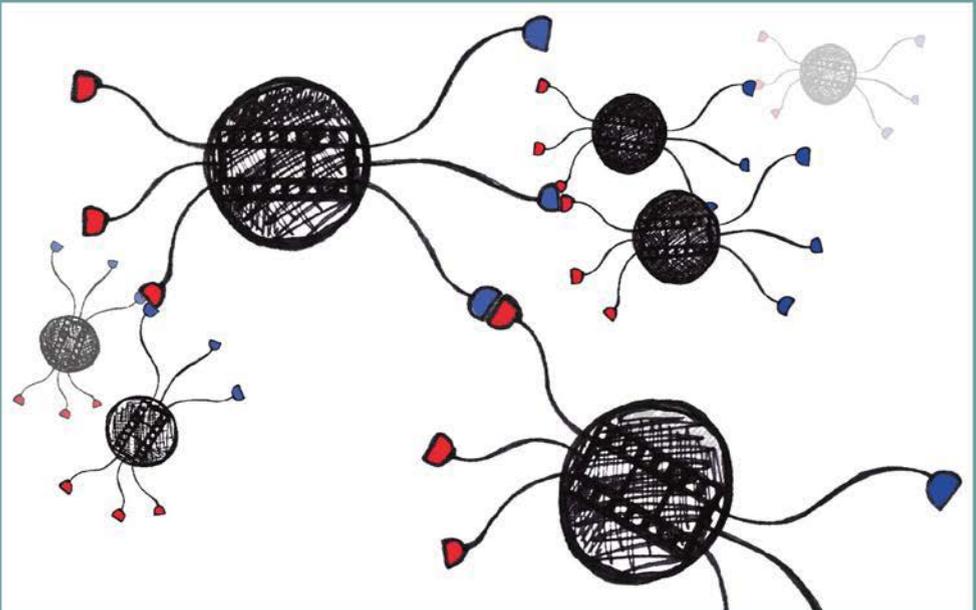


Of Trees and Clouds

Software-Mediated Visions in Documentary and
Ethnographic Filmmaking Practices





unipress

Franziska Weidle

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With 22 figures

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Prolog: Attuning to Trees and Clouds

In the face of so-called “anthropogenic climate change” in the “Anthropocene”, the era of the anthropos, we need, more than ever, to find cultural forms which allow us to encounter the world outside the hall of mirrors provided by our technologies, where everything that happens is pre-interpreted to be proportional to conservative human aesthetics, human proclivities, human needs.
Baruch Gottlieb (2018: 13).

The digital, it seems, is deeply saturating the ways we perceive, experience and engage with our lifeworld. With its discrete numerical quantities, it introduces a new set of rules that challenges established forms of expression and contributes to a new understanding of mediation itself. At the same time, it is intricately tied in with earlier systems of representation including the discrete, sequential structure of text and the continuity of proportional, analog media. This book looks at the influences of recent technological advancements on documentary and ethnographic filmmaking practices, which, among other things, have led to a renewed interest in the (im-)possibilities of reproducing empirical realities. Critical questions concerning the use of interactive media and their acclaimed non-linear, performative, evocative, and polyphonic potentials are well addressed from a field grappling with this issue long before digital technologies became as ubiquitous, affordable and accessible as they are today. Inspired by postmodern and postcolonial theory, the long crisis of representation in social, cultural, and visual anthropology began over 30 years ago with James Clifford’s and George Marcus’ *Writing Culture* (1986) and was continued, among others, by feminist scholars Ruth Behar and Deborah Gordon in 1995. Since then, authoring strategies have been under close scrutiny for either being too close to fiction or too rational, didactic and monologic. Thus, the distribution of ethnographic knowledge has continuously evolved into both, a minefield and a creative playground. As a minefield, it has given rise to a long discourse about questioning the validity of subjective accounts of the world up to a point where creative treatment was dismissed altogether for its constructed, unreliable, and nonscientific nature. As a playground, though still tied to established academic formats and conventions, an experimental impetus has been unfolding over decades, opening ethnographic theory and practice up towards the creative possibilities of different media technologies.

