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Making (with) the Korsakow System

Database Documentaries as Articulation and Assemblage

Matt Soar

Introduction

3W Doc, Djehouti, Klynt, Korsakow, Storyplanet, Zeega. These are just some of the tools, many of them free and open source, currently available for creating non-linear and/or interactive narratives for and/or on the web. Each has been used to create web-based documentaries. All claim to be easy to use, with drag-and-drop interfaces, and no programming required. This expanding range of accessible 'new media' authoring tools¹ falls into a category Manovich has termed 'media software': 'programs that are used to create and interact with media objects and environments' (2013, p. 38).

My own stake in these developments must be stated at the outset: as well as being a scholar of media and culture, an intermedia artist, designer and filmmaker, I am co-developer of one of these tools. The Korsakow System is an open-source application, originally launched in 2000 for the authoring of database narratives: primarily documentaries. For the past five years I have been intimately involved in the development of this software— everything from the user interface to the user community – alongside its original inventor, Berlin-based filmmaker Florian Thalhofer (Serrano 2012). Between us we make up two-thirds of the core development team; the other member is our long-time programmer, David Reisch.

Other indicators of rapid change, aside from new software applications and the neologisms² they engender, include:

1. The current promise of HTML5 as a viable (free, open-source) alternative to the longstanding dominance of Adobe Flash.

2. The push, among certain 'traditional' media producers, to explore alternative platforms and audiences, for example, the National Film Board of Canada's (NFB) highly successful interactive film unit and the production of online content by ARTE (the European television network).
3. New sources of funding and exhibition (IDFA DocLab; Tribeca Film Institute's New Media Fund).
4. The establishment of faster computer networks for distributing and delivering higher quality video content, at least in regions and countries with relatively advanced economies and IT infrastructures.
5. The wide availability of more powerful, easy-to-use computers for creating and viewing work, and more reliable handling of complex media content.
6. The emergence and rapid expansion of an online 'read-write' culture (Lessig 2008).
7. The rising costs of 'traditional' or 'cinematic' (Burdick et al. 2012) documentary filmmaking versus the relatively low cost of documentary projects conceived for the web.³ At least one filmmaker has told me that she began making web docs not because of the attractiveness of the medium but because she couldn't find the funding to pursue her 'regular' cinematic practice.

One additional change, as we continually struggle to find the most productive terms and definitions to describe these changes, is that we're witnessing the emergence of a range of new practices and media forms. And, as media historians often remind us, it will only be the surviving platforms, modes and genres that serve to define, in retrospect, this sustained moment of radical uncertainty, as we still find ourselves, after a full decade of experimentation, 'at the pressure points between theory and practice, storytelling and database structures, the language of cinema and video and the interactive potential of new digital media' (Kinder 2003a, p. 96). (I'll say more in a moment about the fact that, given the radical instability of web-based media productions, 'survival' in this context refers both to the tools and the works created with them.)

As the number of software tools (and the media works produced with them) continue to expand rapidly, it is important to identify the kinds of films each one produces. As Kat Cizek, the NFB's filmmaker in residence, put it recently, 'Theatrical documentary film tells a specific kind of story really well, which is usually a major, life-changing event, often in one character's life, like an incredible cinematic journey. But

those aren't the only documentary stories to be told. I think what the web offers is an opportunity to examine and understand very small, everyday details of our lives' (in Hutter 2012; see also Luers, 2013; Miles 2013). This is the kind of storytelling Florian Thalhofer has been pursuing in his own filmmaking practice since his production *Kleine Welt* [Small World] in 1997 – three years before he released *Korsakow* (Uricchio 2012; see also Thalhofer and Soar 2010 for further details).

Inevitably, then, this chapter is coloured by: my experiences teaching *Korsakow* in my classes at Concordia University, and via invited workshops in other departments, at colleges, universities and even the local Apple Store; using the software (my database diary film *Ceci N'est Pas Embres* (2012)); and promotions at venues such as Visible Evidence (São Paulo, Los Angeles, New York), the Open Video Conference (New York, 2011) and HASTAC (York University, Toronto, 2013). My goal will not be to compare *Korsakow* to the other tools I've mentioned, rather, I will attempt a candid account of *Korsakow* itself including: a critical reflection on this emergent medium; the experience of designing and refining the software and making films with it; lessons learned from the community of makers using *Korsakow*; a representative sampling of the films produced using *Korsakow*; and an attempt to theorise the conceptual process of creating a database documentary.

