

Marek Jancovic; Axel Volmar; Alexandra Schneider

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2019

<https://doi.org/10.25969/mediarep/13663>

Veröffentlichungsversion / published version

Sammelbandbeitrag / collection article

### **Empfohlene Zitierung / Suggested Citation:**

Jancovic, Marek; Volmar, Axel; Schneider, Alexandra: Format Matters: An Introduction to Format Studies. In: Marek Jancovic, Axel Volmar, Alexandra Schneider (Hg.): *Format Matters. Standards, Practices, and Politics in Media Cultures*. Lüneburg: meson press 2019, S. 7–22. DOI: <https://doi.org/10.25969/mediarep/13663>.

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## **Format Matters: An Introduction to Format Studies**

Axel Volmar, Marek Jancovic, and Alexandra Schneider

Wherever there are media, there are also formats. Lisa Parks and Nicole Starosielski recently argued that “our current mediascapes would not exist without our current media infrastructures” (Parks and Starosielski 2015, 1). The same is true for formats. If infrastructures represent the *sine qua non* of media content in the final instance, then formats represent the necessary forms of structuring and delivering media that coordinate between infrastructures and users. Formats typically consist of specific sets of descriptions and requirements of how to arrange and present information—from simple specifications of geometrical dimensions or aspect ratios through the dramaturgical structure of TV shows and radio stations to the morphologies of digital file formats. These descriptions affect the aesthetic and perceptual qualities of media and instruct human users and technological devices how media content should be handled.

One basic effect of media formats is to determine how medial artifacts and information can pass through vast media infrastructures and ensure interoperability over diverse industries and ecologies of media devices. A standardized paper format, such as A4 or US letter, for instance, ensures that the paper you buy fits the printer you own, that the letter you print will fit the envelopes you keep in your drawer, and that whoever receives your letter will be able to file it by fitting it neatly in a folder or filing cabinet. Formats both reflect and stimulate specific media practices, workflows, and other forms of cooperation. Not incidentally, the oldest use of “format” as a technical term stems from the early modern printing industry where it indicated the way a book was folded and the number of pages produced from one paper sheet (Volmar 2017, 15–16; Jancovic in this volume).

In short, formats represent critical nodes of media culture because they mediate between the content and the material constraints of media, the local and the translocal, individuals and collectives, artifacts and practices, and intended and unintended use. Formats can hence be regarded as specific sets of designed and negotiated features and functions that determine the aesthetic configurations of a medium, produce and reflect diverse relations of cooperation, and refer to different domains of application and models of monetization. Despite their considerable

implications for both the appearance and use of media, formats have long remained neglected in media studies. By bringing together a wide range of case studies on the standards, practices, and politics of formats in media culture tied to photography, film, radio, television, and the web, in both professional and amateur uses, *Format Matters* seeks to lay the foundations for the research field of *format studies*.

## What Is a Format and Why Does It Matter?

Discussions of the term “format” are troubled by a semantic indeterminacy. It seems to refer to certain material characteristics of media objects, such as shape and dimension, but can also describe structural or programmatic relationships between individual elements and their organizational logic. It is used to name perceptible formal properties of mediated content and information but can also mean their erasure, as in the verb “to format,” which, in computing, denotes the preparation of an inscription surface or storage medium for writing. Literary scholar Michael Niehaus postulates that “the format stands . . . at the ‘interface’ between medium and form” (Niehaus 2018, 43, our translation). This observation closely resembles Jonathan Sterne’s (2012, 8) tentative definition: “format is what specifies the protocols by which a medium will operate.” It seems that these analytical entities—medium, format, protocol, interface—form a circular field in which concepts can be explained in terms of each other, but nonetheless remain elusive individually. Protocols are intricately connected to practices of formatting. Not far behind their remarkable resurrection in computer science lies their semantic history as media of law and diplomacy: a protocol is the first sheet of a manuscript, and closely related to “codec” (a coder-decoder program) with its origin in literal books, *codices*. To encode or decode something means to translate information from one format into another, for example, from a format in which a video file is stored on a carrier to one understood by the graphics stack of an operating system. The carried information might, in turn, be exchanged via a series of protocols, such as BitTorrent or UDP, which are also standardized descriptions of how two systems can communicate with each other.

