THE 'PARADOX OF MEDIATIZATION': WHY DO DECISION-AID TECHNOLOGIES IMPROVE FAIR DECISIONS BUT REDUCE THE ENJOYMENT AND EMOTIONAL INVOLVEMENT OF FOOTBALL FANS?

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'PARADOXO DA MEDIATIZAÇÃO': POR QUE AS TECNOLOGIAS DE APOIO À DECISÃO TORNAM AS DECISÕES MAIS JUSTAS MAS REDUZEM O PRAZER E O ENVOLVIMENTO EMOCIONAL DOS TORCEDORES DE FUTEBOL?

RESUMO: Os processos de midiatização são particularmente evidentes no esporte. As novas tecnologias são frequentemente utilizadas para desenvolver o esporte e melhorar a experiência do espectador. As tecnologias de auxílio à decisão, como o Árbitro Assistente de Vídeo (VAR), conduzem a decisões mais justas por parte dos árbitros, mas são controversas entre os torcedores porque têm um impacto negativo na sua experiência emocional. Embora as decisões pareçam ser mais justas, os torcedores estão mais insatisfeitos. Esta aparente contradição é explicada pelo paradoxo da mediatização, que trata da complexa relação entre a informação e a experiência de entretenimento. Demonstra-se que a informação adicional pode conduzir a melhores decisões, mas que as emoções dos torcedores são afetadas devido à interferência no jogo. As novas tecnologias, mais complexas, conduzem também a maiores expectativas de exatidão das decisões. No entanto, mesmo as tecnologias de apoio à decisão não oferecem uma precisão absoluta e podem ocorrer erros humanos, deve-se questionar o grau de midiatização que um esporte e os seus fãs podem tolerar.
PALAVRAS-CHAVE: Midiatização. Futebol. VAR.

THE 'PARADOX OF MEDIATIZATION': WHY DO DECISION-AID TECHNOLOGIES IMPROVE FAIR DECISIONS BUT REDUCE THE ENJOYMENT AND EMOTIONAL INVOLVEMENT OF FOOTBALL FANS?

ABSTRACT: The processes of mediatization are particularly evident in sports. New technologies are often used to develop the sport and enhance the viewer's experience. Decision-support technologies, such as the Video Assistant Referee (VAR), lead to fairer decisions by referees but are controversial among fans because they negatively impact their emotional experience. Although decisions seem to be fairer, fans are more dissatisfied. This apparent contradiction is explained by the mediatization paradox, which addresses the complex relationship between information and entertainment experience. It is shown that additional information can lead to better decisions, but fans' emotions are affected due to interference in the game. New, more complex technologies also lead to higher expectations for decision accuracy. However, even decision-support technologies do not offer absolute precision, and human errors can still

occur, raising the question of how much mediatization a sport and its fans can tolerate.

KEYWORDS: Mediatization. Football. VAR.

LA 'PARADOJA DE LA MEDIATIZACIÓN': POR QUÉ LAS TECNOLOGÍAS DE AYUDA A LA TOMA DE DECISIONES MEJORAN LAS DECISIONES JUSTAS PERO REDUCEN EL DISFRUTE Y LA IMPLICACIÓN EMOCIONAL DE LOS AFICIONADOS AL FÚTBOL?

RESUMEN: Los procesos de mediatización son particularmente evidentes en el deporte. Las nuevas tecnologías se utilizan con frecuencia para desarrollar el deporte y mejorar la experiencia del espectador. Las tecnologías de apoyo a la toma de decisiones, como el Árbitro Asistente de Video (VAR), llevan a decisiones más justas por parte de los árbitros, pero son controvertidas entre los aficionados porque impactan negativamente en su experiencia emocional. Aunque las decisiones parecen ser más justas, los aficionados están más insatisfechos. Esta aparente contradicción se explica por la paradoja de la mediatización, que aborda la compleja relación entre la información y la experiencia de entretenimiento. Se demuestra que la información adicional puede llevar a mejores decisiones, pero que las emociones de los aficionados se ven afectadas debido a la interferencia en el juego. Las nuevas tecnologías, más complejas, también generan mayores expectativas de precisión en las decisiones. Sin embargo, incluso las tecnologías de apoyo a la toma de decisiones no ofrecen una precisión absoluta y pueden ocurrir errores humanos, lo cual lleva a cuestionar el grado de mediatización que un deporte y sus aficionados pueden tolerar.

PALABRAS CLAVE: Mediatización. Fútbo. VAR.

Introduction

Sports have often been a testing ground for new ideas and technologies, and therefore a showcase for *mediatization* (Frandsen, 2020), which describes the growing importance of digital and computerised media (Krotz, 2014). As sports play a special role in society because of their popularity and wide reach, they have significantly contributed to the popularisation and emergence of technologies and to the development of the broader media industry (Boyle & Haynes, 2009). Especially because of the commercialisation of sports, the media audience is becoming increasingly important for the industry. Currently, the main revenues are generated by television broadcasting licences, not by ticket sales. As a result, it is becoming increasingly important to make sports as attractive as possible; this is achieved when the sport is strongly

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oriented towards media logic. In simple terms, this means that it is a presentation of media content in a way that is highly attention-grabbing (Altheide & Snow, 1979).