Thalhofer and I: Hardware and software histories

Recently I had a long telephone conversation with a filmmaker and educator who wanted to discuss *Korsakow*'s potential as a storytelling tool for his students at an Aboriginal high school in Western Canada. It became clear during our conversation that this person was technically adept, so it didn't surprise me that, as he came to understand what it does and how it works, he said something like: 'Why would I use *Korsakow* when I can program something like that myself?' My answer was that he didn't need to use it, and that perhaps he wasn't really our primary audience, since *Korsakow* is not built for gifted technologists, but for filmmakers. Indeed, by design, it doesn't require any programming knowledge. We might call it 'second-wave software': the kind of graphical-user interface (GUI) based media software or authoring application that isn't predicated on a high level of technical expertise, but is not (in John Maeda's⁴ sense) necessarily limiting in terms of creative expression.

This anecdote serves as a reminder that some of the most distinguished current productions, for example, *Prison Valley* or *One Millionth*

Tower, have been created by whole teams of creative and technical staff (at the commercial studio Upian and the NFB, respectively). This is a key difference between 'off-the-shelf' authoring tools and tailor-made solutions: the latter remain proprietary and are the domain of highly skilled technologist-creators at the so-called 'bleeding edge' of new media development (other examples are Manovich and Kratky's *Soft Cinema* software and Jonathan Harris' *The Whale Hunt*). The former are only now becoming commonplace, as my opening list of media software programs suggests.

Choosing a software platform for any kind of project is, as much as anything else, an exercise in playing the odds: quite apart from cost, reliability, documentation and support. What if one or more factors (the programming language, the platform, the operating system, the plugins, the versioning) prove to be relatively short-lived? Part of the attraction of open-source is the sense that works produced with such applications will last longer. This category of software, often housed in shared, publicly accessible repositories such as GitHub, is designed with modification in mind, including the possibility of updates-for-accessibility beyond the active life of the enterprise that spawned it. (I'll go so far as to predict a new and lucrative line of work, assuming it doesn't exist already: software salvage and the skilled 'resurrection' of 'new media' works.)

All said, however, as the archivists remind us, the digital future is dark indeed (Brand 1999), or at the very least radically unstable. A vivid, recent example is the back catalogue of the profoundly important Labyrinth Project, directed since 1997 by Marsha Kinder at the University of Southern California. Their early interactive narrative works were produced on CD-ROM – almost everything else is on DVD-ROM – a perfectly sound decision, perhaps the only viable one given the inadequacies of the web at that time for delivering video content to large audiences. However, when I acquired some representative works from their oeuvre a few years ago, the titles on CD-ROM could not be played on my then-current laptop. Further, the laptop I use for my writing doesn't have a disk drive of any kind.

With this cautionary tale in mind, we should really wonder how much longer the current flood of web-based documentaries will be functional and viewable. To whit: anything built with the proprietary Adobe Flash application (*Gaza/Sderot Prison Valley*; *Out My Window*; *The Whale Hunt*) already has a very large question mark hanging over it, since accessing and exploring these films in the future will depend on the continued investment of Adobe, a corporate software developer not

given to supporting software it deems to be outmoded. Further, these films are inaccessible on some mobile devices such as iPads (this is a crucial point, given recent estimates indicating total sales of the iPad at around 100 million units by the end of 2012).

Other issues are at play here too: ensuring that Flash-built projects remain accessible in the future depends in large part on being able to open and modify the project files in order to re-export them. This in turn depends on the backwards compatibility of the software, in other words, the extent to which older project files remain accessible via newer versions of the software. To put it bluntly, it's very likely that key films in the history of cinematic/theatrical documentary, going back to the early 1900s, will still be easily viewable in one or more media formats 50 years from now; I very much doubt the same can be said for any current digital interactive narratives.

