EDITORIAL: MEDIA, SPORT, AND TECHNOLOGY

Marcio Telles
Carlos d'Andréa
Markus Stauff

Media, sport, and technology. These three words name aspects that have significantly marked everyday experiences since the 19th century. More than that, these three aspects are intertwined and can be understood as both key examples and actual drivers of modernization and consumer capitalism. Sport and the press (and other media) developed together in the West during that century. It is no coincidence that the same institutions that spread print capitalism in the late seventeenth and early eighteenth centuries – the Church, the Army, public schools, and universities – were also responsible for the development of modern sports practices some decades after (BOYLES; HAYNES, 2009). Additionally, the development of athletic competition, the standardization of regulations, the measurement of and the public interest in competitions that exceed local events are all equally dependent on railroad traffic, the electrical telegraph and the mass press (WERRON, 2010). In his contribution to this dossier, Markus Stauff argues that even Big Data, along with societies' relentless push toward quantification, can be traced back to the origins of modern sports.

As Allen Guttmann (1978) argued, sports' entanglement with the logics of modernization culminates in its orientation towards rule-based competition and especially the "quest for records". Technological innovations play an important role here: Technology often supplies the constitutive framework of the activity (through balls, sticks, bicycles, or stop watches etc.), adds specificity and regularity to different types of

sports. Advanced materials have transformed sportswear, with innovations like moisture-wicking fabrics and aerodynamic garments significantly enhancing performance and enabling record-breaking achievements in every Olympic cycle. Additionally, digital technologies, such as GPS tracking and wearable sensors, provide athletes and coaches with real-time data, refining performance monitoring and strategic decision-making, thus making athletic exercise increasingly precise and micromanaged. Overall this contributes to a technologized approach to human bodies and the comparison and ranking of their performances which get boosted through improved equipment, systematic training and dietary regimes, and not least technologically enhanced observation (FOUCHÉ, 2017; LOLAND, 2002).

Just as essential, media technology is used for ruling and judging competitions, purportedly to resolve uncertainties, prevent biases, and overcome deficiencies inherent in human vision (COLLINS; EVANS, 2008). Although high-tech gadgets like Hawk-Eye and VAR are usually associated with a hypermediatized and spectacularized age of sports, such employment of media technology is as old as contemporary sports, as illustrated by the photo-finish that was used for horse racing at the end of the 19th century (FINN, 2021). Not least, technologies allow for recording, scrutinizing, reporting, and sharing the course of events and the feats of athletes. While this media entanglement with technology is more intense and more visible in some competitions (e.g. Formula 1, track and field, American football, sailing), it is a basic feature of all sports that is closely related to sports coverage of mass media and thus an element of the mediatisation of sport – its deep interrelation with media logic (JANSSON, 2015). However, it is worth noting that there is no simple linear transformation of sports by modern communication systems and technologies.

Likewise, a sample of examples can illustrate how sports plays an important role in the emergence of technologies and in the evolution of media industries (BOYLE; HAYNES, 2009). Muybridge's motion analysis

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and some of the early films created by Thomas A. Edison to test his kinetoscope included sports as a theme (GAMACHE, 2010). Sports' standardized events were considered pertinent to test and showcase radio's capacity for live and outside transmissions. Sports have shaped television's cultural forms (e.g. its mix of serialized schedules and special events) and its industrial structure (sponsoring and advertising), and its global economy (via broadcast rights packages) since its inception in the 1930s (JOHNSON, 2021). The 1936 Munich Olympics and the 1937 Wimbledon tennis championship created attention for early television. Since then, sports pushed television's formal and audiovisual advancements (such as instant replays, slow motion, and on-screen graphics). Additionally, the "built-in audience" of sports contributed to television consumption across various settings, from bars and public places, to portable screens and high-definition environments.

