



Introduction to *Cinema and Technologies of Movement*

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Throughout cinema's transformations across the twentieth and twenty-first centuries—from the earliest reels to current media formats of all types—few characteristics remain as intrinsic as inscribed kinetic movement. Kinetic movement is an index of change in physical space. It is velocity, acceleration, trajectory, force and momentum. It encompasses both movement *on* screen and movement *of* the screen. Kinetic movement is concrete, material, and felt. While movement can be understood more abstractly through the concepts of processual change and transformation, this special issue of *Synoptique: An Online Journal of Film and Moving Image Studies* is focused on the kind of movement that puts the “cine” (originally “kine”) in cinema. Our interest lies in locating what is historically and conceptually specific about kinetic movement, and to observe its persistence over the course of cinema's history, even amidst so much apparent change.

This journal issue takes as its point of departure the identity of cinema as a technology of kinetic movement. This approach encompasses a variety of aspects of recording, manipulating and projecting images and sounds, which expose the links between kinetic movement and image technologies. For example, it encompasses the intermittent action of the Geneva drive or Maltese cross mechanism within the camera, which allows the celluloid to move at a constant speed, stopping for an instant to allow each photogram to be captured. It also includes the equivalent operation within the projector which ensures the derivations from one frame to the next remain on screen long enough to produce the illusion of movement for spectators (including in cases such as animation, where there was never any original movement to *re-produce*). It further includes the technological impacts of cinema on the representation of moving bodies, such as when the camera is under- or over-cranked (creating fast or slow motion, respectively). Finally, though by no means exhaustively, cinema's technologies of movement include the myriad devices which allow for the camera to perform movements of its own, even when, in the virtual domain, there is no physical camera to speak of.

Although this may appear to be a narrow point of departure, focusing on cinema as a technology of kinetic movement opens up a variety of questions. What is movement in cinema, and what exactly does the moving? How is movement represented and perceived? How does cinema's technological approach to movement lend itself to other practices? How has the question of movement been taken up in film and media studies scholarship? The articles in this issue take up these questions by offering a range of historiographical, technical, and

phenomenological approaches to the study of movement in cinema's socio-technical environment.

Our desire to study movement through the lens of technology is inspired by several recent endeavours in film and media scholarship. Once relegated to specialized and industrial publications, the topic of technology has recently been taken up by a wide variety of film and media scholarship. Much of this work is indebted to the legacy of Friedrich Kittler's study of technical media as the basis of knowledge and the many forms of research it has inspired, such as media archaeology.¹ Cinema as a technology has also become the focus of international conferences, research groups and publications over the last several years. The *Impact of Technological Innovations* conference held in Montreal from November 1-6, 2011—jointly hosted by ARTHEMIS, GRAFICS, and the Permanent Seminar on the Histories of Film Theory research groups—saw film scholars converge to discuss film technologies. Similarly, TECHNÈS, an international partnership of researchers including André Gaudreault, Rick Altman, Thomas Elsaesser, Martin Lefebvre, and Tom Gunning, theorizes the history of film techniques and technologies in both their earliest forms and most recent incarnations.² Similarly, recent edited volumes have given both Anglophone and Francophone scholars a variety of interpretations of cinema's technologies, including Annie van den Oever's *Technē/Technology* (2014), and André Gaudreault and Martin Lefebvre's *Techniques et Technologies du Cinéma* (2015). This issue of *Synoptique* continues the conversation by focusing specifically on the idea of movement, while avoiding techno-centric assumptions by situating cinema within its social and historical contexts.

We begin with four essays which engage directly with the issue's focus on cinematic movement and technology: Gert Jan Harkema's contribution "'Move as if Alive': The Kinematograph as Unstable Technology of Movement and its Impact on the Spectator" opens the issue. "Move as if Alive" was the headline of a *Chicago Tribune* newspaper article dating from 1897, which introduced one of the early cinematographic technologies, Edward Amet's magniscope. The phrase serves as a point of departure for Harkema, who situates the eponymous article in the local and historical context of late nineteenth-century Chicago, a city enamoured with new technologies and early cinematographic devices (encompassed under the term "kinematograph"). Harkema identifies two prevalent notions of movement at the time—as mechanical-dynamic, and as post-mechanical or energetic—which inform our understanding of contemporaneous reactions to the kinematograph. Period sources from other Chicago publications paint an insightful portrait of how audiences of the day may have understood and related to visual technologies of movement.

¹ See for example Wolfgang Ernst, *Digital Memory and the Archive* (Minneapolis: University of Minnesota Press, 2013) and Erkki Huhtamo and Jussi Parikka, eds., *Media Archeology* (Berkeley: University of California Press, 2011).

² ARTHEMIS (Advanced Research Team on History and Epistemology of Moving Image Study), GRAFICS (Groupe de Recherche sur l'Avènement et la Formation des Institutions Cinématographique et Scénique) and TECHNÈS (International Research Partnership on Cinema Technology) are based in Montreal, and include scholars from Concordia University, McGill University, Université de Montréal, and Université du Québec à Montréal, as well as numerous international researchers. Their recent publications include Thomas Elsaesser's *Film History as Media Archaeology* (Amsterdam: Amsterdam University Press, 2016) and Marc Furstenu, Bruce Bennett, and Adrian MacKenzie's *Cinema and Technology: Cultures, Theories, Practices* (London: Palgrave Macmillan, 2008).