Working with Korsakow

The Korsakow application was originally developed by Thalhoffer in Macromedia Director (now Adobe Director), which was in itself quite an achievement, as Director was intended for creating multimedia presentations, not software applications. Exported Korsakow films required a web browser extension called Shockwave in order to play. By 2008 the Director application had been eclipsed by Flash, and the Shockwave plugin had become less and less viable. The redevelopment of Korsakow, which resulted in an entirely new version (version 5; there is no version 4) being released in July 2009, involved completely reprogramming it in Java as an open-source application. Exported films currently require the near-ubiquitous Flash web browser plugin to play, with an iPad-compatible (i.e., HTML5) export function planned for release in late 2013.⁵

Making a Korsakow film is an extended exercise in interactive spatial montage. Lev Manovich suggests that spatial montage 'could involve a number of images, potentially of different sizes and proportions, appearing on the screen at the same time' (2001, p. 322). With Korsakow, the 'images' are often paused videos; further, the software allows the maker a great degree of latitude in designing these spatial montages, which can change from section to section as the film plays. Will Luers' (2013) intriguing discussion of interface design in database storytelling draws its inspiration, in part, from the world of graphic novels. He argues that narrative cohesion 'comes less through the codes of mimetic construction – the propping up of a continuous world – and more through the patterns in the semiotic surface of the

work'. For Luers, 'the narration of the database is through the interface; its design, entry points, absences, spatial complexity and simultaneity' (Luers 2013, p. 7, emphasis added). Sharon Daniel (2013) goes so far as to argue that the act of designing the interface 'constitutes a form of "argument" (as writing does for a scholar)'.

In a Korsakow film one 'image' area is where the 'main' video plays. The other images (or paused videos) are the clickable previews to load the next spatial montage, which may or may not have the same design as the previous one, depending on the creative choices made by the maker. (If the preview is indeed a video, mousing over it will make it play.) There's certainly an evolving degree of skill in this authoring process. As Manovich reminds us: 'this juxtaposition by itself of course does not result in montage; it is up to the filmmaker to construct a logic that determines which images appear together, when they appear, and what kind of relationships they enter into with one another' (2001, p. 322). Miles (2008) sees this development as a shift from being 'video makers creating specific and single video works towards being designers of combinatory engines' (p. 226). It's worth noting here that before Version 5, exported Korsakow films actually included a separate, special Korsakow file that Thalhoffer dubbed the Korsakow 'engine'.

What differentiates Korsakow, apart from the fact that every exported film marries video, stills, text and sound assets to a customised, closed database, is that the application itself is downloaded and installed on the maker's hard drive, the chief alternative being 'software as a service' (SAAS), also known as 'webware' (Manovich, 2013, p. 2). 3W, Diehouti, Klynt, Storyplanet and Zeega are all SAAS. Further, Korsakow films are self-contained. They do not need to be viewed via the web since they can also be exported and played on a computer's hard drive using a web browser. This is an important distinction for at least two reasons: for better or worse, Korsakow films are not networked, meaning they don't depend on links to media outside the film itself, unlike Zeega films, for example, which are meant to be built entirely from online media content. (If Zeega's tongue-in-cheek Web Doc Manifesto (2012) is to be believed, films that don't use online content are 'dead'.)

You can embed a Korsakow film, or an excerpt from a Korsakow film, in a website, but you can't (yet) embed online content (e.g., a YouTube or Vimeo video) into a Korsakow film. Although it's currently an unsupported feature, makers can also set their films to autoplay, so the Korsakow film's database chooses the progress of the narrative itself, making 'selections and combinations' (Kinder 2002, p. 6) on behalf of the user. Interactivity is therefore not a defining feature of a film built

with Korsakow. Finally, like software versioning, Korsakow films can be continually updated with new material or creative refinements. A good example of this is Adrian Miles' Korsakow film *Fragments* (2009 onwards), a collection of allusive, poetic video shorts that he periodically expands, based on the addition of newer material. Thalhoffer is also given to occasionally revisiting and redesigning some of his earlier films, for example, *13terShop*. This is another sense in which web docs, certainly Korsakow films, are unstable, being never quite finished.

Small-scale films and the slow web

During a recent Korsakow workshop – one of many I have led in the past six years – one participant, a teaching professional and media maker, suggested that Korsakow films are 'languid', and wondered if it was possible to make them more 'propulsive.' The point was well taken and actually served as part of the impetus for this section. As it turns out, most of the Korsakow films I've seen or made have been, if not 'languid', exactly, then contemplative, interpretive and exploratory: extended spatial montages with minimal interface elements, and certainly not 'all-singing-all-dancing', technologically precocious affairs. Surveying films made with Korsakow, including our own, our collaborators', and our students', reveals that the majority are documentary-oriented, typically small scale, observational, character driven, even meditative.