But unlike the terms codec, protocol, or interface, the notion of format possesses a strange definitory pliability, seemingly refusing any conclusive *definiens*. Niehaus compares formats with genres—and indeed, in radio broadcasting, format denotes what might colloquially be called the music genre. In the United Kingdom, Ofcom, the regulatory authority of the broadcasting industry, issues broadcast licenses to stations for a specific

format, for example, blues or country. A format change—a reformatting, as it were—requires Ofcom’s approval and is a question of “purchasing a new library of CDs, hiring new disc jockeys, and undertaking an advertising campaign” (Romeo and Dick 2005, 59). Speaking about radio formats of a different kind, cultural critic Gilbert Seldes wrote in 1950:

To make individual programs forgettable, yet hold the audience, means that the format must be the link between one program and another. . . . Drama and the big popular comedy programs are in the upper reaches of radio; lower down, format is purely a matter of packaging, wrapping other people’s goods in new paper. (Seldes 1950, 112)

This understanding of format as a structural link, some kind of packaging or container, is also at play in television. In this area, format denotes a central premise on top of which a number of screenplays can be developed, a standardized dramaturgical armature that can be filled with “content.” In 1966, the Writers Guild of America defined “format” in its basic agreement as a written document with a fixed minimum price of US\$1,120 that sketches out the central characters, themes, or storylines of a serial or episodic narration (Meadow 1970). This sense of the word has entered Europe with some delay, after the gradual introduction of a dual radio and television system in which public and private broadcasters coexist and compete for audiences beginning in the 1980s. It was followed by an expansion of format program television: the organization of broadcasting into repeated, structurally and functionally well-differentiated, thematically similar and increasingly franchised elements, a process that has also been called “formatting” (Meckel 2002).

The metaphor of formats as vessels harkens back to the notion that they are something incidental to the essence, something that is not *the thing proper*, such as a fungible film can that houses an invaluable negative. In computing, this seeming peripherality manifests as the file extension, which is hidden from end users by default like an insignificant appendage. The format of digital files is a syntactic interpretation aid that describes how information contained in the file is encoded and allows it to be used for a specific application or purpose. We also speak of container formats: WARC and MP4 are receptacles that can carry variously encoded audio, video, and subtitle streams and metadata in a single file. The distinction is not always clear, however: television transmission standards like PAL and DVB are often called formats, sometimes protocols, and they are also video encoding methods. Thanks to the informal but practically universally

implemented ID3 tagging format, MP3, too, became both codec and container, capable of carrying multimedia information besides audio.

Finally, format is also a common word for aspect ratio. German telecommunication law knows what is often called the “format protection clause.”<sup>1</sup> It prevents operators of public broadcasting networks from tampering with the “format” of television signals in the widescreen aspect ratio. Historically, such practices of reformatting have been central to the theorization of formats in art history, as we will discuss in a moment. In the sense of “aspect ratio,” the word has been in common use for paintings and photographs, as well as for cinema and television, since their early days.

In an effort to make the term general enough to be conceptually useful, some German studies on media formats have explicitly distanced themselves from its usage in broadcasting, where it primarily denotes a commercial market strategy, as well as from its use as a technical descriptor, such as VHS or MP3. Hans-Jürgen Bucher, Thomas Gloning, and Katrin Lehnen (2010) are interested in “format” purely as an intermediate analytical tier between macro-scale media and micro-scale communicative forms that can encompass both intentional and unintentional communicative structures. But perhaps we must do the opposite, addressing formats precisely at the points where the many dissonant and incommensurable meanings we attach to this term become apparent and thus where, as Susanne Müller (2014, 261) has argued, formats become analytically productive.

## Situating Formats

Despite their definitory fuzziness, formats as cultural objects and formatting as a cultural practice are supposed to serve specific purposes. Formats matter because they have been designed to do so. Unlike media, formats—as their etymology as something that has been given a specific form suggests—are the results of conscious decisions. In our everyday experience, we usually encounter formats as specific formal and aesthetic configurations of media with respect to parameters such as size, aspect ratio, and resolution (see Somaini in this volume). Behind the look and feel of a medium like film, which can be captured in different formats, such as 16mm, VHS, and MP4, however, are hidden not only aesthetic but economic and other strategic considerations that balance the desire for a certain quality with the cost of providing the necessary definition of a medium

1 *Telekommunikationsgesetz* §49.

