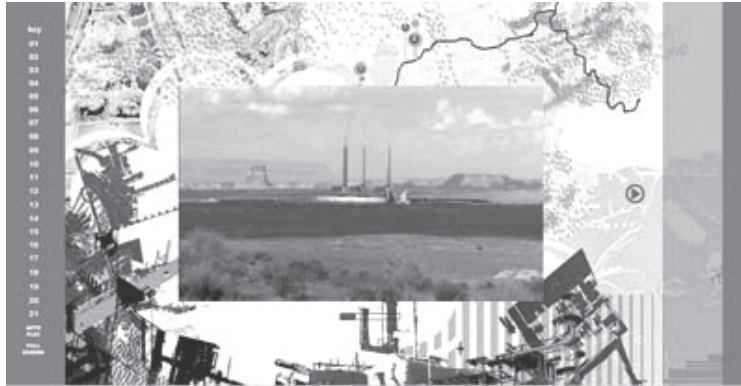
Badani: I think that both Flavia's project and mine are good examples of the kinds of different collaborations that are shaped by context. You have had to develop an extraordinary process to enter into the world of the security checkpoints that requires all sorts of collaborations that also reflect the institutional contexts, and meanwhile they had to be carried out in places where maybe you had less control over the environments; and I had to enter different communities and contexts as well for my project.

There are different levels and notions of collaboration that emerge in a variety of ways in the making of my work, for example: collaborations between researchers and institutions; collaborations with funding sources; collaborations with coffee shop owners and staff; collaborations with city park officials; with city government officials; with community centres and their staff; collaborations with about 130 individuals (total strangers in six cities and in three

languages) who came to tell me their stories in front of my camera; and lastly there is a collaborative process established with online visitors who navigate, make choices and in a way co-edit the work.

Caviezel: I would say the degree of intimacy might be different, but we wouldn't have got anything specific about unseen phenomena and mind concepts without trust and intimacy.

Another point you mentioned before is the possibility of interactive online media to allow for collaboration, for example, in getting feedback from the user. Because we couldn't put the project online and let users comment or add materials, we tried to find an appropriate interactive computer alternative. Along with representing the heterogeneous, often changing controlling processes of the airport is reflection upon knowledge representation and processes of cognition where an interrelation of authors and users become manifest.[1] So, the idea of our *interactive form* of reception is to offer a user in the exhibition situation the possibility to surf with his or her own 'dramaturgy' through the research material and therefore to create an individualized 'narrative'.

In Unknown Territories, users navigate vast, scrolling, symbol-rich landscapes evocative of the canyon lands of the Colorado River in the American Southwest. The project asks, how do we learn to picture a place, and what impact does that have on how the land is used? The symbols and icons reveal fragments of visual information, archival recordings, historical narratives, and imaginaries based on the writings of John Wesley Powell and the crew of his Colorado River Exploring Expeditions of 1869 and 1871 in one gallery and of writer Edward Abbey and his compatriots in another. The environments offer something that a linear documentary cannot: choices. Viewers become users. The spatial structure allows them to navigate among primary texts. It allows them both to follow the researcher's narrative choices and to create their own connections through the paths they weave (see www.unknownterritories.org).

Figure 11.4   Unknown territories, Roderick Coover

Coover: In a way, then, such projects give agency to both the subject and the reader – connecting them not in time but in a virtual space that spans time, and a narrative structure gives way to some other kind of activity . . .

Marino: Story gives way to space the way Victor Hugo and those miserables give way to Paris. One can narrate a trip through a city, but their experience is not necessarily narrated, that is what I learned from reading the transcripts and trails of users *A Show of Hands*. Contemporary digital works might be best thinking not in lines of flight but in land and cityscapes. While we used to talk of a reader making their own stories, maybe we need to think about encounters between visitors and spaces.