Korsakow films require attention and a reasonable investment in time without distractions (using headphones and toggling the films to full screen mode certainly helps, too). They're also technically conservative in the sense that they don't begin by asking for your Facebook login info (*Prison Valley*); they don't place the viewer at the centre of the narrative, explicitly inviting them to play a role in the story (*Journey to the End of Coal*). Korsakow films don't change to match the weather at the moment of viewing (*Millionth Tower*), nor can media assets be instantly reassembled into striking visualisations (*The Whale Hunt*). While some might see non-linear documentaries as a decisive break with the past, one could argue that Korsakow films, in their 'languor', have more in common with a 'discourse of sobriety' (Nichols 2010, p. 36) than their 'propulsive', or kinetic, or ludic contemporaries.

This perspective is underscored by Adrian Miles, a Korsakow user and teacher, who makes a vital distinction between what he sees as an "Encarta" model where large scale productions are undertaken that have all the hallmarks of a major studio production' and a 'more personal'

mode, 'rely[ing] less on spectacle than the presence of a "voice" within the work. They are intimate, crafted, and in many ways small scale works. If the first mode emphasises information, the second is about experience. These minor works are ambient, associative and affective and this is what constitutes their voice' (Miles 2013). Korsakow, as a 'combinatory engine', produces 'affective narratives' that are 'not didactic in the sense of making a specific or directed argument but offer up a field of views through interview, stories, asides and observations' (Miles 2013). A consonant perspective can be found in Roderick Coover's recent essay valorising 'deep reads and viewing experiences' (2012, p. 212):

works which challenge the easy consumption of ideas may require time and effort on the part of the receiver ... Experiencing concentrated engagement, duration, immersion and the gathering of ideas over several sittings even may be of the essence of such works, both in form and content. (Coover 2012, p. 204)

In contrast, Siobhan O'Flynn (2012) argues that Korsakow films (and, specifically, *7 Sons* (2003, Thalhoffer and Hamdy), are emblematic of 'earlier models focused on user as editor, [in which] a recurrent promotional mantra was the allure of 'now you can edit your own film'.' (I know of no such definitive claims, official or otherwise, made on behalf Korsakow; it's also worth noting that Thalhoffer has published at least six Korsakow film projects since *7 Sons*.) O'Flynn suggests that Korsakow films, with their 'simpler interface[s]', are 'reified experiences that rarely create an emotional resonance with the interactant'; further, they are not "pleasurable", because they lack a "fixed editorial structure" and rely on a "flat" or "static" interface design that takes only minimal advantage of the affordances of web interfaces' (O'Flynn 2012, p. 146). I will elaborate some of these issues later, but a provisional suggestion is that O'Flynn appears to be conflating her own expectations and tastes – specifically, an overriding investment in 'dynamic interface design' (O'Flynn, 2012 p. 147) – with the actual affordances of Korsakow as a tool for filmmaking.

Algorithmic editing and the Korsakow film *Ceci N'est Pas Embres*

It is self-evident that any non-linear or multilinear narrative, regardless of the medium, must be built from smaller, discrete components and that these will be viewed collectively in sequences partly prescribed by

the maker and partly chosen by the viewer. These building blocks have been variously understood as chapters (cf *Hopscotch* by Julio Cortázar 1966), clips (Manovich and Kratky, 2002), shots (Miles 2008), scenes, lexias (Hayles 2002), 'story currents' (Weinbren 2007, p. 66), or paths (e.g., *Scalar*). In the context of Korsakow, we call them 'smallest narrative units' or 'SNUs' (Emigholz 2002). In contrast to some of these definitions,⁶ it is important to note that a single SNU can of course contain its own cuts or dissolves; it is a unit of narrative, after all, not a unit of film or video. Just how short each of these components is, is a function of the film's 'granularity' (Miles 2008). With Korsakow we see typical durations of 1–2 minutes, with films being comprised of anywhere from a dozen to over a hundred SNUs.

Unlike most of these kinds of authoring tools, and the works produced with them (which one might compare in terms of structure to *Choose Your Own Adventure* books), the SNUs in a Korsakow film are not connected together with fixed paths. Rather, they are contextually articulated to one another using two sets of keywords (tags), what we might think of as metadata (Anderson 2004): the 'in' keyword(s) describe the SNU itself, while its 'out' keyword(s) define what it will look for while it is playing (matching 'in' keywords from other SNUs). For filmmakers who already work with production software, perhaps the most vivid clue to Korsakow's uniqueness is that the application interface does not have a timeline (unlike, say, *Final Cut Pro*, *iMovie*, *After Effects*, *Flash*, *Pro Tools*, *Audacity*). This is a definitive reminder that, in a Korsakow film, story elements are not triggered based on a fixed 'master' sequence, but by hidden, iterative, keyword searches.