Just as the use of photography and film enabled anthropologists to develop new perspectives on ethnographic representation, so did computer-based forms stimulate critical reassessment and creative innovation (cf. Pink 2013). Yet, similar to the lack of attention media technologies initially gained outside of

specialized sub-disciplines, David Zeitlyn and Gustaaf Houtman (1996) argued that the computer has not been studied enough in the ways it impacts anthropology as a whole. Starting in the late 1970s and early 1980s, initial experiments with software¹ already hinted at the possibilities enabled by digital computation for the documentation, manipulation, analysis, presentation and distribution of qualitative data (cf. *ibid.*; Underberg and Zorn 2013: 43–4). Among other aspects, its capabilities of storing, indexing and retrieving increasing quantities of information were welcomed due to the “intuitive relationships between image, sound, and word” they facilitate (Barkin and Stone 2004: 205). The promise of a richer, more integrated and contextualized treatment of heterogeneous data sets also prompted critical engagements with hypertext and hypermedia in ethnography, which seemed to offer better ways for coping with complexity (cf. Howard 1988: 314). Fueled by the scientific-realist paradigm of the twentieth century, these experiments were initially disputed and restricted on the grounds of text-centric principles² before they gradually inspired new approaches to rethink anthropology “through use of a visual medium” (MacDougall 1997: 192) or “through experimentation ‘against the grain’” of the digital form (Fortun *et al.* 2017: 14).

Since then, new tools have emerged and inspired anthropological researchers to explore novel forms of knowledge production and dissemination. These forms combine different technologies, formats and modalities and ultimately seek to go beyond the established text-based standards.³ Conceptualizations underlying this experimental tradition acknowledge that, as acts of translation, ethnographic representations need their fictional counterparts not only as point of differentiation but also as a means to making statements about socio-cultural

1 Launched in 1985, The Ethnograph is an early example of software specifically developed for the purpose of analyzing qualitative data with the support of the computer (see: <http://www.qualisresearch.com/> (accessed 31/07/2018)). In the 1990s, other software packages followed such as HyperResearch (cf. Hesse-Biber *et al.* 1997, online: <http://www.researchware.com/> (accessed 31/07/2018)) as well as models to arrange data in website form (cf. Barkin and Stone 2004).

2 Take, for example, Peter Biella’s (1993) approach to ethnographic film and its supposed shortcomings with regard to anthropological scholarship.

3 The works by the curatorial collective *Ethnographic Terminalia*, for example, seek “to develop generative ethnographies that do not subordinate the sensorium to the expository and theoretical text or monograph” (see: <http://ethnographicterminalia.org/about> (accessed 26/10/2018)). Another example would be #Colleex – a network for ethnographic experimentation that has been forming since 2013 within the European Association of Social Anthropologists (EASA) and counts over 100 members (see: <https://www.easaonline.org/networks/colleex/index.shtml> (accessed 28/10/2017)). Moreover, new journals specifically dedicated to sensory, experimental and multimodal ethnography have emerged such as the newly founded *Entanglements*: <https://entanglementsjournal.org/entanglements-that-matter/> (accessed 22/05/2018).

phenomena in the first place. However, creative ethnographers might also draw on methods and styles that depart further from representation as such. *Leviathan* (2012) by Véréna Paravel and Lucien Castaing-Taylor is an often-cited example that demonstrates the influence of digital technology on the process of filming but also on the aesthetics of the documenting experience itself. According to Andrew Murphie's analysis of the film (cf. 2014: 193–5), the mobile and small-scale design of GoPro cameras, which are strapped onto bodies and plunged into water, allows for a specific kind of relation with the world of a trawler at sea.⁴ This relation is translated into an intense sensuality while the cameras' technicity is simultaneously amplified. At the intersection of documentary art, visual research and ethnographic practice, formal experiments become more frequent such as those that explore the web and its epistemic potentials for non-linear, collaborative and participatory forms of knowledge-making (cf. Aston 2010; Coover 2011; Favero 2013; Ramella 2014). The well-known work by filmmaker and scholar Roderick Coover is a case in point. From early multimedia experiments on CD-ROM and interactive scrolling environments to video installations and generative combinatory films, Coover incorporates new technologies and investigates their poetics and politics.⁵ His projects also clearly challenge linear storytelling, which has become a central mode of knowledge representation in ethnographic monographs and films.