Since decades, the sports department in newsrooms has been a testing ground for new ideas and technologies (ENGLISH, 2011). Most recently, for better or worse, sports with its well established criteria for highlights are at the forefront of news automation (GALILY, 2018; KUNERT, 2020), In the 20th century, sports were most intensely entangled with television, but it keeps impacting the aesthetics and economics of other media too: social media capitalize on sports' liveness and controversies and, ironically, became places where not only the performances of athletes but also the ones of refereeing technology becomes discussed, criticized or ridiculed (D'ANDREA; STAUFF, 2021). Sports video games, fantasy games, and esports create new groups of fans. While sports gambling is as old as sports and was an important driver of its emergence in the 19th century (COLLINS 2013), online betting on dedicated apps is one of the "innovations" that are increasingly shaping the sports experience transforming the already existing fusion between entertainment and financialization.

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Thus, the deep historical interrelation between media, sports, and technology is impactful far beyond sports. It is a field that is symptomatic for wider tendencies of technologization and mediatization. Throughout its history, sports offered a fertile field for the negotiation of modernity and power relations in different nations or regions (PETERSEN-WAGNER; LUDVIGSEN, 2022). As such, tracing the entanglement between sports, media and technologies offers insights for dynamics of technological innovation and implementation, for the tension between expert and popular culture. A closer look at sports could thus allow us to ask broader questions about sociotechnical imaginaries and human 'nature' (MAGDALINSKI 2009).

Looking at the Brazilian context, one could argue that there is widespread acceptance and active engagement with technological innovations, particularly in sports. From earlier technologies like "Tira-Teima" in the 1980s (D'ANDRÉA; TELLES; OLIVEIRA, 2022) to recent advancements such as goal-line technology in football matches, these innovations have become ingrained in conversations among Brazilian fans, enriching the sports folklore. The strong adherence to this cause is associated with demands for justice and transparency in sports, but it also brings up discussions about the loss of a supposed authenticity in the matches of the past.

Motivated by this long-term and rich articulations between sports, media and technologies, this special issue aims to put in dialogue a diverse body of researchers based in Brazil and abroad.

We open the edition with an updated version, in Portuguese, of an article published by Markus Stauff in 2018 at "TMG - Journal for Media History" journal. In **"Uma cultura de competição: a contribuição histórica do esporte para a dataficação"** (originally, "A Culture of Competition: Sport's Historical Contribution to Datafication"), Stauff discusses how sports have historically contributed to the broader trend of datafication in contemporary culture. The author traces this evolution from the 19th century, when sports began producing and

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publicizing data, to the present day's increasing use of big data in sports media and performance analysis. The paper argues that sports have played a crucial role in popularizing data-based competition and legitimizing the use of big data. By analyzing both historical and modern developments, the article highlights sports' symbolic role in shaping public perceptions of data, competition, and performance evaluation across various domains. This article was translated by Marcio Telles.

In the contribution **"The paradox of mediatisation: why do decision-aid technologies improve fair decisions but reduce the enjoyment and emotional involvement of football fans?"** Christiana Schallhorn explores the introduction of the Video Assistant-Referee in football. She considers the VAR as an example for what she identifies as a more general "paradox of mediatization": In sports, new technologies are regularly implemented to guarantee a better and more precise account of the competition. This aims not only at a more objective evaluation of the competition by referees but also at a more comprehensive and transparent spectator experience. However, while improved visibility can lead to better decisions it interferes with the emotional experience of the game. Additionally, even decision-aid technologies do not offer absolute accuracy, and human error can still occur. Even more, the implementation of technology leads to more data and thus allows for more diverging interpretations. Rather than simplifying a decision, this can add ambiguity to a scene and make the final decision more difficult to accept. In a vicious circle this seems to create the need for more advanced technologies to clarify the controversial situation. As such, sport is a helpful example, Schallhorn argues, to think through the status of rationality, emotions and technology in contemporary society.

The discursive roles of 3D animations in the script of the semi-automated offside technology (SAOT) is the topic explored by Eduardo Lopes de Oliveira (UFMG) in the following article (**"Papéis discursivos**

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das animações 3D da tecnologia semi-automatizada de impedimento na Copa do Mundo FIFA 2022"). The author explores a controversial SAOT use in the FIFA World Cup 2022 to discuss how the visual discourse is used to legitimize the decisions of the football's authorities.