Guest editor Philippe Bédard pens our second article, “The Protean Camera,” picking up on an idea touched on by Harkema, namely the role of the camera operator in the creation of cinematic movement. This essay adopts a techno-aesthetic approach to the study of camera movement technologies and historical techniques by analyzing the kinds of work that go into producing particular camera movement effects. Moving beyond simple technical or formal analyses of technological devices such as the Steadicam or the virtual camera, Bédard addresses the protean, or mutable nature, of camera movement technologies. He does so by questioning what various types of camera movements in narrative cinema can tell us about the devices that produced them and their operators, whose work remains concealed behind the screen. Bédard shows how cinema can reveal the work of movement and the technology that makes it possible through its uses of different modes of movement.

While Bédard tackles the technical production of movement, Jennifer Ann Zale investigates the visible production of movement on-screen by pre-revolutionary Russian ballerina-turned-film-starlet Vera Karalli. Zale draws on a significant number of archival sources in “Ballet’s Influence on the Development of Early Cinema and the Technological Modification of Dance Movement,” exposing a connection between the movements performed by dancers in the classical ballet tradition and those of silent film performers, originating in pantomime. At a time when cinema was a mere fairground attraction, its association with well-known ballet talent was intended to generate popular appeal and bring cinema into the mainstream. While the compatibility between dance movement and the technology of cinema was debated at the time, Zale demonstrates how filmmaking techniques adapted to accommodate the earlier art form. This briefly created a kind of cinema that was unique in its representation of movement, as dancer and camera learned to work together, thus laying the foundations of a particular pre-revolutionary Russian film style.

In “Seeing Aspects of the Moving Camera: On the Twofoldness of the Mobile Frame,” Jordan Schonig looks to experimental cinema to question phenomenological accounts of the moving image, which theorize the perception of movement with respect to a camera position. By challenging the camera’s anthropomorphism in light of Richard Wollheim’s notion of “twofoldness” in picture perception, Schonig seeks to expose the limits of what spectators might understand as camera movement, and how unique viewing conditions can affect our perception of movements on screen. The strength of this article lies in its demonstration of our ability to feel compelled by the moving camera. Experiencing movement perception as a technological and aesthetic effect of camera movement is one of several aspects of the perceptible image. The comprehensive survey of theories on camera movement Schonig presents offers a strong foundation for continued engagement with the medium’s technological production of movement.

Following the four essays dedicated to technologies of movement, the issue’s peer reviewed section concludes with an article outside of this thematic focus (“hors numéro”). Hrishikesh Ingle’s “Early Marathi Cinema: Prabhat Studios and Social Respectability” traces the origins of one of the first regional cinemas in India. Using a combination of biographical accounts, archival sources and textual analysis, Ingle builds a picture of how Prabhat Studios cultivated a specifically regional Marathi cinema. He suggests that two key components of Prabhat Studios’ early success were its ability to mobilize regional forms of performance and artisanship for cinematic use. The studio thus assumed a social responsibility for cultural preservation, and acquired value through both its thematic content and extra-textual promotion of local culture. The regional specificity of Prabhat’s sound cinema shows that the modern national

Hindi-Urdu cinema did not simply overwhelm local specificity, but that spaces for mediation were also allowed to form.

We round out our investigation of cinema's technologies of movement with several reviews of recent academic contributions to the field and public exhibitions on the subject in the non-peer reviewed section of the issue. Kyla Rose Smith reviews *Designing Sound: Audiovisual Aesthetics of 1970s American Cinema* (Jay Beck, 2016), which circumvents the visual bias in film studies in his re-reading of New American cinema. Smith traces how Beck casts this period of American film history in a new light by examining film sound and creative labour. She also critiques his gendered conceptualization of creative labour, which emphasizes the contributions of male directors over other forms of creative labour, and women's participation within the movement. Lola Rémy's review of *Sur le Film* (Philippe-Alain Michaud, 2016) offers another way of re-reading film history and a unique take on cinema's connection to movement. Rémy offers anglophone readers a rare glance into the thinking of French author Philippe-Alain Michaud, who proposes a reconsideration of film in this book, detached from the classical apparatus of projection. Instead, Michaud discusses an expanded perspective of what it means to think of "moving images." Finally, Oslavi Linares Martinez reviews *Animated Landscapes: History, Form and Function* (2015) to offer a different perspective on the moving image from the field of animation studies. This volume, edited by Chris Pallant, exceeds prior discussions of settings and background in animated film, to engage with theoretical questions relating to animation's particular relation to space and movement. Finally, guest editor Jordan Gowanlock reviews *Archaeology of the Digital*, a three-year exhibition project at the Canadian Centre for Architecture (CCA), in Montreal. In a media archaeology-style approach, the exhibit offered visitors the possibility of viewing objects tied to different steps of development for twenty-five specific projects. Linking this exhibit to the issue's theme, Gowanlock insists on the forms of animation and stasis that traverse the projects, and offers a unique reading of the theoretical significance of the technologies of computer simulation emphasized in *Archaeology of the Digital*.

When making their way through this issue, readers should keep in mind the importance of contextualizing scholarly analyses of technology, particularly those pertaining to cinema, within the epistemic traditions adopted by the various authors. Writing on technology in the context of cinema requires us to consider connections to other elements within its media ecology, as well as to social and historical contexts. The authors of the following texts have made great efforts to discuss the implications of cinema and technologies of movement as they relate to other practices, in ways that inform our understanding of various aspects of the moving image. Likewise, the editors of this issue would like to invite readers to think of movement in cinema and its ancillary technologies in ways that may reach beyond their immediate purview, and, we hope, discover something new.

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