We believe this is a unique property of Korsakow: the films produced are database driven. With Weinbren (2007), Kinder (2003b) and others, I reject Manovich's (2001) and Lovink's (2008) overstated arguments (such as 'We no longer watch films or TV; we watch databases' (Lovink 2008, p. 9)) that narrative as a concept and category has somehow been replaced by the database. Indeed, as Weinbren suggests, since a 'database, in itself, does not present data: it contains data' (2007, p. 67), 'it may be more useful to look at ways that narrative can be retooled in the light of the database: that the new media open an opportunity for rethinking the notion of narrative, rather than shutting it out' (Weinbren 2007, p. 66).

We can see now that creating a Korsakow film involves at least three different kinds of 'editing': first, the most familiar kind, in which video or digital film footage is selected and cut together to make the raw material for each SNU; second, algorithmic editing, or, the process of what

we call 'SNUifying' (adding metadata to each short film including keywords, probability, lives, etc., and then refining this assemblage based on repeated viewing and test screenings); and third, editing involving the viewer, who chooses the next SNU (by selecting its preview) to advance the film, thereby creating a final, non-definitive version of the film in that specific encounter. The viewer will quite possibly see some new SNUs with each viewing of the film, and miss others they had previously encountered. If the keywording has been done thoughtfully and skilfully the film will in any case be coherent. As suggested earlier, however, whether the viewer actually finds the experience compelling is another matter.

Enns (2012) has recently observed that Manovich and Kratky's (2002) *Soft Cinema* (a suite of three films created for exhibition but also published together on DVD), while being a key innovation in algorithmic editing, nevertheless 'fails due to the seemingly arbitrary nature of the editing.' He continues:

Although the clips are associated through keywords that describe and account for their content and formal properties, it is impossible for the viewer to decipher the underlying logic being employed, thus making the clip selection appear arbitrary. (Enns, 2012)

I would argue that this perceived 'failure' of *Soft Cinema* has little to do with the editing 'logic' being hidden; after all, how often is a cinematic documentary released along with its editing notes? Put bluntly, if you have to explain the logic of your editing choices to your audience, your work is failing. Indeed, anxieties about the editing should be moot if the unfolding narrative is perceived to be meaningful and engaging. As it turns out, Manovich and Kratky's algorithmic editing appears to rely, at least in part, on matching clips via their colour or type of motion. I'd argue that keywording should be less arbitrary, taking its cues from the meaning of the clips rather than (merely) their visual appearance.

Korsakow filmmakers have at their disposal a vast conceptual narrative space, between (and sometimes including) the poles of absolute linearity and complete randomness. As Weinbren (2007, p. 71) notes, for a filmmaker, database thinking is liberating – 'one is freed to let the material breathe'. Yet this immensely fertile creative terrain has barely been explored. A productive way to begin this engagement is to decide on an organising principle or, what Kinder has termed, a 'compelling metaphor' (Kinder 2003a, p. 111). While she is referring in her own work to interface design, the same approach can be applied to the ways in

