The Ubiquitous Sport-mediated Space: Sport-mediated Screens, Doubled Illusions, and Live Spectacles in Stadia

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Abstract
Stadium screens around the globe – such as the 2013 arrivals of the massive scoreboards at the Melbourne Cricket Ground in Australia or the JumboTron at Reliant Stadium in the United States – are increasingly an integral part of the sport event experience. This study, which postulates that stadium screens go beyond television, defines the huge screens as sport-mediated screens and explains their characteristics from theoretical, spatial, time, and functional perspectives. The stadium, as the mixed reality in which real space and mediated space coexist, is a new arena for cultural interface. As a representative media platform in the stadium, the sport-mediated screen can be described by the characteristics such as hyper-mediacy, remediation, and glance. The sport-mediated screen is not just ambient television located away from reality, but rather it is media itself in reality. Thus, it escalates the reality as a simulator. With the sport-mediated screens the stadium becomes a media itself and could be called as sport-mediated space.

Introduction

In 2013 the largest stadium screen (e.g., video board) in the National Football League (NFL) was unveiled at Reliant Stadium, home of the Houston Texans. While this screen surpassed the length of the Dallas Cowboys' much-publicized screen at AT&T Stadium (Barron, 2013), it is not the largest stadium screen in sports. That honor belongs to the Charlotte Motor Speedway, which unveiled its monstrous Panasonic screen in 2011 (Fowler, 2011). While sport facility screens are typically not as large as the screens in Charlotte and Houston, massive light-emitting diode (LED) screens are a feature of many modern sport stadia and arenas around the globe. From intercollegiate athletic contests (e.g., 2014 Women's Final Four at Bridgestone Arena in Nashville) to hallmark sporting events (e.g., Panasonic's on-site screens at the 2014 Sochi Olympic Winter Games), these grand LED displays are a part of sport. In fact, they are often placed in large public areas (e.g., public squares) during significant sporting events (e.g., the massive screens at Arena Corinthians, host stadium of 2014 FIFA World Cup matches). They provide a televised showing of the event so that those people who are unable to attend the event are still able to view the contest with the masses. Such live public showings mimic real stadia by projecting games on the grand and immersive screens. Such screens provide viewers with a sense of sitting in the real stadium. In both mediated environments (i.e., at the stadium and in the public square), people seem to take for granted that they can simultaneously watch games through the screens' image without any disbelief that the moving images are mediating ones of presence and representing of reality (Baudry, 2004).

The new type of visual sporting information offered by the grand LED screens is not just information created by media technology. It is also created by cultural convention as spectators

in both stadia as well as large public viewing gatherings are having new experiences from the same flat, rectangular televised surface (Manovich, 2005). With the full high-definition television (HDTV) technology which projects more colors than the human eye can classify, the screens can project much more real, sharp, and colorful images than reality itself. In addition, the spectators now could augment their experiences with slow motion, replays, and highlights of a game. While such a grand screen has recently been equipped with new technology, spectators are already familiar with it because they consider it as a massive television outside of their place of residence. However, is this grand screen at a public place or in the sporting facility (e.g., stadium, arena) just the same as the TV located inside a home? Or does a personal TV in a living room go outside the home toward a public place, and therefore, become the ambient TV? Why is the stadium spectator simultaneously gazing at the stadium screen on which the real is simulated even though he or she is watching the real game from his or her seat? In order to answer these questions, attention should first be focused both on the media itself and cultural regime in sport media.

Sport has dominated the recipient's perception through the popular diffusion by the media and its technology (In, 2008). The media have also successfully mediated sport and its recipients' perceptions. Because sport has heavily depended on the media, it is hard to imagine people enjoy sporting events without media technology. Over the past century the developments of media technology have included the projection of images at sporting events. When the first public live sport television screen was unveiled at the Berlin Summer Olympic Games in 1936 (Elsnera, Müllera, & Spangenberga, 1990; Slater, 1998), one of the major changes in sport consumption was a transformation from the participant-oriented sport into the spectator-oriented one. After the introduction of personalized TV, the current sport has changed its consumption paradigm from a spectating sport only on-the-site, to watching off- site through media which reproduce a remote experience.

Watching simulated sport games through the screen becomes the viewing regime among the spectators who are even seated at and seeing the actual game in person (Crary, 1992, 1999). In other words, the spectators have their own narratives of experiences from watching games and reproduced scenes on the screen. As McLuhan (1964) noted, the media are extensions of human beings because the media can be regarded as the process to which humans extend their experience. If we follow McLuhan's notion, sport stadia, along with the screens, have become the media itself that mediates between sport and its audience, and the sport stadia and screens are supersensible media thorough which humans overcome time, place, and other limitations. This is the first reason why attention should be given to the characteristics of sport screens in stadia and arenas.