Turning from the linguistic to the (new) materialist paradigm, dissatisfaction with the linear, often narrative organization of empirical data is brought to the next level. The world is increasingly recognized as messy, so are our encounters of it (cf. Law 2004; Pink *et al.* 2016: 12–4; Dourish and Bell 2011). The discrepancy between coherently structured accounts on the one hand and simultaneous multiplicity, unruly things and contingent experiences on the other is one of the core challenges anthropologists face. The digital is such an unruly thing that asks us to rethink established concepts, methods and methodologies: It spreads across different layers and frames of reference while constantly changing its form, function and meaning. Mess and unruliness, Sarah Pink and her colleagues argue, “is constituted through the relationality of things” such as digital materiality (2016: 13). Following Tim Ingold (2008, 2011) in his understanding of life as an ongoing making of connections, they describe the digital, the material and design to be porous elements of the same processes: “Digital materiality refers to the making and to what emerges of these entanglements, not to a state or a quality of matter” (ibid.: 11). If materiality is a reciprocal process

4 The practical and theoretical work of visual anthropologist Sarah Pink is another much-cited example that illustrates how engaging with video and hypermedia can lead to a rethinking of knowledge production and representation in visual ethnography (cf. 2006, 2012, 2013).

5 For an overview of his work, see: <http://unknownterritories.org/> (accessed 27/11/2017).

rather than an object with distinct properties and designing means thinking with, through and along these processes (cf. Bratteteig 2010: 148; Akama and Prendiville 2013), then engaging with digital materiality from an ethnographic standpoint involves attending to the moments when these porous elements come together. This refers to actual design practices and how digital culture is materially pre-configured. However, it also means looking at everyday applications of technologies and how so-called ‘users’ experience and perform the design of others, often in unexpected ways, according to their own needs and specific circumstances. On a similar note, ethnographic activities could be understood as a means to skillfully attuning to, following, improvising with and intervening in the active forces of a digital-material world continuously in motion. The struggle with representation, too, is an expression of an embodied thinking-in-action and, thus, a question of design and how to facilitate this ongoing conversation with materials (cf. Schön 1984).

In response, Pink and her colleagues (cf. 2016: 3) recently advocated for an extended dialogue between digital anthropology, media anthropology and design anthropology through the lens of digital materiality. Such a dialogue, I argue, should be broadened further to map out a field where anthropological theory and practice intersect with digital design and interventions, but also with other materialities, activities and intensities. After all, in one way or another, the digital has become entangled in every ethnographic research project. Yet, deterministic views are still commonplace, even if only implicit, and treat research devices and environments all too often as ‘tools’ merely *assisting* anthropologists.⁶ This doctoral study continues the experimental trajectory in visual anthropology to test novel forms of knowledge production and dissemination. It does so by focusing on media software and acknowledging it as an active participant in the processes of knowledge-making at two levels. While the main interest is to observe documentary practitioners as they retrain their visions with and through digital materiality,⁷ it is also my concern to transfer these observations to the field of ethnographic film-work and propose a methodology for joining with the materials and devices of our research (cf. Law and Ruppert 2013) more consciously. This entails reconceiving ethnography as an active opening up to method and process as forms of knowledge in their own right.