William Uricchio: I think we've touched on an important aspect of computing in the capacity of digital tools to open up participation – not just in allowing an audience to see things, but also to produce things. In MIT's HyperStudio project, *Berliner sehen* (developed by Kurt Fendt and Ellen Crocker), we incorporated 18 hours of documentary footage centred around eight people. The footage was broken into about two-minute clips. Each of those clips was coded according to things the individuals talk about, neighbourhood, history, politics. Users call up the characters and themes that they are interested in learning about, and the programme might provide 24 or so randomly organized but appropriately coded thumbnails. Each thumbnail represents a two-minute clip. Click! Users can then play and explore that material – repeating the process through all 18 hours of footage if they want! – in a coherent way, based on human characters and themes. They can then drop and drag those thumbnails into a linear framework and build their own narrative or argument. Kurt Fendt and Ellen Crocker did that about 15 years ago with initial filming started in 1995 and the release of the first online version in 1997 as part of a project to explore language and. But, in fact, it's a documentary project. It was shot in a traditional way (a film crew), and its main innovation lies in the recombinatory nature of the shot assembly process and the viewer's role in exploring the material and putting the pieces together. In the decade since *Berliner sehen* first appeared, lots has changed … including the fact that most cell phones have video cameras. Most people are now potential filmmakers – not just potential editors – and with online live streaming repositories such as *Qik*, there are many new possibilities to help support a new approach to documentary. We're now developing a project in the area of collaborative documentary production (the repurposing of *Berliner sehen* is a first step), taking advantage of the camera-equipped public. We are also trying to generate an online editing tool, so that any of the people who put their footage up there can use any of this footage, and reedit it afterwards into some sort of coherence. In order to keep the process social, to keep the emphasis on a creative community, in this system, if someone uses your footage, you're notified and you can access the page where it is used and reedit it if you wish. So it becomes an intricate process

where ordinary people generate the footage and then mix and remix it in a collaborative way.

Coover: So then how do we understand also some of the limits or problems of revealing the process? Many of the projects we have been discussing partially reveal a process but not entirely, and it would seem one major cause for this is the sheer quantity of research that goes into a project that in the end is only distantly related to a work's thesis.

Badani: This is a very valid point. There is so much material related to the making of projects of this magnitude that never is shared or viewed, material that is nonetheless an intrinsic part of the work's meaning. Because so much of my work is process-oriented, I have often tried to think of solutions to this question, and I've found that there exist certain conventions for doing this that can be adapted to new media works. For example, an exhibition catalogue with an introduction and visual documentation can serve this revelatory function, and in my piece, 'Where are you from?', it was practical to create a separate page with this information enabling me to catalogue, describe and contextualize the work. I located some of my process descriptions in the 'credits', including my interview permission papers. In this way, the credits page also becomes an information space that provides the visitor with archival material with which to contextualize the work, and gain greater depth and understanding. For example, I include details of a specific recording instance in Chicago that is pretty much like how the projects were done in other world cities. However, the question remains: how much does the public need to know when you show a work, when you exhibit a work? If one is a researcher in culturally sensitive issues or making a work for other researchers, perhaps one has a stronger reason for revealing each small step of the process. But the visual artist exhibiting in visual art forums like galleries, museums, and new media festivals, may not be likely to reveal the process unless the curator is doing a process-based exhibition because, in many cases, too much information can be more distracting than helpful at the level of viewer experience. Having said that, there are new curatorial approaches that pay attention to the challenges in question due to the emergence of art projects informed by interdisciplinary practices (such as scientific research) that are an intrinsic part of the work's coherence.

Caviezel: It's probably a difference between art and social science projects, especially those in anthropology, which has a very strong tradition of examining individual research processes. To get over (self)reflecting forms which we found either lengthy, redundant or euphemizing the power relationship between authors and protagonists, we tried to include more subtle forms; the library-like organization of the research material with linking keywords allowed the user to unveil relations or interdependencies between the different topics. If, for example, you take the keyword 'forbidden', you are provided with

Zurich Airport demarcates borders in the middle of Switzerland. It is a hub for more than 17 million passengers and a terminal for about 400,000 tons of freight per year. In this constructed space, borders are crossed every day to our closest neighbouring countries, or via flight destinations such as Lagos, Tel Aviv or Beijing. In 2005, a research team spent time at the airport to look at recent tendencies in the checking of people, baggage and goods, focusing on the issues of control systems and the role and interpretation of technologically produced visualizations. Using a platform that was developed by Flavia Caviezel and Susanna Kumschick at the University of the Arts Zurich and realized in collaboration with Videocompany Zofingen and V2_Lab Rotterdam, the interactive work organizes 90 minutes of edited videos, photos and other documentation to focus on the airport as a border space, becoming a controversial stage for current changes: What is the significance of country borders in a globalized world? What are they supposed to protect, and against what? (see www.ith-z.ch/forschung/check+it).