Sports broadcasts are produced in such a way that the competitions are more exciting, dramatic and emotional for live audiences and TV viewers but also easier to understand so that they can attract and engage even more people. These considerations have resulted in modern sports stadiums that are designed to serve as both television studios and sports venues (Ross, 2008, p. 182). For example, video cubes and screens are used in many sporting arenas to show close-ups of the action and thus ensure that spectators can follow the most important events and key scenes, even if the actions do not directly take place in front of them. In other sports, laser technology and digital overlays are used to explain the rules to spectators, especially TV viewers, or to visualise differences in athletes' performances, such as in ski-jumping or javelin throwing. However, the best-known and most discussed technologies are *devices* to support human decision taking that have been used in numerous sports in recent decades, including Hawk-Eye, a computerised ball-tracking system used in cricket, tennis and football [soccer] (Collins & Evans, 2008). Complex systems of video review are now an integral part of professional leagues e.g. in rugby *(Television Match Official, TMO)* or football *(Video Assistant Referee, VAR),* and have been the focus of discussion (Teixeira da Silva et al., 2024).

The present article is a theoretical contribution that examines the question of how decision-making technologies influence the entertainment experience of the audience. For decades, technologies and their functions (e.g., camera angles such as close-ups or replays in slow motion) have been used to make the sportscasts more dramatic and to increase the excitement of the television audience (Horky, 2009b). Since the implementation of video assistants actively intervenes in the action, their impact on the game goes far beyond earlier changes and is therefore more controversial. The mediatization of sports influences the

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competition and the action of athletes, referees and fans. Based on current empirical findings, the concept of the 'mediatization paradox' is developed to explain why technologies such as VAR, which are supposed to make decisions fairer, sometimes create the opposite perception among spectators and rather reduce the enjoyment and emotional involvement of football fans.

Theoretical Background: The Concept of Mediatization and its Social Meaning

In recent years, international publications on *mediatization* have considerably increased. However, the processes of mediatization are not new (Averbeck-Lietz, 2014) and originally encompassed all kinds of media. What is meant by a medium depends on the discipline. For instance, in the broadest sense, media can be anything that conveys a message, even without a technical component, or it can also refer to the mass media and be understood as institutions or content creators (e.g., journalists) that disseminate content. In the current paper, media are understood as media technologies.

In the social sciences, such as communication studies, it was not until the second half of the 1990s that attempts were made to systematically develop the concept of mediatization and, thus, primarily examine the growing importance of digital and computer-based media (Krotz, 2014). Broadly speaking, the concept of mediatization can be said to encompass the cultural and social processes in which *the logic of media* and of other institutions interact and adapt to each other (Hjarvard, 2018). The term media logic refers to the specific rules, structures and practices by which media content is produced, presented and distributed. In turn, media users selectively adopt this logic and the respective symbols to make sense of the media experience (Altheide & Snow, 1979). As a result, media logic, here as an institutional form for guiding organisational behaviour and social perspectives on what is normal and

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typical, is also central to the process of social construction of reality by individuals. In this regard, the processes of mediatization have been observed and studied in almost all social spheres (Lundby, 2014).

Two intertwined approaches have emerged in the research on mediatization, which Hepp (2013) refers to as *institutionalist* and *social constructivist* research traditions. The institutionalist tradition has long been particularly concerned with traditional mass media and their media logic. Of interest here is, for example, how social actors (e.g., individuals, institutions) adapt to the logic of the media or use it to generate public attention (Nölleke et al., 2021). The social constructivist tradition focuses more on how, for example, digital media change personal communication and, thus, also influence daily communication culture and their related processes in society (Couldry & Hepp, 2017; Hepp, 2013). When mediatization processes and developments are studied, the term *mediatization theory* is often used. However, mediatization is more a theoretical concept than a classical theory. Krotz (2014) describes mediatization as a metaprocess comparable to globalisation or commercialisation. This means, for example, that new media — through both their technologies (e.g., smartphones) and their channels and functions (e.g., messengers, social media) — change how people communicate and interact with each other. As a result of the different degrees and possibilities of mediatization, social realities and worlds develop depending on the form of communication. As a result, the crucial question in mediatization research is how (digital) media change everyday life, culture, social relationships and institutions and society as a whole (Hjarvard, 2018; Krotz, 2014).

The Mediatization of Sports

Sports can be considered a pioneering and perfect example of a process of mediatization (Frandsen, 2020). The term *media sport* refers to those sports that attract a great deal of attention due to their strong

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interaction with the media and their economy. Media sports achieve high ratings or circulations, thus having high visibility in the media (Horky, 2009a). The mediatization of sports, especially professional sports, means that changes in sports can increasingly be attributed to the influence of the media to a greater extent and in the long term (Dohle et al., 2009, p. 161). The impact of sport on the media is dependent on the way in which sports and their athletes are portrayed and staged in the media. Emotionally charged images support the 'stories of [tragic] heroes'. Affects can be amplified simply by using certain staging techniques and technological setups (e.g., image framing, image speed, camera movement, etc.) (Horky, 2009b). Therefore, media representations have a significant influence on the characteristics of sports broadcasts, such as dynamisation, dramatisation and emotionalisation, making the reception of sports in the media more attractive to viewers (Dohle et al., 2009, p. 163).

Schauerte and Schwier (2008) describe that sporting competitions are designed or can be produced in the media in such a way that the tension, drama and dynamics are not only maintained over its entire duration but also consistently increase. This enables the viewer to participate emotionally, similar to the consumption of crime movies (p. 169). Mediatization tendencies and adaptations can be found in many sports that are mainly shown on television, for instance, winter sports (Hagenah & Meier, 2019; Nieland, 2019), football (Meyen, 2014), basketball (Bieg, 2019) or even badminton, dressage or beach volleyball (Heinecke, 2014). Most of these rule changes or media adaptations are intended to improve the visualisation of televised sport and action, whether through additional screens at race tracks, virtual lines, e.g. to mark distances that only the television viewer can see, or the colour of sports equipment and outfits to make them more recognisable on television. However, these adaptations hardly affect the way the sport is performed. The situation is different with the latest technologies used by referees to make decisions during a competition or match.