6 Susanne Friese, for example, remarks that “software is a *tool* that (*only*) *supports* the process of qualitative data analysis” (2006: 311, emphasis added). On a similar note, the mobile application EthnoAlly is advertised as “a personal *assistant* for ethnographers” enabling him or her to create, organize and share GNSS-tagged multimodal field notes (see: <https://docubase.mit.edu/tools/ethnoally/> (accessed 26/10/2018), emphasis added).

7 All of the interviews conducted over the course of this research project have been archived by me and can be made available for further research upon request.

The essays gathered here can be seen as a step beyond the representational idiom. This step continues the move towards the performative as Andrew Pickering (cf. 2002: 414) described it for the study of science and technology. Because digital media are “fluid, malleable, responsive, and changing”, Dale Hudson and Patricia Zimmermann note, they “recalibrate the relationship between maker/designer, audience, and content/context into a more open system” (2015: 5). Although not without challenges of their own, such open systems could certainly draw action and attention towards the present of practice and amplify the contingencies, uncertainties and potentialities that derive from our engagements with the world. Cultural geographer Hayden Lorimer describes the shift in emphasis this more-than-representational undertaking implies:

The focus falls on how life takes shape and gains expression in shared experiences, everyday routines, fleeting encounters, embodied movements, precognitive triggers, practical skills, affective intensities, enduring urges, unexceptional interactions and sensuous dispositions. Attention to these kinds of expression, it is contended, offers an escape from the established academic habit of striving to uncover meanings and values that apparently await our discovery, interpretation, judgement and ultimate representation. In short, so much ordinary action gives no notice of what it will become (2005: 84).

In short, one way to break with anthropocentrism is to focus on what things do, can or could do rather than what they mean or represent. This book suggests that digital computation can enact the *emergent relationality of things*. It is on us to put this opportunity to work by advancing the analysis and critique of dominant design principles, standardization processes, software-mediated visions, narratives and fetishisms further. Why continue mapping the web as a giant tree when, instead, we have all it takes to think through the shifting contours of clouds?

Part I: Introduction

1 A New Playground Stuck in Old Paradigms: Reconsidering the Rules of Representation

With the proliferation of computational technologies in the creative industries and the resulting scope of digitization in our media landscape today, it seems almost natural to expect that established cultural forms and routines would undergo significant transformations. Indeed, the consequences of cultural computerization, networked¹ and ubiquitous connectivity² become evident in the sheer abundance of content creation, authoring and sharing applications available (though only in particular parts of the world) to a broad range of media practices, from the highly professional to the everyday. These tools simplify existing workflows by making formerly laborious tasks programmable, which lowers the threshold for novice practitioners (cf. Hight 2014a). The capability for discrete computation, however, also provides new creative possibilities stimulating imaginations. Current smartphone technology presents a powerful example of hardware bundled with and configured by a myriad of applications including built-in recording, editing and sharing functions. Such mobile devices are embedded within a continuously updated and growing ecology of systems and services designed for a seamless insertion into everyday activities. Exceeding the scope of previous forms of collaborative media, “the widespread advent of social media”, according to digital media scholar David Golumbia, “has allowed interactive commentary on and response to original productions in such detail and with such rapidity as to suggest their own implication in the production process” (2014: 58). These tendencies are encapsulated in the notion of the computer as *metamedium*, a term coined by computing pioneer Alan Kay (cf. Kay and Goldberg 1977: 40) and invoked frequently throughout (new) media theory. A metamedium is capable of simulating already existing media as well as inventing new ones (cf. Manovich 2013: 44–5). Given the pervasiveness of dig-

1 Among other things, I mean the restructuring phase of the web, also known under the term Web 2.0, which primarily aimed at opening it up towards its users by serving applications to them that facilitate the creation and sharing of information online.

2 Here, I refer to the idea of what is generally known as ubiquitous or pervasive computing, i. e. the move from personal desktop computers to interconnected everyday devices and objects.

ital, that is software-based, technologies,³ it becomes increasingly necessary to scrutinize to what end and to what extent⁴ aspects of cultural forms and practices are becoming subject to programmability.