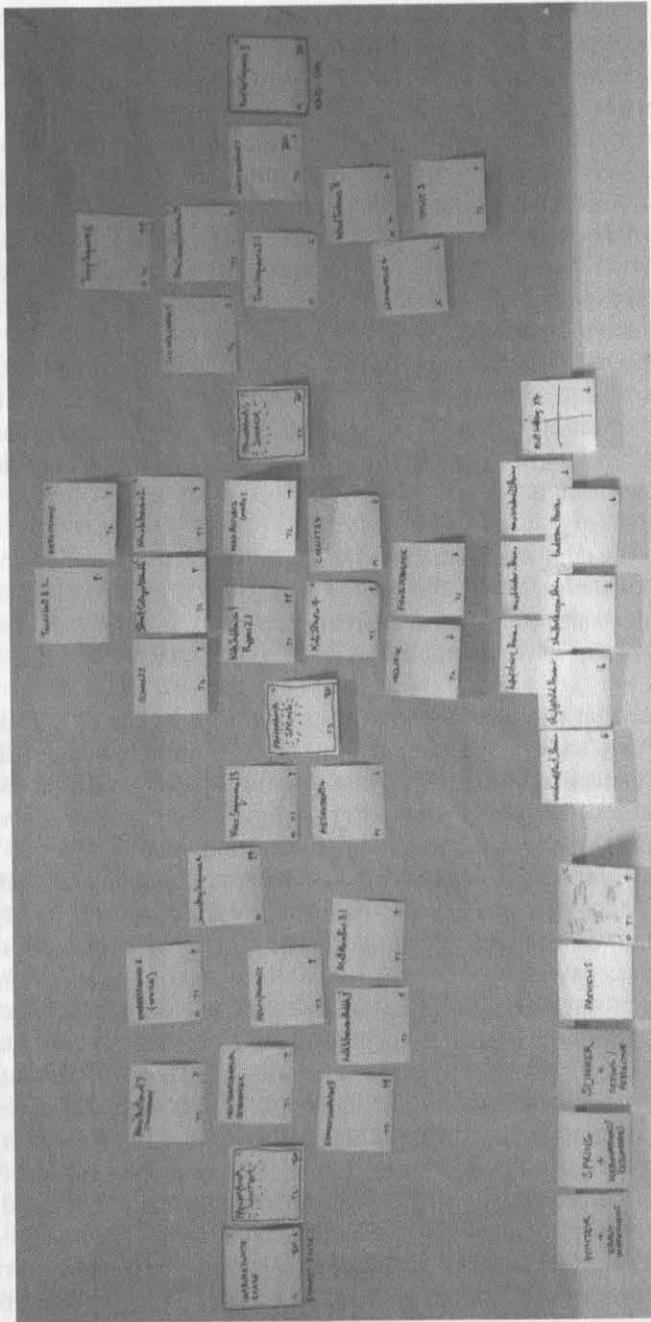


Figure 10.1 Planning out *Ceci N'est Pas Embres* (Soar 2012). Each coloured 'post-it' represents one SNU (smallest narrative unit). They are all colour-coded: blue (Winter: early impressions); green (spring: Negotiations and discoveries); pink (summer: Settled reflections). NB The notes along the bottom edge, centre, are not active parts of the schematic

which the SNUs are assembled and organised. In my recent film *Ceci N'est Pas Embres* (2012), a 'database diary' reflecting on living for six months in a very small village in rural France, the context moves inexorably from winter, to spring, to summer (see Figure 10.1, 10.2 and 10.3). These sections are not merely chronological but conceptual, with each season's SNU exploring, respectively: early impressions; negotiations and discoveries; and settled reflections.

Within each season, the SNUs are also organised to alternate between upbeat and downbeat. Further refinements are possible in Korsakow, at the level of metadata, including the ability to weight each SNU as if it were a loaded dice: in *Embres*, one SNU in each season is designed to be the least likely to appear; it is this SNU that delivers the viewer seamlessly to the next season, via what I have called a 'pinchpoint'. Other



Figure 10.2 Screenshot of a single spatial montage from the 'Spring' section of *Ceci N'est Pas Embres* (Soar 2012). Main window (top) showing a SNU comprising multiple photographs (combined together before being imported to Korsakow); the three images at bottom are previews for three possible SNUs to follow



Figure 10.3 Screenshot of one spatial montage in the 'Summer' section of *Ceci N'est Pas Embres* (Soar 2012). Main window (left) shows a SNU playing; the three images at right are previews for three possible SNUs to follow

refinements include the ability to time the search for keywords to specific visual or auditory cues in the currently playing SNU. This can be useful when the author wants the viewer to stay with a certain SNU before being able to advance the film. For example, in *Embres*, the opening SNU is a minimalist, rotoscoped animation of a car traveling along a winding road; it is only at the moment when the animation changes from night to day that the viewer can see – and hence click on – a preview to begin the first major section of the film: 'Winter'.

While Thalhoffer and I do not claim that watching a database documentary somehow radically empowers the viewer, perhaps positioning them as the 'editor' (and thereby somehow forcing the author to give up control), we do argue that making database-driven narratives using Korsakow provides filmmakers with an extraordinary degree of creative latitude in terms of storytelling, a latitude that database filmmakers have only just begun to explore through their 'algorithmic editing' (Anderson 2004; Enns 2012; Manovich 2001; c.f. 'procedural authorship' Murray 1997). This conceptual development has been described as a shift 'from authorship to authoring' (Cohen 2012, p. 333), and in terms of reception as an alteration in 'the epistemology of the viewing experience ... the viewer becomes a user' (Weinbren 2007, p. 70; see also Miles 2013, p. 4). The vital caveat here is nothing new: 'Agency doesn't necessarily make something wonderful' (Kinder, quoted in Anderson 2004, p. 53).