(see Sterne 2012, 4–5). As mentioned above, formats are also designed to enable (or obstruct) interoperability between devices, often to facilitate task-specific processes. In such cases, the purpose of format is to support tasks and workflows, both professional and domestic, often by means of specially formatted “work media” (Schüttpelz 2017, 37), such as temporary production prints used in film editing or forms and paper files that circulate within administrative institutions as part of bureaucratic procedures (Vismann 2008; also Volmar in this volume).

Next to regulating the properties of technical media, formats can also consist in sets of rules and formal elements that determine the common ground for how social and political interaction and competition can unfold. These can be, for instance, formats for games or sports (see Stauff in this volume), TV shows, discussions, workshops, auctions, or even the course of scholarly discourse (see Michell in this volume) and the preservation of cultural memory (see Jancovic in this volume). Formats can hence be regarded as operative cultural metadata: as pro-grams or “scripts” in the sense of Madeleine Akrich (1992). The potential for enabling playing fields for diverse forms of cultural practice and the production of collective meaning on the basis of comparatively simple grammatical structures makes formats powerful anchor points for the study of social and cultural phenomena in general. Formats further point to specific communities of practice, which can form around one or a series of interrelated formats and which can be addressed as what we want to call *format cultures*. As such, formats pave the way to rich ethnographies of media: some media formats are associated with children, others are favored by experts in their given fields, and yet others are revered by amateurs, collectors, or artists.

Due to their ability to stabilize practices and forge collectives, formats may unfold considerable cultural effects. In a media-saturated world, format specifications represent sites of condensed power, power struggles, and valuable commodities. Format is not an issue to be taken lightly. Entire “wars” have been fought over the economic supremacy of formats. Some of the defeated quickly disappeared into oblivion, while others may enjoy latent but surprisingly long afterlives: one could think of the Betamax tape, whose production only stopped very recently, or the sudden and unexpected comeback of compact cassettes, now more of a collector’s item than a music reproduction format, whose sales have surged in the last year. Therefore, it is important to keep in mind that many formats are collectively and cooperatively designed by private corporations and public organizations according to distinct strategies. These strategies are often directed at governing the flows of information and capital and controlling

acceptable and unacceptable uses of technology and infrastructure (see Hoof in this volume).

One of the first attempts to address formats in the humanities was undertaken by Swiss art historian Jacob Burckhardt. In 1886, Burckhardt discussed the notion of “format” in his lecture “Format und Bild” (format and image). His interest in formats arose from an irritation or even nuisance. The lecture begins with the observation that we become aware of the format of images primarily through reproductions, particularly etchings, because copper engravers and publishers often violate the original aspect ratio of artworks when transforming them into copperplates for printing, and paintings are sometimes cropped so as to fit into a particular spaces. Burckhardt’s criticism of this reformatting leads art historian Stefanie Stallschus to ask: “Does speaking about the format inevitably also mean speaking about media use and viewing habits?” (2013, 74, our translation).

Burckhardt’s stance on formats is ambivalent. He embraces a normative perspective on the history of art: once set by the artist, the format of a painting and all of its reproductions should remain constant. At the same time, he develops an argument that anticipates Derrida’s thoughts regarding the frame by almost a century and makes, moreover, the genuinely media-theoretical claim that “the format provides the separation of the beautiful from all the rest of the room . . . The format is not the work of art, but a condition of its existence” (translated by Freyermuth 2015, 180) because the format “protects art from dissolving into endlessness” (Burckhardt 1919, 254, our translation).

In a similar fashion, art historian David Joselit used the notion of format in his book *After Art* (2013) to describe the relation between works of art and the socio-political, economic, and physical environments that make up the contemporary art world and art market. “The rest of the room,” or the physical space in which an artwork is situated, has been substituted in this approach by the discursive and infrastructural space that surrounds it. In an interview, Joselit states that he regards “format” as

a strategy for activating the space between what an image shows and what an image does. . . . The artwork almost always contains vestiges of what might be called the roots—or infrastructural extensions—of its entanglements in the world. These might include the means of production of the image, the human effort that brought it into being, its mode of circulation, the historical events that condition it, etc. The artwork’s format solidifies and makes visible that connective tissue,

reinforcing the idea that the work of art encompasses both an image and its extensions. (Joselit 2015, n.p.)