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Decision-Aid Technologies in Sports

The use of technology in sports to make or support decision taking is increasing. Some technology, such as Hawk-Eye, a video processing system consisting of multiple cameras and a computer to store and process the data, is used, among others, in tennis to check if the ball is in play or out of bounds. The referee's decision is fully mediatised, based solely on data from the technology. Under the same circumstances, the same decision will always be reached. This is why the term decision makers is often used to describe these technologies (Collins & Evans, 2008). Other complex systems, such as the TMO in rugby or the VAR in professional football, support the referee's decision-making process. They are therefore called decision-aid technologies (Collins & Evans, 2008). Because the VAR's decisions are based on an analysis of high-resolution video recordings in slow motion that show events from multiple angles, the technology is supposed to add precision, especially in important match situations such as fouls, penalties, offsides and goals. This reduces the influence of the referee's subjective perception. However, human error cannot be completely ruled out (Teixeira da Silva et al., 2024).

Therefore, the VAR is part of a complex sociotechnical system. This means that the effectiveness and impact of the VAR will depend on the existing social structures of football, the actions of the individuals involved and the ongoing appropriation and adaptation of the technology in response to different experiences and feedback (Nagle et al., 2024). Unlike decision-making technologies, VAR allows for different ways of interpreting a situation, which often leads to a great deal of debate. This means that even if the data from a technology is a useful tool for a decision, it is still a human being who makes the decision based on personal judgement and experience. Consequently, there is a certain degree of flexibility and variance in the decision-making process, and

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therefore subjectivity, for instance, in the way in which a previous action is taken into account or in the way in which the scene is assessed (e.g. whether a ball is classified as a handball or not, whether a tackle is considered a foul or not). To better understand why the VAR is so controversial despite the possibility of making more accurate decisions, the next section describes the VAR system based on the explanations provided by the *German Football Association* (DFB.de, 2022).

Description of the Video Assistant Referee (VAR)

The first official use of the VAR in football was in a Dutch Cup match between Ajax Amsterdam and Willem II in September 2016. Since this moment the VAR has gradually been introduced in many countries around the world. In Germany, since the 2017/2018 season, the VAR has been used in the Bundesliga. Video assistants can be referees of the Bundesliga and 2nd Bundesliga of the DFB Schiri GmbH and qualified former referees; they have participated in comprehensive training courses and are recognised by the responsible *IFAB (International Football Association Board)* and *FIFA (Fédération Internationale de Football Association).* The video assistant is supported by an assistant video assistant (AVA), who is either an active Bundesliga assistant referee or referee of the 2nd Bundesliga and 3rd Liga or who once was. In addition, there is a video technician (or two in the Bundesliga), also called operator, who provides the video assistant with key scenes as quickly as possible from different insightful perspectives so that they can quickly come to an assessment. The team works at the Video Assist Centre (VAC) in Cologne and follows the game via screens, where they can access perspectives from 19 to 21 cameras during Bundesliga matches. Since the 2022/23 season, seven additional goal-line technology cameras have been used for each side of the goal. In addition, the video assistant has a calibrated offside line, where 3D perspectives should make it easier to verify a possible offside position.

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In general, the video assistant may intervene only if they recognise a clear and obvious wrong decision by the referee on the pitch. In this case, the video assistant contacts the referee via a headset with radio contact, with which the referee is also communicating with his assistants on the touchlines and the fourth official. However, communication can also come from the referee when they want to request the video referee's evaluation. If in doubt, the referee in the field can view the disputed scene on a monitor on the sidelines. They are then shown the camera perspective that the video assistant used for their assessment. The video assistant logo on a video wall informs fans in the stadium that the video referee is reviewing a scene. Since the 2018/2019 season, short explanations of the reasons for the video assistant's review of a scene and their decision have also been provided on the video wall. Since the 2019/2020 season, TV viewers have been shown the scene and perspective on TV that the referee is also watching on the monitor on the sidelines (DFB.de, 2022).

For some time, it has been discussed whether scenes of video evidence should also be shown on video walls in stadiums (Deutschlandfunk.de, 2019). The first step in this direction was taken at the Women's World Cup in 2023. However, this has not yet been implemented in national football leagues. When a referee reviews a scene on the sidelines, they announce the decision and offer a short explanation in the stadium. Some fans in the stadium follow the match broadcasts in parallel via smartphones on their mobile devices to see the decisive scenes there. Therefore, they have an information advantage and can sometimes anticipate the referee's decision earlier than other fans who do not use these technical options. According to the DFB, these innovations have made decisions fairer.

Impact of the Video Assistant Referee (VAR)

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In recent years, a number of studies have examined the impact of the use of VAR in football. For example, some studies have shown that home teams received more penalties and fewer red cards before the VAR was introduced. In other words, they had a home advantage because of the referee's decisions. This home advantage decreased after the VAR was introduced but did not completely disappear. This suggests that home advantage depends not only on the referee but also on factors such as familiarity with one's own stadium or the atmosphere created by home fans, which can influence the performance of the home (or visiting) team (Holder et al., 2022). A similar conclusion is reached by Duffner et al. (2023). In their study, they found no statistical evidence that the introduction of VAR has reduced referee bias. It is therefore doubtful whether the introduction of VAR has indeed resulted in a general decrease in home advantage or whether this is only true for individual games.

Another influence on match performance has been demonstrated by Carlos et al. (2019); they compare match statistics on fouls, goals, offsides, penalty kicks, playing time in halves, total playing time and yellow and red cards before and after the introduction of the VAR, here by looking at 1,024 matches of the Italian Serie A and the German Bundesliga. The results show that the number of offsides, fouls and yellow cards decreased, but the amount of stoppage time in the first half (and, consequently, in the entire match) increased after the VAR was introduced. Comparable trends are shown in the analysis by Bao and Han (2024). Whether the referees decided differently because they thought the VAR would intervene in case of doubt or whether the players' behaviour changed because they knew the VAR could review the scene cannot be determined from these results.