Figure 11.5   Check on arrival – Borderland Airport, Flavia Caviezel

a spectrum of what doesn't pass the controlling devices at the border – from dangerous goods to microorganisms to migrants. All are treated in a similar way in the controlling personal's understanding. To put those materials under the same keyword and show them side by side may be seen as our reflection on the political impact of control. I would describe these linkages as *a superior form of editing*. Another example is the keyword 'stop', which triggers reflections about the limits of research in a border area.

Coover: Yes, that's a huge part of what happens in anthropology that is concerned both with the process of gathering information and the canons and discourse to which it speaks. On the other hand, practitioners of interpretive

anthropology, and visual anthropology in particular, frequently note the dilemma of what to do with all those field notes and other data that may be tangentially related to the primary question or final work. This is one place where the impact of other arts and methods, including many made newly accessible through new media such as panorama and visual kinds of indexing, are shifting the discussion. These tools mean that materials can be organized in more than one way and often presented in differing formats, as was the case of *Unknown Territories*, which was presented as a multi-monitor exhibition, a web-work, a film, a set of photographs and a series of essays. But then, even with all those options, only a small portion of the research is likely to be used or even relevant.

Marino: When I was writing *A Show Of Hands*, I became very conscious of the number of lexias since the system relayed the percentage read – answering an age-old (maybe a tiny age) complaint about hypertexts that you never know where the bottom is and so often feel like you are free-falling. If I went over 100 lexias, each page read would make less than 1 per cent of impact. Talk about a bottomless pit for contemporary reading on the net. Both the oral history and narrative components of *LA Flood* take on a different philosophy; the content can be nearly infinite. The number of histories are unlimited, or relatively unlimited, because the pine tree is in the pinecone, or pine nut, if you are in Providence, and the mountain is in the pine tree.

Coover: That sounds like a moment in Italo Calvino's *Invisible Cities* (1974) when Marco Polo is talking to Khan about the emperor's chessboard and in the knot on one square begins to read a history of the empire …

Marino: Yes, and the chessboard is, of course, so fitting there too, because Calvino was so mathematical about his constraints. Have you ever seen the constraints for *If On A Winter's Night A Traveler*? [1981] It's like lambda calculus. It would send Lacan into the asylum. I think that's true of many of us, when we stop tracing plot lines, we turn to other rules to create the thingness – the properties that will hold it all together … the accent or shape of jaw that distinguishes a Hatfield from a McCoy. For my work, it is a characteristic of the prose that emerges in each work like an identifier that indicated the piece belongs to the whole …

Uricchio: One of the big challenges comes in the area of coherence. When we have linear narrative or an argument in an academic journal, coherence is guaranteed, or, at least, promised. Coherence is not necessarily lost when we give the user more freedom, however, with that freedom comes a greater chance of incoherence or something else, a meta-coherence. One of the interesting things to emerge here is that this is driving scholars and artists to find other strategies for coherence. We used to rely upon narrative as a primary structuring form. Now we have cartography, which enables a kind of coherence without necessarily linking the whole video to the story. That's really quite interesting to me.

Documenting the many facets of how the Fall of the Wall has impacted eight personal life stories in Berlin is the focus of *Berliner sehen*, an interactive documentary expressively created for a multi-linear viewing experience. Eighteen hours of video-taped conversations between residents of two neighbourhoods in the former eastern and western part of the city were segmented into short clips of about 90 seconds in length and tagged with thematic and geolocation data, combined with six hours of historical documentary footage and hundreds of public documents from public and personal archives to form a network of dynamically connected video clips, photos, and texts. Users access *Berliner sehen* through an interface that presents them with a randomized selection of materials based on the selected person and/or theme/s. Documents can be viewed by pulling them into the centre of the user interface, simultaneously also highlighting related themes and, thus allowing further exploration in different yet connected thematic or character-based directions. The resulting remixes represent the users' views on issues of change, hopes, and memory, a specific look at a personal life story, or a combination of several life stories. In the future, spatial and time-based representations of the materials and the user-created mini-documentaries allow for yet more perspectives on the multi-faceted issues in the aftermath of the fall of the Berlin Wall (see www.mit.edu/~fll/projects/BerlinerSehen.shtml).