Yet, taking a closer look at film as central media format and aesthetic of the twentieth and early twenty-first century, its material principle appears surprisingly stable. In analog film, strips of celluloid had to be cut and glued together into a linear sequence so that they could be run on reels through the projector. These conventions have influenced decades of film and video production and are even applied to editing software today where clips are still ‘cut’ into linear sequences, though, without the material imperative to do so. In light of software-driven digital data, already in 2003 new media scholar Lev Manovich imagined a different scenario for the contemporary Hollywood film:

An individual viewer receives a customized version of the film that takes into account her/his previous viewing preferences, current preferences, and marketing profile. The film is completely assembled on the fly by AI software using pre-defined script schemas. The software also generates, again on the fly, characters, dialog, and sets (this makes product placement particularly easy) that are taken from a massive ‘assets’ database (2003: 18).

What Manovich had anticipated for the film industry 15 years ago almost reads like a description of the World Wide Web as we know it today. In fact, visiting a customized version of a website that is algorithmically generated on the fly based on previous search, like, share, up- and download activities has turned into the default of targeted advertising. This dominant ‘business model’ does not appear to occupy an equally relevant status in the movie-making domain thus far. Needless to say, the digital and its ascribed principles⁵ have left substantial marks on the way films are currently produced and distributed.⁶ Hollywood, the “Mecca of filmmaking”, is renowned for its trendsetting role as early adopter in

3 The reasons for specifying digital technologies as software-based will be elaborated in Chapter 2. Suffice it to say at this point that software can be understood as the one common feature all computer technologies share (cf. Frabetti 2015: x).

4 In his analysis of video editing software, Craig Hight (2014a) identifies a continuum from low to high-level forms of automation. The latter is primarily used in entry-level tools such as Magisto – “a superhuman video editing team” designed to virtually erase the formerly manual and skill-intensive labor involved in the processing of images and sound (see: <https://www.magisto.com/> (accessed 13/08/2018)).

5 While Janet Murray (cf. 1998: 71–93) emphasized the procedural, participatory, spatial and encyclopedic properties of digital environments in relation to storytelling, Manovich (cf. 2001: 27–46) advocated for a transferal of categories from computer science to new media objects, above all the principles of numerical representation, modularity, automation, variability and transcoding. In his study of code, Adrian Mackenzie (cf. 2006: 6) criticized such formalisms for their unsuitability to capture the mutability of software and its underlying multiplicity of relations.

6 For a documentation of the influences of digitization on film production, cf. McQuire 1997.

the field.⁷ Take, for example, digital cameras as standard recording equipment, digital nonlinear editing software (DNLE), computer generated imagery (CGI), motion capture technology or the ubiquity of video on demand streaming services (VOD) and the ongoing expansion of transmedia(l) story worlds.⁸ Still, apart from ever more elaborate visual effects,⁹ the computer does not seem to be truly involved in “the key ‘creative’ decisions” but rather takes on “the position of a technician” (Manovich 2003: 18).

Although the influences of digitization “are affecting all sectors of the industry”, media scholar Adrian Miles notes, “these changes generally maintain cinema and television as a specific cultural and aesthetic institution, so what has been affected are the means and processes of production, but not the form itself” (2008: 10). Miles calls this “the material hegemony of video and film” (*ibid.*), which lends itself to the production of time-based narrative arts. Film scholar Kristin Thompson (1999) made a similar observation, demonstrating that the industry-standard of the classical narrative feature film has exhibited an enormous endurance and adaptability over the course of technical innovations, from the introduction of sound and color to that of digital imaging.¹⁰ Nevertheless, such a “business as usual” perspective also bears a certain risk because, as film scholar Thomas Elsaesser points out, it assumes that

[t]here have been technological innovations all along, but they have always been absorbed and accommodated, possibly reconfiguring the economics of production, but leaving intact the context of reception and the manner of programming. Digitization does not seem to change this state of affairs. On the contrary, the contemporary industry-standard – the star- and spectacle-driven blockbuster – dominates the audiovisual landscape more visibly than ever [...] (2006: 14).