However, since the introduction of the VAR, referees and their decisions have been thrown more into the spotlight. Thus, the duration of scenes focusing on the main referee as well as referee-related decisions have increased (Nasz & Schäfer, 2022). Therefore, it may seem

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counterintuitive that referees feel less pressure on the pitch since the introduction of the VAR, according to Frandsen and Landgrebe (2022). This can be explained by the perception that the pressure has been shifted to the VAR room and by the fact that a wrong decision can be corrected by the VAR team, making the responsibility less dependent on an individual referee and more of a collective matter (Frandsen & Landgrebe, 2022; Samuel et al., 2020). However, this goes hand in hand with the fact that the authority and credibility of the referee have also been weakened or at least more questioned by the intervention of the VAR (Frandsen & Landgrebe, 2022; Samuel et al., 2020). Furthermore, the use of a VAR may also have an impact on match preparation, player management, public perception and referee decisions (Samuel et al., 2020). Regarding the functionality of the VAR, referees are more positive than fans, even though they are also not satisfied with using the VAR (Schwab et al., 2024).

Fans have reacted differently to the introduction of the VAR. First, it appears that fans supported the VAR because it makes decisions more accurate, effective, objective and fairer (Hamsund & Scelles, 2021; Van den Berg & Surujlal, 2020; Winand et al., 2021). In addition, empirical results indicate that, with the possibility of video evidence, both the expectations for correct decisions by the refereeing team increase (d'Andrea & Stauff, 2022; Frandsen & Landgrebe, 2022) and the frustration increases when there is no VAR intervention in what they consider a 'clear and obvious wrong decision'. The latter is demonstrated by d'Andrea and Stauff (2022) using the 2018 World Cup as a case study. They investigate how users on Twitter discussed the intervention of the VAR—or even the non-intervention of the VAR. They show that the very question of 'clear and obvious wrong decisions' by the referee, which entitles the VAR to intervene, was highly controversial. The authors conclude that due to partisanship in sports, VAR technology tends to increase rather than decrease the 'interpretive flexibility' of situations. In other words, even if, according to previous findings, decisions have

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become fairer, this does not necessarily correspond to the perceptions of fans of two opposing teams at a match who evaluate the same disputed situation differently because of their identification with one team. In another analysis of Twitter, Kolbinger and Knopp (2020) show that tweets referring to the VAR were more often negative than other tweets about the match. In addition, it was found that, after a decision by the VAR, tweets were also more negative, up to 20 minutes afterwards, than before a highly discussed, controversial key scene. Thus, the VAR leads to more frequent expressions of mainly negative sentiments and opinions on Twitter (Kolbinger & Knopp, 2020).

One might wonder why these opposing tendencies show up: on the one hand, decisions become fairer and, on the other hand, are obviously not necessarily perceived that way. Zglinski (2022) provides an explanatory approach to this. He addresses another dimension that influences satisfaction with the VAR: the nature of the scene. That means that while some situations, such as offside, have clear rules that can be reviewed objectively, there are offences that rely more on subjective interpretation and judgement. These subjective decisions include fouls and handball, where the severity of the foul or the movement of the arm towards the ball, or not, regularly cause debate. Zglinski (2022) argues that the VAR has no real advantage, especially for the latter events.

The VAR also affects the emotional viewing experience of the audience. Fans criticise that excitement is lost and that emotions are thwarted because the flow of the game is interrupted by the VAR. The impression that almost every goal is reviewed dampens the fans' enjoyment (Hamsund & Scelles, 2021; van den Berg & Surujlal, 2020; Winand et al., 2021). These effects are particularly evident among fans who identify more strongly with their favourite team. Highly involved fans like to discuss the match at length and enjoy controversial scenes and decisions during the match. The VAR takes away, at least partially, their enjoyment of discussing controversial decisions. Therefore, they view the VAR more critically than less involved fans (Winand et al., 2021).

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The VAR as a Key Example of Mediatization in Sports

The introduction of the VAR itself as well as the way it is discussed in social media during a live match can be understood as steps in an ongoing and comprehensive process of the mediatization of sports (d'Andrea & Stauff, 2022). In other words, the VAR is an important part of the evolution of football (Tamir & Bar-eli, 2021). The complexity and scope of VAR can also be illustrated by considering the extent of its impact on the game and its actors. For instance, because the referee is provided with a monitor on which they can view the disputed scene himself, these are *mediatised spaces*. The referee becomes a *mediatised actor* and inevitably takes centre stage more than before (Nasz & Schäfer, 2022). The typical gesture with which the referee indicates that the scene will be reviewed by the VAR is a *mediatised action*. The VAR intervention also represents an intervention in the *rules of* the game, which are also *mediatised.*

The example of the VAR makes it clear how complex mediatization is. Even if the VAR has been primarily introduced to make decisions and the sport fairer, it has an effect not only on the game but also on the players involved on and off the pitch, on spectators and on their experience as well as on follow-up communication, for example, on social media. The VAR in football demonstrates what mediatization is all about. Namely, it is less about the effects of a specific medium or individual media technology on individual users but rather about the structural changes that result from the embedding of different types of media—here, VAR technology with all its components—in social and cultural practices (d'Andrea & Stauff, 2022, p. 833). Mediatization processes influence the perception of social reality by all involved persons, such as athletes, coaches, referees and spectators in stadiums and in front of screens. This football reality is shaped not only by the different degrees of mediatization of the sport and the different use of technologies to follow and discuss it,

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but also by personal characteristics such as identification with a team and being a fan of a club (d'Andrea & Stauff, 2022).