Furthermore, the stadium screen needs to be regarded as media as it has attributes of multimedia and it represents the values as a new media that includes the conventions of "remediation" supported by Bolter and Grusin (1999). Remediation, the unique characteristics of digital media, is referred to as the processes of translating, refashioning, and reforming other media, not only with the technology, contents, and forms but also with material, economical, and social meanings in both past and present time (Bolter & Grusin, 1999). Specifically, the sport stadium screen is important in that it, as unique media, alternately projects the characteristics of hyper-mediacy and immediacy in terms of repurposing an experience. The stadium is the space of mixed reality. This is because reality and mediated reality co-exist in the stadium and the spectators in the stadium have mixed experiences with the reality and the representations of reality by watching live scenes and mediated scenes. This study argues that the stadium screens go beyond TV.

To fulfill the purpose of the study we reinterpret the stadium screen from the remediation theory (Bolter & Grusin, 1999) and apply anthropological approaches to the meaning of the stadium from the concepts of space and place (Auge, 1995). We also adopt the between-relationship and genealogy-oriented approaches suggested by Lee (2007) and Thorburn and Jenkins (2003). This study – in which the huge screens in sport stadia are defined as sport-mediated screens – details the relationships and genealogical characteristics affiliated with sport-mediated screens by investigating paintings in the Renaissance era, TV, movies, and virtual reality from theoretical, spatial, time, and functional perspectives.

A Sport-mediated Screen

Alberti's windows and supplementary space

Scholarly literature generally regards media screens as the windows of Leon Battista Alberti that open into the new world (Hagen, 1991). Since the Renaissance era, a frame of paintings has been regarded to have the possibility to be extended out of the frame and could create separation between *on screen space* and *off screen space* (Manovich, 2001). According to Manovich, a traditional screen (e.g., paintings from the Renaissance period) has been developed into a dynamic screen (e.g., movies, TV, video) that serves as a function of interaction with spectators. Similarly, the traditional screen has also been developed into a real time screen (e.g., computer screen, virtual reality) in which change could be simultaneously reflected on reality. Specifically, in virtual reality, the real time screen would disappear by embracing and absorbing audiences' eyes. Therefore, the evolutions of screens have been the development of immediacy that is pursuing the transparency of screens (Bolter & Grusin, 1999).

A movie screen, which is known to be a more aggressive medium than a traditional screen (Manovich, 2001), requires viewers' immobile immersion in the screen by representing the new world, which goes beyond reality. Mobile images on the screen lead people to be fully immersed on the screen with the perfect illusion and visual suffusion. The movie screen emphasizes the immediacy by fixing an individual's focus on the screen and hiding the existence of physical space in theatre with the dark lighting and huge screen. The TV screen is remediating a movie by bringing a public space (e.g., movie theater) into a private space. In addition, scenes from TV screens emphasize 'live-ness' by reforming the mediating conventions of the movie so that people believe that the scene has always been representing the reality. At this, the time people are watching TV as part of their daily life is their reality and the space TV is located in is their daily space. Thus, the TV screen claims that it is the media of immediacy by focusing its 'present-ness' of time and space (Bolter & Grusin, 1999). However, TV's relatively small screen makes it possible to realize its existence. In reality, TV is the hyper-mediated media that is pursuing transparency. The hyper-mediacy of the TV screen has been supported by the progress of technology and the development of devices adopting the technology such as flat screens and HD content, which work to make the TV experience even more real.

Sport-mediated screens have different characteristics and a unique history from the screens that Manovich (2001) mentioned (e.g., traditional screen, dynamic screen, real-time screen). Media screens - including Renaissance paintings, movies, TV, the Internet, and virtual reality - have been regarded as windows that allow us to navigate into the new world to which we want to reach. However, a sport-mediated screen is not the Alberti window that opens up the new world because, in the sport-mediated screen, the new world is not newly opened by media because it already exists before it becomes represented through the screen. The spectators/viewers do not see the new world through the screen, but already exist inside that

new world, therefore; the new world is not revealed. Sport images on the sport-mediated screen in sport stadium are the images that are always simultaneously shown off the screen. Based on Manovich's (2001) suggestion, the new mediated world affiliated with the stadium screen is not *on screen space*, which is just the supplementary space, but *off screen space* in which people can navigate.

The dualism of consumption space and production space

On the space of a painting or a movie, TV, website, or virtual reality screen, the consumption space cannot go beyond the production space because media users are able to see just the images based on what they select out of a provided database (i.e., the information given) (Manovich, 2001). Even though they select every image on the space mentioned above, they can just see the database given by the image producers. On the sport-mediated screen, however, the consumption space is larger than the production space. The production space shown on the screen is partially representing or re-presenting its subject (e.g., the sporting event itself, the officials, the athletes). In contrast, the consumption space always exists as the *actual being* as it is much larger than the images (i.e., production space) shown on the screen.