Some would go further: Thalhoffer is fond of arguing that 'linear films lie'. His point, based partly on the experience of making *Planet Galata*

(France, Germany, Turkey, 2010) for the European television network ARTE as a Korsakow film for the web and a linear film for broadcast (see Aston and Gaudenzi 2012, p. 133), is perhaps hyperbolic, but it's well taken: if theatrical (in other words, linear) documentaries generally necessitate the corralling of footage into a singular narrative arc with a beginning, middle, and end, involving a compelling main character or characters, a problem to be solved or an adversity to be overcome, topped off with a memorable denouement, the filmmaker must inevitably leave a great deal on the cutting room floor (actual or digital). 'Darlings' must be 'killed'; editing necessitates 'cutting to the bone' (Weinbren 2007, p. 71). While the creative and technical challenges for non-linear filmmakers are significant, they are much less likely to have to deal with this particular conundrum.

For a theory of algorithmic editing: Articulation and assemblage

For a filmmaker with a background in cultural studies, the potential affinities between creating a Korsakow film and articulation theory (Slack 1996; Slack and Wise 2005) are too tempting to ignore. Jennifer Slack (1996) has described articulation as:

perhaps one of the most generative concepts in contemporary cultural studies. It is critical for understanding how cultural theorists conceptualize the world, analyse it and participate in shaping it. (p. 112)

In this 'theory of contexts' (Grossberg 1993 cited in Slack 1996, p. 112), culture is broadly understood as a sprawling range of processes of meaning making, constituted through multiple connections (or 'articulations') between objects, ideas, values – even sensations. Further, 'these articulations or connections are not necessary, and it is possible that they could connect otherwise' (Slack and Wise 2005, p. 127). Articulation, then, is 'the contingent connection of different [cultural] elements that, when connected in a particular way, form a specific unity' (Slack and Wise 2005, p. 127), called an assemblage. All articulations, and hence assemblages, are in flux, being not merely contingent but also contested.

If we reflect for a moment on the process of creating SNUs – adding self-identifying ('in') keywords and contextual search terms ('out' keywords) to video assets – we can see that these terms are comparable in a limited yet productive way to the cultural meanings under scrutiny when deploying articulation as theory and method. In both cases, it is

the meaningful, contingent connections between the objects and ideas that really matter. We might also think of a completed Korsakow film as being an assemblage of SNUs: a cogent array of potential, narrativised, connections within a filmic database that expressly precludes the creation of a 'master' (linear) narrative.

The implication here is that, in an ideal case, assembling (algorithmically editing) a database documentary in Korsakow can be understood as a motivated and consequential process, in which a contingent set of related meanings is created, and recreated, as the film is built, exported, tested, refined, re-exported and tested again before final export and publication. This is what Kinder might call, in broad terms, 'selection and combination' (2003b, p. 349; Anderson, 2004).

Miles (2013) makes a consonant argument, starting from a specifically Deleuzian notion of assemblage, that is 'a combinatory system ... enabl[ing] the production of affect via complex forms of media practice.' In this frame, 'Korsakow films are taken to be exemplary instances of such affective assemblages.' Together, these insights encourage us to understand algorithmic editing as a specifically cultural process that attempts to reflect some of the nuance and complexity of meaning making that occurs outside the immediate purview of the film.

For Slack and Wise (2005, p. 112) articulation theory rejects the idea that 'all these connections are reducible to an essence or to a critical factor', which comports with the fundamental rejection in Korsakow of a single, essential narrative trajectory, or one pivotal moment in terms of a protagonist's journey. Similarly, it also implies that linear storytelling is, per Slack and Wise's (2005) broader argument about the relationship between technology and culture, mechanistic as a process and deterministic in terms of its attempts to represent 'lived reality'.

It is worth underscoring that this argument has less to do with attempting to chip away at the profound achievements of cinematic or theatrical documentary, and more to do with theorising the potential gains to be had in pursuing these novel forms of making as a process of cultural and political engagement. For Thalhoffer, and for me, Korsakow is as much a philosophical intervention into the politics of 'story' as it is a media software application for making database narratives, chiefly documentaries. As Thalhoffer argues in relation to his newest film, *Money and the Greeks* (2013), about the economic crisis in the European Union, he saw his role as facilitating and reflecting a set of urgent issues and ideas, rather than providing answers – a gesture made possible through his implicit rejection of linear storytelling, and his on-going embrace of database-driven narratives.