As football is the most popular sport in many countries, the discussion about VAR is also the most visible in the media compared to similar decision-aids in other sports. However, such decision-aid technologies are by no means new. The TMO has been in use in rugby since 2001. Similar to the VAR, the TMO follows the match on a television screen and evaluates an event with the help of different camera perspectives. The TMO also communicates with the referee via headphones to assist him in making decisions. Compared with the VAR in football, the audio between TMOs and referees can be listened to by fans via *fan radio* (Stoney & Fletcher, 2021). This example illustrates how the degrees and processes of mediatization create different realities. Everyone in the stadium is watching the same event, but those who listen to *fan radio,* for example, have a knowledge advantage over fans who do not use it because they can listen to the dialogue between the referees and TMO live and, thus, are informed about the details of the scene. In other words, fan experience is significantly influenced by mediatization. Furthermore, the mediatization of sports, especially football, is reinforced by media and media-related communication before, during and after matches. In this regard, social media has become a sign of mediatised communication that is ubiquitous in sports and continues to grow in importance (Heinecke & Meyen, 2018). As a result, the social world of football has also become a mediatised social football world because more or less everything that happens in this social world is influenced and shaped by the media (Krotz, 2014, p. 78). This means that, depending on the extent and intensity of the use of media and communication channels in the reception of sports, spectators have different levels of knowledge and information about sporting events. This, as well as other individual factors, such as identification with a club, affects how sports viewers evaluate the situation.

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The 'Paradox of Mediatization'

In summary, seemingly contradictory trends have emerged in the state of research so far. On the one hand, technologies such as Hawk-Eye or the VAR make refereeing decisions fairer, more accurate and more objective (Hamsund & Scelles, 2021; Van den Berg & Surujlal, 2020; Winand et al., 2021). Nevertheless, reviews of match situations are often accompanied by interruptions, which lead to emotions being withheld. A decision on whether a goal in football counts or not, for example, is then fact-based and at best more rationally comprehensible but reduces the intensity of emotions among fans and probably also among players. In other words, the certainty that a decision is correct, the increase in information and the decrease in contentious actions come partly at the expense of emotions (Hamsund & Scelles, 2021; van den Berg & Surujlal, 2020; Winand et al., 2021).

However, there are other issues. First, the technologies are not 100% accurate, but many people do not seem to realise this and overestimate the accuracy of the technologies (Collins & Evans, 2008). Even if they are maximally reliable, their usefulness can be questioned. For example, when a goal scored by Denmark against Germany at Euro 2024 was disallowed after a VAR review because the Danish player was literally standing with his big toe offside, even German journalists commented that it was 'brutal and out of touch with reality' (Mayn, 2024). Even though this scene was widely discussed after the match, it undermined all emotions during the game because the technology had signalled an offside. The uncertainties about the interpretation of a scene and even wrong decisions by the referee—as annoying as they may be— generate heated debates, great emotions and a rousing stadium atmosphere, which are what make up the fan experience for many so unique (Stoney & Fletcher, 2021; Winand & Fergusson, 2018). All of this could be diminished through the use of decision-aid technologies, making sports less emotional. As already indicated, however, it cannot be said

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that the controversial scene completely prevents emotions. Rather, emotions change and shift. That is, for goals that are reviewed and that may have been preceded by a hard-to-detect offside position or foul, feelings of joy and celebration (or frustration and horror) are suppressed until the goal is confirmed by the VAR. Only then, with a delay, can emotions be unleashed. Particularly in the case of highly controversial scenes, the emotional processing of decisions often extends beyond the match itself, especially because fans are given all the camera angles and expert opinions in the media.

This leads to a second important point: The VAR provides an additional level of control in the game by viewing the video recording of the incident from different angles and at different speeds and by making recommendations and decisions to the referees based on the replays. As a result, decisions are being judged more harshly by the public. The VAR's decisions are commented on and discussed by commentators, journalists and spectators more than ever before. This is not only because a fairer decision is expected but also because—as already mentioned— the 'interpretative flexibility' of situations tends to increase rather than decrease, for example, through different image details and perspectives (d'Andrea & Stauff, 2022). An example of this can be seen at Euro 2024, when a Dutch player lightly kicked an English defender in the quarter-finals and a penalty was awarded. Here, even English experts said that it should not be a penalty, which once again called the referee's decision into question. However, it is far more severe when the referee refuses to review a controversial decision, as happened in the quarter-final of the Euro 2024 (Germany vs. Spain) when a Spanish player got his hands on the ball in the penalty area and nothing happened. Even days after the game, it was unclear why no penalty was given. Most fans were frustrated that the referee did not watch a replay, even though the technology was there.

Taking all these observations into account, the increasing mediatization and, thus, availability of increasing amounts of information

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through technologies should lead to a more objective-rational and less subjective-emotional evaluation of a controversial scene, which should facilitate a fair decision and increase its acceptance. At the same time, the availability of more and more information leads to a greater scope for interpretation, which, because of its complexity, can be characterised more by subjective-emotional evaluations than by objective-rational evaluations, making a correct or fair decision more difficult and reducing its acceptance. These opposing tendencies could be called the *'paradox of mediatization'*.