While monolithic spectacles are, indeed, taking center stage, there are and always have been experimental approaches to the interplay of media technology, form

7 See: <http://filmmakersfans.com/7-types-cameras-used-hollywood-movies/> (accessed 13/08/2017).

8 In their reconsideration of intermediality and transmediality, my colleagues Nicole Gabriel, Bogna Kazur and Kai Matuszkiewicz (2015) make an interesting differentiation between transmedial and transmedia worlds. While identical in appearance, they differ in their origins from an incidental emergence in the first case to a highly planned development in the latter (cf. *ibid.*: 172). Regardless of this difference, the authors argue that digital technologies can be identified as “catalysts for transmedia(l) phenomena” (*ibid.*: 190) and that, under the influences of the digital, transmedial world-building has become “one of the most important strategies of media production” today (*ibid.*: 164).

9 A prominent example would be computer animation and artificial intelligence software packages such as MASSIVE (see: <http://www.massivesoftware.com/> (accessed 13/08/2017)) that are used for automatically generating individually responding agents in crowd-related visual effects.

10 The persistence of the classical narrative form is supported, among other things, by the way screenwriting manuals as well as academic studies describe and canonize Aristotle’s model of unity and order (cf. Cameron 2008: 4).

and content, specifically to challenge the established modes of and dividing lines between production, distribution and reception. There are concepts, for example, that expand film towards the performative engagement and influence of viewers (cf. Shaw and Weibel 2003) including Graheme Weinbren's interactive cinema installations.¹¹ Going beyond the formal experiments of *film noir* and *Nouvelle Vague*, the emergence of narrative complexity in Hollywood, independent and international cinema in the 1990s is another indication of the continuous challenging the canonical storytelling format undergoes (cf. Cameron 2008; Hven 2017). According to film and media scholar Allan Cameron, these complex filmic structures are influenced by the cultural model of the digital database: While they “continue to display the linear form that has long been integral to narrative cinema”, he argues, “these films present themselves as made up of discrete temporal or narrative units, arranged in ways that gesture towards non-linearity” (2008: 5). Film scholar Steffen Hven goes further in positing that narrative complexity allows us to overcome the linear-non-linear dichotomy altogether and rethink the cinematic experience as an “embodied thinking *in action*” (2017: 10, original emphasis). Constituted by the interplay between cognitive, emotional and affective elements, moving images are more than representations that appeal to our need for meaning and sense-making. They also act upon, move and transform us.

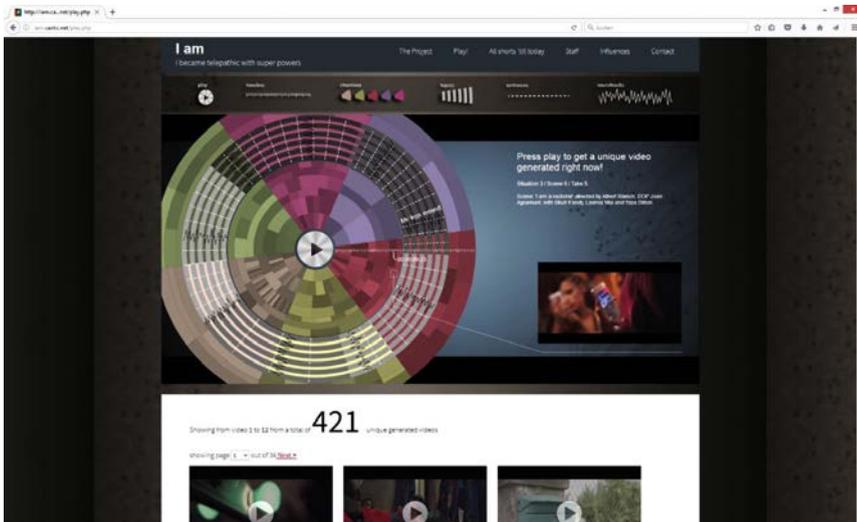


Fig. 1 Screenshot of the *iAm* Web-Based Software Interface. ©2018 Quelic Berga.¹²