Consequently, Joselit is less concerned with the hermeneutics of artworks than with their place, meaning, and circulation within a global system or infrastructure. Sterne (2012) takes a similar perspective on the development of MP3, using one of the most commonly circulated forms of recorded sound as a starting point for a history of digital audio with a focus on the compression and circulation of musical recordings. Like Burckhardt and Joselit, Sterne emphasizes the close relation of formats to their cultural surroundings and infrastructural contexts when he states that “all formats presuppose particular formations of infrastructure with their own codes, protocols, limits, and affordances” (15). It is through their embeddedness and entanglement in infrastructural contexts that formats can unfold their power so effectively. Formats act as gates through which media must pass. Just as format was the condition of existence of art for Burckhardt, it is, for Sterne, what defines a medium’s operation, and therefore the medium itself. Sterne recognizes that formats have “a contractual and conventional nature” since “most crucial dimensions of a format are codified in some way—sometimes through policy, sometimes through the technology’s construction and sometimes through sedimented habit” (15).

The two definitions have similarities, but there is also an important difference between Burckhardt’s approach, which is ultimately normative and prescriptive, and Sterne’s descriptive stance. In her 2015 article “Formatting Film Studies,” Haidee Wasson discusses the usefulness of Sterne’s format theory for film studies. Wasson (2015, 58) argues that the idea of a format offers “a productive instrument to move beyond an ahistorical, unchanging, and thus rather expansive, concept of a medium.” For example, as scholars of nontheatrical, industrial, amateur, and other “useful cinemas” (see Acland and Wasson 2011) have shown, small-gauge film formats have been crucial for the circulation of film beyond movie theatres. Or to put it differently, “format theory is an invitation to continue the project of interrogating what seems natural about our mediated worlds” (Wasson 2015, 59). As Wasson argues, “one of the most productive and compelling shifts in film studies today is that our previously prescriptive definitions of cinema are thankfully giving way to fulsome descriptions of cinema through time and across diverse and complex geographies” (58).

Since formats may still exist independently of the infrastructures they were designed for, such histories and geographies are often obliquely inscribed



in them as residual traces of long-gone standards, business decisions, rivalries, and compromises. The logo of the SD memory card, which superseded disc-based consumer storage media, paradoxically shows an optical disc. This is a lingering reference to its ancestral roots in the Super Density disc format, a precursor of the DVD. This innocuous logo emblemizes how formats are simultaneously receptive to the industrial impulses toward innovation, and yet also reflect institutional indolence. Sterne (2012, 15) maintains that studying these sedimentations of “old infrastructural context,” of culture, knowledge, and practice, can open up new pathways into media history.

In the digital domain, archivists and artists alike have long been concerned with the intricacies of computer file formats and the power they exert over networked visual culture. Works such as photographer Thomas Ruff’s *JPEGs* series (2007) and Ted Davis’s *Codec* (2009) explore the materiality and circulation of digital image formats and compression schemes. Artist and media theorist Rosa Menkman’s 2010 visual compendium of glitches, *A Vernacular of File Formats*, was perhaps the most comprehensive artistic inquiry into the mechanisms of digital still image and video formats. Formats, as both artists and scholars thus recognize, offer productive opportunities for media studies to move past unwieldy conceptual constructs and obsolete periodizations. Instead, they shed light on the neglected capillary threads of media cultures beyond individual media.

## A Plea for Format Studies

In a most general sense, we can summarize by saying that we use the term “format” to describe a coherent pattern of order and composition—a standardized template for the organization of space, time or information according to some rhythmical, structural, aesthetic or volumetric rules. But how can such a warren of meanings satisfy the terminological requirements of so many disciplines and industries? And how can it function as a meaningful instrument of classification? After decades of scattered usage in fields ranging from fine arts through broadcasting to media and consumer electronics industries, for things and practices as dissimilar as TIFF files and TED talks, book sizes and blues radio stations, what technological and epistemic displacements have led to formats now appearing as a field of scholarly interest useful enough to potentially challenge media as the operative unit of media studies?

Friedrich Kittler once predicted that “a total media assemblage based on the digital will eliminate the very concept of medium” (Kittler 1986, 8, our

translation). Sure enough, it took less than 30 years for media theorists (in Germany, at least) to begin diagnosing a crisis of media, and of media studies (Pias 2011; Hagener 2012). Perhaps media research indeed sees itself facing the obsolescence of its conceptual *raison d'être* and is testing other units of analysis to replace it. Or could it simply be that the technological conditions of contemporary academic labor made encounters with formats much more ubiquitous and disruptive than they had been in the past? After all, when a troublesome PDF file or a dataset refuses to be “opened” or a video file resists being embedded in a slideshow, oftentimes it is the format that is the defiant culprit. Many a manuscript has been rejected over improper formatting. Perhaps format matters simply get noticed more.