Figure 11.6   Berliner sehen, Kurt Fendt and Ellen Crocker, MIT

Argument, though, is trickier. Argument is often about sequence, and meaningful sequence is less tolerant of manipulation. So with argument, we have more of a limited case. However, on the experience side of things, we are seeing greater affordances. Compelling experiences are key for many artists, offering them a way to keep viewers engaged and to encourage viewers to explore and reflect upon the work. The less artists can use narrative as a crutch to lean on, and the more navigational choice they give to their audience, the more important experience will be in binding the work into something coherent and satisfying.

Sawhney: In conflict and contested spaces like the ones we work in, the 'sense of coherence' that William mentioned plays a crucial role for youth living there to function and support resilience. It is informed both by a coherent narrative of the conflict and also their ability to retain freedom to navigate the urban spaces they inhabit. I know this is a meta response to what William was saying, but what I like to think is that in the process of the neighbourhood mapping and photo work they do, they actually link this sense of narrative and space quite well in some of their films that emerge, which is what makes their films so compelling. For the viewer/audience it's a different thing. When I show the Gaza sensory footage from our documentary work – it all seems a bit ephemeral until I locate those narratives on a map of the Gaza Strip, having them recognize the spatial context of the places we investigate visually and the contested realities of the place whether it's the war-torn city, the congested camp or the tense buffer zones. The film footage often contradicts many of the perceptions of those places and this is quite interesting for us as filmmakers. So we have to find ways to locate the film spaces for the viewers in some ways, and I think that's where an online dimension that complements the linear film may indeed be crucial.

Badani: I remember all of 10 years ago, when the first Internet-based art works emerged, it was fairly standard to find lengthy texts not only explaining to the user what to do: how to navigate through the site and what plug-ins to download; one also had to go through a lengthy description of the project written by the artist before finding gratification in experiencing the work itself (provided all the technology worked). We don't see that anymore now that web tools and web-interface is more efficient and intuitive, and now that the public-at-large is used to navigating the web. Instead there are new pressures to employ fancier tools, and to see how artists use these tools as part of the sense of game play that is also very important in the structuring of online works. It has to be said that rewarding the viewer in some way is at the core of a lot of Internet-based art works, both those that explicitly utilize these game strategies and those that discretely integrate a sense of play. In some cases, part of the pleasure is simply experiencing the 'cause/effect' phenomenon; seeing how one action might be rewarded by an interesting result. So, the user may be engrossed with the play involved in navigating and might seem to forget about content, and that's interesting as well. As an artist creating in and for this environment, I need to acknowledge this phenomenon and work with it.

Marino: However, if the narrative becomes the space, it is foolish to create long cues through that space or to require that your guest see every room. You can no longer count on people reading to the end. It seems like vanity to expect readers to find all your Easter Eggs, to want to follow the tree to the ends of all your branches. Your work is part of their multichannel,

many-tabbed, multi-tasking narrative encounters. For example, there's no reason to expect that they have closed their email, chat, or Facebook windows while they are encountering your work, any more than that they stop answering their phone when they are walking through your city (or locative media narrative). So, our job is not to be their tour guide but instead their cruise director or perhaps merely the host who invites all the guests to the party and then lets them have at.

Caviezel: Yes, though it's not so easy because you have to accept that users might miss the 'raisins' of the material you offer. In developing the interactive platform and reflecting on processes of cognition we had to let things go and didn't implement an author controlled and guided tour for users through our favourite research material.

Marino: As authors, we are used to being the ringmaster, but in this environment, we are at best selling the peanuts or raisins. We are creating our works in an overloaded ecology where they will no longer enjoy the codex luxury of monopolizing the reader's attention, which has been so well trained to watch many more than three-rings at once.

Note

1 See *Science Studies* and authors like Hans-Jörg Rheinberger or Karin Knorr-Cetina. They have described an interest of the sciences on alternative forms of knowledge presentation because of the circumstances that knowledge is constituted through experimental systems itself as well through the formats in which it is presented. This means that media-based presentation of research results and processes of cognition are interdependent. The formats are divers, knowledge is not only inscribed in language and text but also in non-textual forms.

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