This paradox of mediatization has significant implications for fan experiences and sports, on the one hand, and for media logic, on the other hand. Focusing on sports and their fans, despite the use of modern decision-aid technologies, it is not possible to make every decision correctly. Rather, it merely raises the expectation that decisions will be correctly made. This is followed by the question of what the 'right decision' is. Often, it is a matter of millimetres or seconds that can be decisive for the assessment; moreover, despite the given set of rules, there is often some room for interpretation of the action or statistical inaccuracies in the measurement by the technologies (Collins & Evans, 2008). However, is it desirable to always make the right decision with the help of more innovative technologies if this comes at the expense of emotions at all? Most likely not because it seems to have a negative impact on the excitement and flow of the game. Many football stakeholders see a need for improvement in the way referees use technology on the pitch and in their assessment of certain situations and suggest the introduction of additional digital tools, such as screens or loudspeakers in the stadium, to increase the transparency of decisions for fans (Teixeira da Silva et al., 2024). The question is whether this further progression of mediatization through more technology will actually increase satisfaction or whether it will further exacerbate the paradox of mediatization and, thus, increase dissatisfaction.

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Overall, there are many different opinions about the implementation of VAR, ranging from improving it with additional technologies to abolishing it altogether. However, although there are many critical voices among experts, players, coaches and fans that such technologies will destroy the sport these decision aids work well in terms of media logic. Assuming that media content is emotionally prepared to attract the attention of the audience, it is easier to dramatise content when controversial scenes are part of the game. This not only allows key scenes to be shown and analysed from different camera angles but also provides material for discussion in post-match interviews, at subsequent press conferences and on social media, where fans can discuss their views. At the same time, such decisions—possibly wrong ones—give the media the opportunity to dramatise and emotionalise the match, making it a story that can be repeatedly told in subsequent matches. Even without the VAR, for example, Maradona's 'hand of God' went down in history books and is still quoted today. It can be assumed that the increasing mediatization of sports means that similar scenes or wrong decisions will have a lasting effect, providing material for future matches as they happen. Therefore, it can be assumed that, despite—or perhaps because of—technical aid to the decision-making process, wrong decisions have a far greater potential to attract media attention and remain in the collective memory in the medium term than 'simple human error'. In addition, this speaks in favour of media logic.

Mediatization in sports can hardly be stopped, and further technologies will be invented and deployed; this is a good thing because sports have always been a testing ground for new ideas and technologies, as was said at the beginning. Nevertheless, it can only be in everyone's interest to find a good balance between making decisions as accurately as possible and playing as fluidly and quickly as possible because the two are incompatible (Stoney & Fletcher, 2021). Both fans and football games need controversial scenes to create a good stadium atmosphere (Winand & Fergusson, 2018). This, in turn, is important for creating a

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good atmosphere for viewers at home. At the same time, however, the use of new technologies in televised sports shows that there is no absolute certainty. Despite the latest technology, there remains a degree of uncertainty beyond sports, and we should be aware of this uncertainty as we increasingly rely on automated technology and artificial intelligence in everyday life (Collins & Evans, 2008).

Concluding Remarks

Not only in sports but also in everyday life, new technologies initially ensure that everything is more precise and controlled. However, a closer look reveals that additional information, which should actually make evaluations and decisions easier, can make things more complex and thus, decisions more complicated. As the assessment of an issue, a situation or a scene become more complex, for example due to additional data from technology, it becomes more difficult to make a clear decision. The example of VAR shows that although more accurate assessments and fairer decisions by referees are possible, fans are still often dissatisfied with the outcome, they don't think it's fair and miss the sudden surge of emotion (*paradox of mediatization*). One reason for this is that both the technology and the referee's judgements can still be flawed and allow for many possible interpretations, especially in complex match situations (*interpretative flexibility*, d'Andrea & Stauff, 2022). This is likely to create a vicious circle. The implementation of more technology leads to more data and more interpretations, which creates the need for more data-driven technologies to clarify the controversial situation. Rather than simplifying a decision, this can add ambiguity to a scene and make the final decision more difficult to accept.

Would abolishing the VAR be a solution, as some fan groups are already calling for? Then, there would perhaps be more controversial scenes again, which would no longer be checked, and the referee would have to decide from the moment. However, fans and spectators may be

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better able to accept that people make mistakes when no technology is used. Perhaps, it is these human decisions that make football so entertaining, emotional and authentic. And less complex.

In an already complex world, also beyond sports, it would be wise to reduce complexity. Even if technologies can relieve us of much of the thought and work steps and present us with all the options in an even more transparent way, they do not automatically make decisions easier or better. Therefore, in everyday life, maybe we should trust our feelings and intuition from time to time rather than seeking out all the facts.

References

ALTHEIDE, D. L. & SNOW, R. P. *Media logic*. Beverly Hills, CA: Sage, 1979.

AVERBECK-LIETZ, S. Understanding mediatization on 'first modernity': sociological classics and their perspectives on mediated and mediatized societies. In: LUNDBY, K. (Ed.). *Handbooks of communication science: vol. 21. Mediatization of communication*. Berlin: De Gruyter Mouton, 2014. p. 109-130.

BAO, R. & HAN, B. The influence of the video assistance referee (VAR) on the English Premier League. *International Journal of Performance Analysis in Sport*, v. 24, n. 3, p. 241-250, 2024. DOI: https://doi.org/10.1080/24748668.2023.2291236.

BIEG, P. *Mediensportarten abseits des Fußballs. Basketball in Deutschland: eine explorative Fallstudie zum Kampf um Platz zwei im Sport [Media sports away from soccer. Basketball in Germany: an exploratory case study of the battle for second place in sports]*. Köln: Herbert von Halem, 2019.

BOYLE, R. & HAYNES, R. *Power play: sport, the media and popular culture*. Edinburgh: Edinburgh University Press, 2009.

CARLOS, L.-P., EZEQUIEL, R. & ANTON, K. How does video assistant referee (VAR) modify the game in elite soccer? *International Journal of Performance Analysis in Sport*, v. 19, p. 646-653, 2019. DOI: https://doi.org/10.1080/24748668.2019.1646521.