Whatever the reason, Sterne’s pioneering study on the MP3; Wasson’s urge for “formatting” film studies; Niehaus’s observations on formats, programs, and genres; and a handful of other reflections on formatting by media scholars and art historians (e.g., Joselit 2013; Stallschus 2013; Müller 2014) are part of an increasing number of recent attempts to address questions of format. Among the numerous academic conferences and publications of the last years are the French journal *Pli—revue: Architecture & édition* (2016), which devoted its second issue to “Format(s),” and the conferences “*Vom Medium zum Format*” (From Medium to Format) and “*Bilder trimmen: Politiken des Formats seit 1960*” (Trimming Images: Format Politics Since 1960), which took place in September 2017 at the Ruhr University Bochum and the University of Bern, respectively. An international workshop that led up to the present publication was held shortly after, in December 2017, at the University of Mainz. Given this growing interest, we think it is time for more concerted research efforts that establish format studies as a new interdisciplinary field.

Format studies is not a replacement of media studies or its successor. What we do argue, however, is that a focus on format might indeed provide methodological remedies against the pitfalls of essentialist views and definitions of “media.” Since formats represent “particular historical instantiations” of media (Sterne 2012, 11), format studies might offer ways to grasp large and oversimplified categories, such as analog/digital, in a more differentiated manner and make them appear less as oppositions than as interactions or different and often superimposed configurations of formats. We believe that inscribed in formats we find both radical innovations that transform media technologies and continuities that endure historical ruptures.

Moreover, format studies brings media practices and the strategies for controlling them to the fore, and thus also points to the political and economic dimensions of the often collective creation and ownership of formats. Format studies seems to be particularly suitable for investigating digitally networked media because, as discussed above, it draws attention to infrastructural constellations. This places format studies in proximity to what Lisa Parks and Nicole Starosielski (2015) call “critical infrastructure studies.” Lastly, format studies is timely because the steady increase in new digital formats has been accompanied by an increasing tendency to hide them from users. While an earlier generation of computer users was familiar with a plethora of formats and file extensions, as a consequence of the rise of cloud computing-based business models, few smartphone users today might know which formats the apps, streamed music or video on their device are stored in. This black-boxing should be taken as an imperative for format scholars to begin unpacking formats and their politics. Formats are, after all, one of the main weapons with which media industries conduct their wars and battles. Apart from pragmatic considerations of functionality and use, formats are oftentimes developed tactically and serve to lock users into particular hardware or software environments, or utilized to reinforce geopolitical borders and interests. As such, they demand a critical questioning of the political processes of legitimation that the standardization of a particular format represents.

## About the Volume and Its Contributions

This volume is the result of a sustained collaborative exchange between media scholars representing a diverse array of research interests. Sterne emphasizes that the value of format theory lies not in replacing media studies, but in modulating the questions it asks and in learning to ask them with finer precision. Inaugurating a format studies, then, should not be seen as a bid to establish another insular colony in an increasingly fragmented landscape of humanities and social sciences research. Rather, it is an attempt at discovering new means of travel across this landscape. From the philosophical deliberation of aesthetics to rummaging through dusty boxes in archives, the chapters collected in this volume explore, combine, and experiment with a range of scholarly perspectives and methodological approaches to formats. Included are both highly focused case studies that investigate single formats overlooked by previous research, as well as larger theoretical and historical surveys that seek to identify and understand broader cultural mechanisms of formatting and format-making across history. While the focus remains on audiovisual media broadly

conceived, the variety of approaches results in engaging and, as we believe, productive exchanges between film studies, digital studies, infrastructure studies, production studies, cultural techniques research, media archaeology, bibliography and archival studies, and other fields. Taken together, the contributions collectively chart the various ways in which formats shape and are shaped by past and present media cultures.

*Format Matters* is divided into three sections. The first, “Control, Access, Infrastructure,” examines the way formats function as instruments of both interoperability and gatekeeping. In the opening chapter of the volume, “Reformatting Media Studies,” Axel Volmar collates some methodological and theoretical building blocks for format studies and explores how contemporary media studies may benefit from the study of formats. Volmar opens by developing a heuristic taxonomy of formats from which he deduces a couple of common functions and affordances of formats. He lays out three methodological and theoretical entry points into the study of format that consider how formats relate to or originate from practices, how they facilitate and enforce forms and conditions of cooperation, and how they can be used for conceptualizing media-historical change by situating them within broader media-historical dynamics of specialization and generalization.