Written by Anderson David Gomes dos Santos (UFAL/UEL) and Rodolfo Rorato Londero (UEL), the next article - **"Consumo audiovisual de jogo de futebol ao vivo: ponderações a partir da torcida de clubes alagoanos" -** aims to critically understand the hypothesis that younger people are less likely to watch live soccer matches using traditional models such broadcasting. The study combines a theoretical discussion on transformations in the audiovisual market in broadcasting-telecommunications-internet convergence based on studies of the Political Economy of Communication with a quantitative and exploratory research based on a statistical method for analyzing data by age group in the state of Alagoas. It is understood that there is a need to consider the issue from the point of view of inequalities.

Employing a methodology grounded in Digital Humanities and Cultural Analytics, Carlos Roberto Gaspar Teixeira (PUCRS) and Roberto Tietzmann (PUCRS) investigate aesthetic and visual patterns of 87,730 images published by Olympic athletes on Instagram (**"Além do esporte: Uma análise visual das publicações dos atletas olímpicos no Instagram")**. The empirical results revealed the existence of two visual aesthetic threads: the sports-related and the "instagrammable". One of the findings is that most of the athletes' posts are not directly related to sports, but to everyday life.

The transformations of radio commentary of football matches nowadays is the starting point of the article written by Ciro Götz (UFPel), In **"Caras e vozes do gol: narradores radiofônicos tradicionais frente às câmeras", the author investigates** the posture of two Brazilian paradigmatic radio narrators (Haroldo de Souza and José Carlos Araújo) in front of the video cameras.

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Technical, expressive and stylistic issues concerning their performance are observed in the study.

Understanding the football arenas as "dispositifs" planned to hyperstimulate the fans and to maximize profits, Gabriela Lopes Gomes (UFOP) investigates the communicational consumption and materiality of one of Brazilians newest stadiums: the Arena MRV, in the city of Belo Horizonte (**"As arenas contemporâneas como paradigmas das práticas torcedoras: o caso do dispositivo Arena MRV"**).

We conclude this issue with an interview with Brett Hutchins: **Capitalism + Culture x Media: Sports and the Valorization of Technological Innovation.** Hutchins, one of the leading scholars on media, sport, and technology, makes a strong case for integrating sports more systematically into media studies curricula to critically examine how the capitalist media system harnesses, shapes and is shaped by sports – and who wins and who loses in this process. In the conversation with prof. Markus Stauff, Hutchins discusses the ambivalences of sports fans' characteristic media literacy, the naturalization of the relationship between sport and technology, and the increasing status of sports as media. This implies the "sportization" of media culture beyond sports. Also, instead of media reporting *about* sport, there seems to be a growing convergence between sports logic and media logic.

In summary, this special edition presents a range of perspectives on the intersection of sports, media, and technology, examining topics from the historical evolution of sports practices and their role in datafication to the transformation of arenas and contemporary sports consumption formats. The articles and the interview provide a critical analysis of the cultural and structural shifts driven by technological advancements, emphasizing the complex interplay of power, identity, and economy within the sports world. By addressing these themes from

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a multidisciplinary standpoint, we aim to contribute to a deeper understanding of the reciprocal influences among sports, media, and technology, broadening discussions on the impact of these relationships.

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Marcio Telles is professor at the Graduate Program in Communication and Languages at Tuiuti University of Paraná, Brasil. PhD in Communication and Information from the Federal University of Rio Grande do Sul, with a doctoral internship at Winchester School of Art . ORCID: https://orcid.org/0000-0003-3968-0739

Carlos d'Andrea is professor at the Graduate Program in Communication (PPGCOM) at the Federal University of Minas Gerais, Brasil, and a researcher at CNPq (productivity grant - level 2). https://orcid.org/0000-0001-7328-6714

Markus Stauff is Associate Professor of Cross-Media Culture at University of Amsterdam's Media Studies department. Currently, his main research areas are governmentality studies; theories of media change; visual and epistemic cultures of sports. He is member of the editorial board of Krisis – Journal for Contemporary Philosophy. https://orcid.org/0000-0001-8350-7904

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