

BOOK REVIEW

Jonathan Finn, *Beyond the Finish Line: Images, Evidence and the History of the Photo-finish*

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From horse racing and track athletics to skiing and cycling, the photo-finish is ubiquitous in elite sport. Although interpretation of the resultant images provokes occasional controversy, the technology itself is seldom questioned. How these circumstances came about is the subject of Jonathan Finn's fascinating study *Beyond the Finish Line*. Finn blends science and technology studies, social history of sport, business history, media studies and history and theory of photography, in a wide-ranging account of a photomechanical technology whose use has become commonplace and whose effects become ever more significant as the commercial stakes of sporting success ramp up.

Finn traces the emergence of finish-line photography to the last decade of the nineteenth century. It was stimulated by the rise of illustrated print media and their demand for visual spectacle, the equestrian gambling industry and its demand for reliable placement of runners, and a more general modern drive towards regulation and documentation. Two linked assumptions underpinned finish-line photography. The first was that there was no such thing as a dead heat. The second was that the human eye was fallible. The illusion of the dead heat could be dispelled by deploying photographic technology to compensate for human vision's inadequacies. Photography's potential for deciding horse races was energetically advocated by the British-born, US-based photographer John C. Hemment – a largely forgotten figure in the history of photography whom Finn rescues from unjust neglect. In line with a more general trend within modernity to standardize and regulate sporting pursuits, Hemment established standard conditions for finish-line photography, including installing a white background with a black line flush with the finishing post and a photographer perpendicular to the finish line. However, the objectivity that photography promised was undermined by the fact that the shutter still had to be tripped by a human operator. In practice it proved extraordinarily difficult to capture the precise millisecond at which the finish line was crossed.

The richest chapter of Finn's book traces early twentieth-century developments in finish-line technologies. Contemporaries of Hemment had filed patents that integrated timing devices with photography, inaugurating a drive towards full automation that included faster shutter speeds, advancements in film development processes, and the introduction of photoelectric cells (which enabled automatic shutter release as horses or runners broke a beam of light projected across the finish line). Although the supplanting of the human eye by the camera proceeded unevenly and messily, a commentator could confidently announce in 1930 that 'in all cases where the positions of the contending horses are in any doubt when they pass beneath the wire, the camera, and not the

placing judges, is now the arbiter' (p. 70). However, problems persisted, and the evidentiary value of finish-line photography was still debated. This remained the case when officials began to use moving images to determine placings. For even at a frame rate of 360 frames per second, a horse at full gallop would cover 1.8 inches between frames, and this interstitial space could be decisive.

The solution was Lorenzo del Riccio's slit camera, which recorded continuously as light entered the apparatus through a slit aperture and was imprinted on film running at a parallel speed to the race participants. Rather than capturing a defined space in a moment of time, the slit camera records 'the passing of time through a small, fixed space' (p. 92). The result is not a finish-line photograph, but a genuine 'photo-finish' in which the finish line is everywhere, and what we see spatially distributed is actually the temporal distribution of the athletes as they cross the finish line. The slit camera is described at various points as the culmination of finish-line technology, suggesting a teleological narrative at least at the level of technology. But that is not the whole story, and Finn's remaining chapters deal with the commercial and human aspects of camera and timing technologies.

Chapter 4, 'The business of the photo-finish', largely eschews the conceptual and methodological concerns of the other chapters and offers a straightforward narrative of the OMEGA company's involvement in the Olympics. It feels like a bit of an outlier.

Chapters 5 and 6 return to the key issues that animate the study throughout. Notably, Finn reminds us that the photo finish is simply a 'possible form of knowing' (p. 166), and that the assumption that ever more precise timing can accurately measure athlete performance is a fallacy because of the limitations of the human body and dimensional fluctuations in physical environment. The dead heat, which photo-finish technology was meant to eradicate, may not be such a bad thing after all.

In his introduction, Finn frames his understanding of objectivity and visual evidence in terms of Lorraine Daston and Peter Galison's well-known account. Finn argues that the history of the photo finish repeats, in compressed form, the epistemic shifts that Daston and Galison see as informing conceptions of objectivity since the eighteenth century. In this model, 'truth to nature' (dependent on the knowledge, eye and representational skill of the expert), 'non-intervention' (dependent on mechanically produced images), and 'trained judgement' (dependent on the trained viewer as a reliable interpreter of the mechanically produced image) succeed each other (even if overlaps and recursions exist within the overall schema). This has the singular advantage of enabling Finn to concentrate not on the technology alone, but on the ways in which objectivity and visual evidence are constructed, contested and debated via shifting relationships between the technical apparatus and the producers and users of images. At times, however, Finn's subject matter seems to suggest revisions to the Daston-Galison model. Teasing out the limits as well as the value of Daston and Galison for an understanding of photo-finish technology would have added a further dimension to Finn's study. For example, the extent to which the expertise of a photographer releasing a camera shutter is comparable to the expertise of a Linnean biologist hand-drawing a specimen is not self-evident. And even when Finn's approach works most persuasively, as in the discussion of the role of human experts in deciphering photo finishes, things remain vexed: in the Tarmoh-Felix dead heat in the US Olympic trials of 2012, the race judge Roger Jennings (one of only seven such experts accredited by the IAAF) first used his expert knowledge to interpret the results one way, then revoked his original decision on the ground that it involved his subjectivity (thereby having recourse to the non-interventionist understanding of objectivity).

That said, this is a highly original, absorbing book. It is written with exceptional clarity, and excavates a largely forgotten strand in the history of the technical media and subjects it to rewarding interdisciplinary analysis. It will appeal to scholars of the

various disciplines within which it intervenes, but also to sports practitioners, administrators and enthusiasts more generally. We now know what we are looking at when we see a photo-finish and understand it as the outcome of a contested history of practice, an artefact in need of interpretation, not as an incontrovertible fact.