11 Cf. *The Erl King* (1986) or *Sonata* (1991).

12 Online: <http://iam.caotic.net/play.php> (accessed 14/11/2017).

Digital media projects not only gesture towards modularity and the dissolution of linear-non-linearity. “‘iAm’ is an online short-film editing engine that generates pseudo-infinite instances of the same story” (Berga *et al.* 2016: 308). The academic experiment explores how the database as fundamental concept of software and computer-based design could work together with the notion of narrative more effectively. Whether consciously or not, “every filmmaker”, Manovich notes, “engages with the database-narrative problem” (2001: 237–8). Although theoretically combinable in a myriad of ways, the large choice of shots accumulated for the production of a film is usually burnt down during editing to an immutable montage. Triggered by a click on the play-button (see Fig. 1), the user interface of *iAm* visualizes how shots are accessed and selected from the database according to a prescribed pattern. The server-software edits them in real time¹³ into “a unique video” (*ibid.*) and encodes the resulting version of the film for online viewing. “This solution”, media artist-scholar Quelic Berga and his colleagues write, “allows the control of the flow and rhythm of the film, ensuring it makes sense and stays coherent, and at the same time maintaining a possibility of the greatest number of combinations” (2016: 315). Another recent attempt of advancing the computer from a mere technician to a central player in the creative process is the short film *Sunspring* (2016). In the context of *The London International Festival of Science Fiction and Fantastic Film* and its 48hr Film Challenge,¹⁴ filmmaker Oscar Sharp and artificial intelligence (AI) researcher Ross Goodwin created the long short-term memory recurrent neural network Benjamin. Benjamin is a particular type of AI that was trained to produce the screenplay for the film automatically based on a data set of online sourced science fiction movies. In *Sunspring* as well as *iAm*, software-based technology is explicitly involved in the creative decisions needed for arriving at a filmic output. Yet, the idea of a more or less final cut linearly fixed in time is largely left intact. When the computer is suddenly assigned such decisive tasks, it remains rather difficult to produce a satisfactory outcome within the framework of causal linearity and the material constraints of film. As Pat Cadigan, one of the judges of the 48hr Film Challenge, so tellingly commented in response to *Sunspring*: “I’ll give them top marks if they promise never to do this again”.¹⁵

13 Generally, real time refers to the direct response of a computer system to a user’s input. This is also known as interactive processing.

14 The contestants of the Sci-Fi-London 48hr Film Challenge are given a set of prompts to write, shoot, edit and finish a short film over a period of two days. See: <http://48hour.sci-fi-london.com/> (accessed 14/05/2018).

15 <https://arstechnica.com/gaming/2016/06/an-ai-wrote-this-movie-and-its-strangely-moving/> (accessed 16/11/2017).

Nonfiction Collaborations with the Computer

The aim of this book is to take a closer look at the margins of the film industry and investigate to what extent ‘the digital’ is, indeed, challenging and changing well-established customs of the trade. If computers are imagined to be universal machines capable of simulating any media including those yet to be invented, why do they still play such minor roles within the creative process of film-making? While used to evermore sophisticatedly emulate the industry-standard of the classical narrative feature, software-based technology could reinvent the (materially informed) poetics and politics of film. As has been outlined above, divergences from linear storytelling are rather scarce in the area of fiction filmmaking. Often, these are avant-garde experiments that transgress established limits but fail to gain traction with a wider audience. Shifting the focus to audiovisual nonfiction, however, reveals a noticeably more nuanced landscape of projects, some of which come strikingly close to Manovich and his envisioned scenario.