Conclusions

Today, scholars and makers of database documentaries, and associated software developers, routinely find themselves clubbed together on the 'new media' panel at documentary and cinema conferences or the 'new media' section of film festivals and competitions. (Of course, this is apart from events focused exclusively on new media and documentary, for example, Database | Narrative | Archive: An international symposium on nonlinear digital storytelling held in Montreal, May 2011 and the i-Docs symposia, in 2011 and 2012.) Worse, at least one festival that recently declared itself to be investing in new forms of documentary also asked for works to be submitted on DVD, which, at this historical moment, rather misses the point. It would surely be one welcome indication of the 'arrival' of this medium if these particular scholars and makers were assigned to panels based more on the content of their work than exclusively on its form. This would also open up web documentaries to more critical scrutiny and in time provide a sober accounting of the achievements and deficits of the first decade of the web documentary. It also indicates that more scholars of the documentary form need to sit down and watch this kind of work; developers need to commit their ideas and aims to paper; and, makers need to share their processes and their tools. Insight into the form depends in part on understanding how a web doc is constructed, and, as Nash (2012, p. 195) points out, 'a challenge of researching interactive texts is that the whole text is never completely available for analysis. Each viewing has the potential to be different from the last.'

An attendant danger in all of this is that, in the absence of an explicit, on-going discourse among makers, critics and theorists of linear and non-linear documentary, the technical and conceptual achievements of the first generation of web-doc storytellers and technologists could be written off as so much smoke and mirrors, primarily because the works themselves may soon be too hard to find and to play. Finally, of course, I welcome criticisms of this chapter, of Korsakow and of the films made using this software. Given the astonishing fragility of the emergent web documentary ecosystem in terms of rapidly shifting platforms and technologies, we had better move fast.

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Notes

1. My student JoAnne Pearce recently conducted a creative survey of four tools (3W Doc, Korsakow, Storyplanet, Zeega) with a view to identifying their affordances and ease of use: <http://joannepearce.ca/category/story-circuit/>
2. A partial list of relevant neologisms includes: soft cinema (Manovich 2005); interactive cinema (Weinbren 2007); future cinema (Shaw and Weibel 2003); online storytelling; nonlinear narrative; database narrative (Miller 2004); interactive narrative; procedural narrative; immersive documentary; theatrical documentary (Cizek in Hutter 2012) versus interactive documentary (e.g., Kinder 2003a); iDoc (Aston and Gaudenzi 2012); web documentary or 'webdoc' (e.g., Nash 2012); digital documentary; database documentary (e.g., Burdick et al. 2012; Cohen 2012); dynamic documentary; multilinear documentary. Given the field's radical fluidity, I'm sympathetic to Aston and Gaudenzi's (2012) claim that a 'taxonomy of i-docs is very much needed' (p. 133), but see such a task, at least for now, as being akin to drawing circles on the surface of a fast-flowing river. Their own proposal, for four specific 'modes' of i-doc (conversational; hypertext; experiential; participative), also strikes me as having limited utility.
3. Gerry Flahive, a senior producer at the National Film Board of Canada, recently noted that, whereas a 'regular' documentary might cost upwards of \$750,000, *Out My Window*, a recent, Emmy Award-winning iteration of Kat Cizek's highly successful, multiyear *Highrise* project, cost \$150,000. "We made creative decisions about how best to tell stories of people's lives in apartments all over the world ... focusing on the strengths of the web as a native platform for creative documentary. That turns out to be less expensive, of course, than taking a crew all over the world to shoot video, but the drive is to innovate" (Flahive, personal communication). See also O'Flynn (2012).
4. 'Without being able to know how to program, you can't break out of the technology - just like if you don't know how to use brush and ink, you're limited' (John Maeda, quoted in Dreifus 1999).
5. Films made with earlier versions of Korsakow can be re-exported in Korsakow 5 fairly reliably, but only as long as the project files are available.
6. I have some minor quibbles with one of Weinbren's word choices here, for largely pragmatic reasons: I would argue that in place of 'interactive' one might use 'database driven', since Korsakow films, for example, can be set to autoplay (a feature developed for use in gallery and museum installations). Using colour-coded hairlines around the previews for the next SNUs, on autoplay, Korsakow, briefly indicates which path it might take next, before making its own selection, thereby moving the narrative forward without any human interaction - hence no need for a touchscreen or mouse.

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