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Recorde: Revista de História do Esporte, Rio de Janeiro, v.17, n. 2, p. 1-25, jul./dez. 2024.
ISSN 1982-8985.

COLLINS, H. & EVANS, R. You cannot be serious! Public understanding of technology with special reference to 'Hawk-Eye'. *Public Understanding of Science*, v. 17, n. 3, p. 283-308, 2008. DOI: https://doi.org/10.1177/0963662508093370.

COULDRY, N. & HEPP, A. *The mediated construction of reality*. Cambridge: Polity Press, 2017.

D'ANDRÉA, C. & STAUFF, M. Mediatized engagements with technologies: 'Reviewing' the video assistant referee at the 2018 World Cup. *Communication & Sport*, v. 10, n. 5, p. 830-853, 2022. DOI: https://doi.org/10.1177/21674795221076882.

DEUTSCHLANDFUNK.DE. *Videobeweis für Zuschauer. 'Ich bin ein großer Freund davon, Bilder im Stadion zu zeigen.'* [Video evidence for spectators. 'I'm a big fan of showing pictures in the stadium.'] 2019. Disponível em: https://www.deutschlandfunk.de/videobeweis-fuer-zuschauer-ich-bin-ein-grosser-freund-davon-100.html.

DFB.DE. *Video-Assistenten-FAQ* [Video assistant FAQ]. 2022. Disponível em: https://www.dfb.de/sportl-strukturen/schiedsrichter/video-assistent/.

DOHLE, M., VOWE, G. & WODTKE C. 2 Millimeter Unterschied. Eine Inhaltsanalyse von Regeländerungen zur Überprüfung von Mediatisierungstendenzen im Sport. [Two millimeters of difference. A content analysis of rule changes to test mediatization tendencies in sports]. In: BECK, D. & KOLB, S. (Eds.). *Sport & Medien. Aktuelle Befunde mit Blick auf die Schweiz*. Chur: Rüegger Verlag, 2009. p. 159–178.

DUFFNER, A.-L., SCHÜTZ, L.-M. & HILL, Y. The introduction of the video assistant referee supports the fairness of the game – An analysis of the home advantage in the German Bundesliga. *Psychology of Sport and Exercise*, v. 66, |102386, 2023.

FRANDSEN, K. K. *Sport and mediatization*. London: Routledge, 2020.

FRANDSEN, K. K. & LANDGREBE, K. Video assistant referee in a small-nation context: intensified mediatization. *Communication & Sport*, v. 10, n. 5, p. 811–829, 2022. DOI: https://doi.org/10.1177/21674795221090425.

HAGENAH, J. & MEIER, H. E. Langfristige Medialisierungsprozesse im Wintersport. Theoretische Perspektiven und empirische Spuren. [Long-term medialization processes in winter sports. Theoretical perspectives and empirical traces]. *Medien Journal*, v. 43, n.1, p. 21–44, 2019.

HAMSUND, T. & SCELLES, N. Fans' perceptions towards video assistant referee (VAR) in the English Premier League. *Journal of Risk and Financial Management*, v. 14, n. 12, p. 573, 2021. DOI: https://doi.org/10.3390/jrfm14120573.

HEINECKE, S. *Fit fürs Fernsehen? Die Medialisierung des Spitzensports als Kampf um Gold und Sendezeit.* [Fit for television? The medialization of elite sport as a battle for gold and airtime]. Köln: Herbert von Halem, 2014.

HEINECKE, S. & MEYEN, M. Die Mediatisierung des Sports in der digitalen Sportkommunikation. [The mediatization of sport in digital sports communication]. In: HORKY, T., STIEHLER, H.-J. & SCHIERL, T. (Eds.). *Die Digitalisierung des Sports in den Medien.* Köln: Herbert von Halem, 2018. p. 160–180.

HEPP, A. The communicative figurations of mediatized worlds: mediatization research in times of the 'mediation of everything'. *European Journal of Communication*, v. 28, n. 6, p. 615-629, 2013. DOI: https://doi.org/10.1177/0267323113501148.

HJARVARD, S. The logics of the media and the mediatized conditions of social interaction. In: THIMM, C., ANASTASIADIS, M. & EINSPÄNNER-PFLOCK, J. (Eds.). *Media logic(s) revisited.* New York: Palgrave Macmillan, 2018. p. 63-84.

HOLDER, U., EHRMANN, T. & KÖNIG, A. Monitoring experts: insights from the introduction of video assistant referee (VAR) in elite football. *Journal of Business Economics*, v. 92, p. 285-308, 2022. DOI: https://doi.org/10.1007/s11573-021-01058-5.

HORKY, T. Was macht den Sport zum Mediensport? Ein Modell zur Definition und Analyse von Mediensportarten. [What makes sports media sports? A model for defining and analyzing media sports]. *Sportwissenschaft*, v. 39, p. 298–308, 2009a.

HORKY, T. Sozialpsychologische Effekte der Bildinszenierung und -dramaturgie im Mediensport. [Social psychological effects of image staging and dramaturgy in media sports]. In: SCHRAMM, H. & MARR, M. (Eds.). *Die Sozialpsychologie des Sports in den Medien.* Köln: Herbert von Halem, 2009b. p. 93–112.

KOLBINGER, O. & KNOPP, M. Video kills the sentiment - exploring fans' reception of the video assistant referee in the English Premier League using Twitter data. *PloS One*, v. 15, e0242728, 2020. DOI: https://doi.org/10.1371/journal.pone.0242728.

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Recorde: Revista de História do Esporte, Rio de Janeiro, v.17, n. 2, p. 1-25, jul./dez. 2024.
ISSN 1982-8985.