Introducing the *VIEW Journal's* special issue on *Non-fiction Transmedia*, media and communications scholar Arnau Gifreu-Castells and his co-editors note that

interactive digital media have greatly affected the logics of production, exhibition and reception of non-fiction audiovisual works, leading to the emergence of a new area called ‘interactive and transmedia non-fiction’ (2016: 1).

This new area comprises a diverse and ever-growing number of filmmakers, artists and research-practitioners who experiment with the possibilities enabled by software-based technologies. Produced in the context of documentary, journalistic and ethnographic praxis, these digital media projects utilize database structures, integrate social media channels, introduce game elements and generate immersive environments with the help of augmentation, 360°, virtual reality (VR) and motion capture technology.¹⁶ They take on different forms, use different types of media assets (from filmed or found footage to computer-generated imagery) and follow different aesthetic principles. They are showcased online, in exhibition spaces, on mobile touchscreens, in cinema theaters or via a head mounted display. Currently grouped under broad headings such as

16 Amongst the projects regarded as most influential are productions commissioned by the National Film Board of Canada (NFB) including the *Highbury* series (2010; 2011), *Fort McMoney* (2013) or *Bear 71* (2013). Other much-discussed works include the *Quipu Project* (2015) as well as the VR documentaries by journalist Nonny de la Peña. For a comprehensive overview, cf. MIT Open Documentary Lab’s website “Docubase”, which provides a curated archive of works “that both exemplify and press the limits of the documentary in its many new forms”: <https://docubase.mit.edu/about/> (accessed 21/11/2017).

*interactive documentary*¹⁷ or *New Documentary Ecologies* (Nash *et al.* 2014), creative works positioned within this rather elusive field share at least two commonalities: 1) They pursue a documentary intent (in the widest sense) and 2) their emphasis lies on interactivity as key principle for an enhanced ‘user engagement’. Accordingly, early theoretical pioneers in the field, Sandra Gaudenzi and Judith Aston argue: “[A]ny project that starts with an intention to document the ‘real’ and that uses digital interactive technology to realize this intention can be considered an interactive documentary” (2012: 125–6). These projects draw on and seek to extend what documentary scholar Stella Bruzzi called *negotiation* (cf. 2000: 4) by involving viewers and other participants more actively in the creative process and outcome (cf. Aston and Gaudenzi 2012: 128; Gaudenzi 2013: 17–8). According to documentary scholar Craig Hight, such formal and thematic negotiations could also encompass collaborations with the very machines that enable and govern this “creative treatment of data structures” (2014a: 246).

Given its continuously evolving and diversifying character, this area of media praxis appears ideally suited to pursue questions regarding the role of software-based technology and its impact on filmmaking. To what extent is computation included in creative decisions and advances from a mere technician to that of a collaborator? In which climate are works distinctive to software culture flourishing and what drives their creation? How have digital innovations, indeed, contributed to a transformation of nonfiction filmmaking? By that I mean a transformation that encompasses not only new and more tightly interwoven modes of production, distribution and reception. I am also referring to significant deviations from the notion of film and the conventions established in accordance with its former material constraints. The publication at hand seeks to address some of these pressing questions from an ethnographic perspective. Specifically, it presents two case studies of and a meditation on a set of practices emerging within contemporary documentary and ethnographic filmmaking. The production of representations committed to the dissemination of knowledge about the world is of particular interest due to the long-standing debates about the limitations and challenges of (audio-)visual mediation. Therefore, special emphasis is placed on the ideologies underpinning digital trends currently surfacing in these fields of media praxis. In what ways are modularity, non-linearity and other digital principles used to generate knowledge about the

17 Probably one of the most prominent terms, *interactive documentary* is commonly abbreviated as “i-docs” and was coined by Sandra Gaudenzi who co-initiated the biennial “i-Docs” Symposium in 2011 and devoted her dissertation to the development of an analytic approach to and taxonomy of *Living Documentaries* (2013). Later, she also introduced the terms “interactive factuals” and “interfactuals”, which, however, did not gain the same traction. See: <http://www.interactivefactual.net/> (accessed 19/12/2017).