Wanda Strauven’s chapter “Let’s Dance: GIF 1.0 versus GIF 2.0” studies how the Graphics Interchange Format (GIF), a defining feature of the recent World Wide Web, became actively used in a large variety of applications: from time-lapse weather maps to grassroots net design, from communicative strategies on social media to genetics and DNA storage. By tracing these multiple archaeologies through time, Strauven discusses how the GIF can best be understood as the active counterpart of a container, that is, as a tool.

In “Formats and Formalization in Internet Advertising,” Ramon Lobato and Julian Thomas carry on the thread of web-specific formats. The chapter discusses the outcomes and prospects of attempts to stabilize formats in internet advertising, a media sector characterized by increasing automation, fragmentation, and internal conflict. From the flashing banner ads of the 1990s to today’s auto-playing videos, internet advertising has long been seen as disorganized, highly fluid, and sometimes unconsciously exploitative. One response has been the ongoing work of industry bodies on standardizing internet advertising formats, a project that promises greater interoperability and consumer protection.

Florian Hoof's chapter "Liveness Formats: A Historical Perspective on Live Sports Broadcasting" investigates strategies to control the circulation of cultural goods that emerge out of economic necessities to standardize and control the distribution of live broadcasting. It traces the history of liveness format control, starting at the end of the 19th century with early sports bulletin boards, fight films, and theatre television, and continuing with the shift to pay TV, pay-per-view, and contemporary forms of over-the-top streaming services. Drawing, in particular, on the history of sports broadcasting, Hoof defines and lays out two concepts of control. The first, "fortifying," tries to control live broadcasts by protecting the medium that stores the signal; the second, "infrastructuring," tries to dominate the distribution network used to circulate or distribute live broadcasts.

The second section, "Archaeologies of Success and Failure," centers on the circulation of compression formats in television, film, and photography. Some of these formats, such as the sports highlight, have been so historically successful that they are hardly recognized as formats that once had to be established, whereas others have long been forgotten. Markus Stauff's contribution on "Formatting Cross-Media Circulation" takes sports highlights as an example to discuss how formats and formatting enable the circulation of content across different media. The chapter argues that the "spreadability" of selected moments from sports events, one of the most consistent elements of cross-media culture for over a century, results from the modularity and scalability of the highlight format. Sport allows for and even systematically triggers various representations of the original event. As a format, the sports highlight is highly constrained through copyright claims and regulatory policies, and yet it still offers flexibility: it can be adapted to different technical infrastructures, a number of industrial strategies and, of course, fan activities. Conceptually, this chapter uses the sports highlight to question a rigid, materialist understanding of formats and formatting. Taking its lead from the television industry's global trade in formats as local adaptations of content, Stauff argues that formats matter because of the continuous formatting processes at the intersection of technical, economic, and aesthetic dynamics.

Alexandra Schneider's chapter "Viewer's Digest: Small Gauge and Reduction Prints as Liminal Compression Formats" uses format studies as a framework to discuss reduction prints as a historical practice for the distribution of films. Similar to contemporary compression formats, small-gauge reduction prints had a key purpose in facilitating the circulation of moving images in nontheatrical venues. Rather than treating reduction prints as a mere oddity in the history of cinema, Schneider proposes to consider them

as a “liminal format”: liminal in the sense of being not there yet or transitional, a kind of *format de passage*. The chapter aims to further our understanding of the complex historical dynamics of formats and particularly of the continuities and discontinuities between analog, electronic, and digital media.

In “Formatting Faces: Standards of Production, Networks of Circulation, and the Operationalization of the Photographic Portrait,” Roland Meyer asks how formatting as a repeatable and standardizable pictorial practice became productive in the field of visual culture. Focusing on three “primal scenes” of formatting images of human faces, from early popular portrait photography and standardized police photography to the beginnings of Facebook as a platform of image circulation, he shows how the introduction of new pictorial formats not only changed the conditions of pictorial production but also helped to establish new practices of distributing and connecting pictures, thus fostering new logistics of images.