KROTZ, F. From a social worlds perspective to the analysis of mediatized worlds. In: KRAMP, L., CARPENTIER, N., HEPP, A., TRIVUNDŽA, I. T., NIEMINEN, H., KUNELIUS, R., OLSSON, T., SUNDIN, E. & KILBORN, R. *Media practice and everyday agency in Europe*. Bremen: Edition lumière, 2014. p. 69-82.

LUNDBY, K. (Ed.). *Handbooks of communication science: vol. 21. Mediatization of communication*. Berlin: De Gruyter Mouton, 2014.

MAYN, J. Brutal und an der Realität vorbei – aber gut, dass es ihn gibt. [Brutal and out of touch with reality - but good thing it exists]. *Spiegel online*, 30 jun. 2024. Disponível em: https://www.spiegel.de/sport/fussball/fussball-em-2024-var-bei-deutschland-vs-daenemark-brutal-aber-gut-dass-es-ihn-gibt-a-ca57eb26-547e-4d4e-ad87-8b2f62aaa5a8.

MEYEN, M. Medialisierung des deutschen Spitzenfußballs. Eine Fallstudie zur Anpassung von sozialen Funktionssystemen an die Handlungslogik der Massenmedien. *Medien & Kommunikationswissenschaft*, v. 62, n. 3, p. 377–394, 2014.

NAGLE, T., SAMMON, D. & POPE, A. Exploring the socio-technical dynamics of VAR implementation and use. *Journal of Decision Systems*. Online first, 2024. DOI: https://doi.org/10.1080/12460125.2024.2354598.

NASZ, J. & SCHÄFER, M. *Schiris aus der Schusslinie? Wie die Einführung des Video Schiedsrichterassistenten (VAR) in der Bundesliga die TV-Berichterstattung verändert hat*. Paper presented at the 5th Annual Conference of the Media Sports and Sports Communication Group, Mainz, 2022.

NIELAND, J.-U. Die Medialisierung des Wintersports. Eine Standortbestimmung der Sportkommunikationsforschung. [The medialization of winter sports. A status review of sports communication research]. *Medien Journal*, v. 43, n. 1, p. 5–20, 2019.

NÖLLEKE, D., SCHEU, A. M. & BIRKNER, T. The other side of mediatization: Expanding the concept to defensive strategies. *Communication Theory*, v. 31, n. 4, p. 737–757, 2021. DOI: https://doi.org/10.1093/ct/qtaa011.

ROSS, S. *Higher, Further, Faster... Is technology improving sport?* West Sussex: Wiley, 2008.

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Recorde: Revista de História do Esporte, Rio de Janeiro, v.17, n. 2, p. 1-25, jul./dez. 2024.
ISSN 1982-8985.

SAMUEL, R. D., GALILY, Y., FILHO, E. & TENENBAUM, G. Implementation of the video assistant referee (VAR) as a career change-event: The Israeli Premier League case study. *Frontiers in Psychology*, v. 11, p. 1–16, 2020. DOI: https://doi.org/10.3389/fpsyg.2020.564855.

SCHAUERTE, T. & SCHWIER, J. Die Telegenisierung von Sportereignissen. Anpassung von Sportarten und ihrem Regelwerk an mediale Bedingungen [The telegenization of sporting events. Adapting sports and their rules to media conditions]. In: SCHIERL, T. (Ed.). *Die Visualisierung des Sports in den Medien*. Köln: Herbert von Halem, p. 164–186, 2008.

SCHWAB, S., STEVERDING, P. & REIN, R. The evaluation of the video assistant referee from referees' and spectators' perspectives in soccer – A case study of the German Bundesliga. *Soccer & Society*, v. 24, n. 8, p. 1027–1040, 2024. DOI: https://doi.org/10.1080/14660970.2023.2180632.

STONEY, E. & FLETCHER, T. "Are fans in the stands an afterthought?": Sports events, decision-aid technologies, and the television match official in Rugby Union. *Communication & Sport*, v. 9, n. 6, p. 1008–1029, 2021. DOI: https://doi.org/10.1177/2167479520903405.

TAMIR, I. & BAR-ELI, M. The moral gatekeeper: Soccer and technology, the case of video assistant referee (VAR). *Frontiers in Psychology*, v. 11 | 613469, 2021. DOI: https://doi.org/10.3389/fpsyg.2020.613469.

TEIXEIRA DA SILVA, J.A., NAZAROVETS, S., CARBOCH, J. ET AL. The video assistant referee in football. *Sports Engineering*, v. 27, n. 14, 2024. DOI: https://doi.org/10.1007/s12283-024-00459-3.

VAN DEN BERG, L. & SURUJLAL, J. Video assistant referee: Spectator and fan perceptions and experiences. *International Journal of Social Sciences and Humanity Studies*, v. 12, n. 2, p. 449–465, 2020.

WINAND, M. & FERGUSSON, C. More decision-aid technology in sport? An analysis of football supporters' perceptions on goal-line technology. *Soccer & Society*, v. 19, n. 7, p. 966-985, 2018. DOI: https://doi.org/10.1080/14660970.2016.1267629.

WINAND, M., SCHNEIDERS, C., MERTEN, S. & MARLIER, M. Sports fans and innovation: An analysis of football fans' satisfaction with video assistant refereeing through social identity and argumentative theories. *Journal of Business Research*, v. 136, p. 99–109, 2021. DOI: https://doi.org/10.1016/j.jbusres.2021.07.029.

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Recorde: Revista de História do Esporte, Rio de Janeiro, v.17, n. 2, p. 1-25, jul./dez. 2024.
ISSN 1982-8985.

ZGLINSKI, J. Rules, standards, and the video assistant referee in football. *Sport, Ethics and Philosophy*, v. 16, n. 1, p. 3–19, 2022. DOI: https://doi.org/10.1080/17511321.2020.1857823.

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