The section concludes with Erika Balsom’s “Instant Failure: Polaroid’s Polavision, 1977–1980,” an excavation of the Polavision format. In 1977, at the dawn of the home video era, Polaroid Corporation introduced this proprietary film format and apparatus promising instant development and playback. The system was a devastating commercial failure and caused Polaroid major financial losses before its discontinuation in 1980, but during its brief existence it was used by prominent figures such as Charles and Ray Eames, Andy Warhol, and Stan Brakhage. Polavision was a social medium *avant la lettre* in that it was a system grounded in prosumer activity, relationality, and feedback rather than in the quality of the films it yielded. And yet, this emphasis ran up against significant limitations. In line with the archaeological interest in failed media, this chapter recovers the curious episode of Polavision’s instant movies, finding in this largely forgotten enterprise a way to insist on photochemical film as a family of formats rather than a single medium.

The third section, “Formats in Transition,” looks into the malleability, inertia, and dynamism of media formats and investigates moments of irritation between them. In “Fold, Format, Fault: On Reformatting and Loss,” Marek Jancovic examines how format standardization and cultural practices of reformatting produce conflicting relationships with history, memory, and loss. By addressing examples of reformatting across a number of historical contexts and industries—the folding of books, the microfilming of secret state documents, and the format migrations routinely performed by audiovisual archives—the chapter contemplates

the political dimension of formats. Grounding a theory of formats in the study of paper and bookmaking, Jancovic argues that formats need to be understood not as stable and self-evident properties of things, but as dynamic practices rife with loss, friction, and incompatibility.

Antonio Somaini's "The Screen as 'Battleground': Eisenstein's 'Dynamic Square' and the Plasticity of the Projection Format" deals with three different meanings of "format": the size of the photosensitive area of a frame on celluloid film, the aspect ratio of a projected image, and the way in which a digital moving image file is encoded for storage, processing, transmission, and display. The chapter presents a close analysis of Sergei Eisenstein's seminal essay advocating the plasticity of the film format, referring to a series of examples from Eisenstein's own films and from artists and film directors such as László Moholy-Nagy and Fritz Lang.

In their chapter "HD's Invention of Continuity and SD's Resistance? A Historiography of Cinema and Film to (Be)come and Formats to Overcome," Oliver Fahle and Elisa Linseisen assume a post-cinematic perspective to reflect on media change and its limits. Taking into account cinema's genuine ability to develop and transform, Fahle and Linseisen advocate for a concretizing, historiographical distinction between the persistence and resistance of cinema, delineated by the two concepts of "medium" and "format." Because formats rely on specific media-technical surroundings, the persistence of a medium is based on the resistance of its formats. By closely examining the intersection of two digital formats—high-definition digital imagery and standard-definition digital formats—Fahle and Linseisen propose to write a history of cinema and film to come, in correlation with a history of formats to overcome.

Kalani Michell's chapter "Pod Fictions" concludes the volume with a rich and multifaceted analysis of the academic podcast *Aca-Media*, sponsored by the Society for Cinema and Media Studies and its official publication, the *Journal of Cinema and Media Studies*. Michell uses this case study to consider how media studies as a discipline values and creates hierarchies between various academic formats. Ultimately, the close examination of this particular online outgrowth of the organization's scholarly journal within the context of recent radio, podcast, interface, and institutional branding scholarship reveals not only the meaning of a new media format but also a portrait of a discipline in transition—media studies at a time when it is itself in the process of reformatting.

## Acknowledgements

A majority of the chapters in this volume have evolved out of papers presented at the interdisciplinary conference “Format Matters,” held at the Johannes Gutenberg University Mainz in December 2017, under the auspices of the German Research Foundation and the Johannes Gutenberg University Mainz Internal Research Fund. A number of additional papers were first presented at “Vom Medium zum Format” in September 2017 at the University of Bochum. We thank all the participants at these conferences for the inspiring and engaging discussions and suggestions.

We thank our copy editor, Kyle Stine, whose critical commentary and background in film and media studies contributed greatly to the volume. Simone Nowicki and Nicole Braida both supported the project, as did all the students who discussed format matters with us in seminars and beyond. We also express our gratitude to meson press for its vision and commitment to think scholarly publishing differently, beyond corporate logics.

This publication has been partly funded by a project of the Collaborative Research Center “Media of Cooperation” (SFB 1187 *Medien der Kooperation*, project A01) at the University of Siegen.

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