Paintings and movie, TV, Internet, and virtual reality screens project their subjects on the screen by visualizing and putting the subjects in their frames. During these processes, those media attempt to endow the real subjects represented and the mediated subjects expressed on the screen with the same or similar attributes with each other in order to pursue the immediacy and transparency of the subjects. Those two images (i.e., real and mediated) are simulating and share similar and interchangeable attributes with each other. However, the sport-mediated screen attempts to complement the real existence (e.g., the sporting event taking place in a stadium) in pursuing *co-presentation* rather than *representation* of the subjects in the pursuit of the immediacy and transparency of the subjects. The real world and the mediated world coexist and complement the reality of the subjects by the duplicated expressions (e.g., real play on the field and mediated scenes on the screen spectators are simultaneously watching), extensions of eyesight (e.g., extensions through close-up), and extensions of time (e.g., slow motion).

The aforementioned traditional screens have been developed in order to overcome a sense of distance. For example, what observers see in a painting is what the painters observed. Similarly, TV and movies lead viewers not to realize the distance from which they look at the mediated scenes by using a camera's point of view from various positions. Virtual reality has the function through which participants feel reality even though they watch an imaginary world. In other terms, the traditional screen, dynamic screen, and real-time screen are the examples of the long distance visual media known as "tele-vision" (Manovich, 2001). The traditional screen such as a painting is an observer's daily space and a window through which such an individual can reach to a new space. Such a traditional screen projects images that are unchangeable. The dynamic screen, a subdivision of the traditional screen, shows moving images in the past while maintaining the already existing attributes. As noted by Manovich, the real-time screen, a subdivision of the dynamic screen, keeps complimenting the current images.

However, the sport-mediated screen is not an example of tele-vision. Because sport spectators are already in the stadium, they do not need to see other remote images from the screen. In other words, the screen in a stadium is not a window through which spectators see the unseen apart from themselves, but a new mediated medium that allows spectators to see the real existence in stadiums from different ways. Therefore, the sport-mediated screen is not tele-vision but rather is "close-vision". Tele-visioning is not even necessary because the subject, the

sport-mediated screen, and sport spectators place 'live' in the same place together. To spectators as media recipients, a screen is nothing but equipment that helps them make sure the screen projects real plays or performances or re-present what they missed in reality. Thus, the sport-mediated screen remediates a telescope (not a binocular) and VCR more than television.

The sport-mediated screen as glance-media

Historically, a number of artists or technicians have tried to overcome the distance between the reality and representation by repeatedly pursuing remediacy (Bolter, 2006; Manovich, 2001). All media screens have always pursued immediacy, from Alberti's window to virtual reality, in order to attract individuals' eyes and place them in the screens. Throughout the process by denying the fact that they are mediating objects or by multiply the interfaces, they accomplish transparent immediacy (Bolter & Grusin, 1999). In addition, media audiences use various aspects of spectatorship, such as gaze and glance. Gaze refers to the state in which individuals keep their concentration on the enjoyment derived from images or the type of spectatorship in which individuals seem hypnotized by the enjoyment of image. Thus, as noted by Manovich, gaze is a typical example of movie spectatorship. In contrast, glance refers to the state in which an individual's attention is distracted (i.e., internal trait or external stimuli; TV spectatorship distracted by frequent advertisements or boredom) so that the flow of image or sound-receiving is sporadically interrupted or stopped. Glance can be interchangeably shown with gaze based on situations (Lee, J., 2004).

Media, such as paintings or movies or the Internet, exist in the center of the audiences' sights; paintings and TV express transparency or hyper-mediacy based on the assumption that individuals' sights are fixed on the media. Similarly, the dark lighting and huge screen in theatres and the Head-Mounted Display (HMD) virtual reality devices, control individuals' sights so that people are limited to divert their attention to other environments. In other words, people could not resist gazing at the screen. However, glance has always been the main spectatorship of the sport-mediated screen. The direction of the sight of sport spectators is always heading toward the game itself (immediate reality), while the screen is placed outside the reality. The sport screen is also different from virtual reality, as spectators are surrounded by reality, not the media environment, while spectators are surrounded by media in virtual reality. Therefore, in the stadium, spectators can watch the screen for the purpose of glance. Glance becomes the main media behavior with regard to sport-mediated screens. Spectators would show the patterns of glancing behavior when watching the screen because most of their focus is on the game. In the same manner, after glancing at sport-mediated screens, they return their focus to the reality (i.e., game or play on the field) immediately in order to gaze on the real game or play.

As mentioned previously, the sport-mediated screen remediates a telescope; not a binocular which closely covers an individual's two eyes. The sport-mediated screen prefers the patterns of glancing behaviors that allows spectators to intentionally control their eyes just like the telescope that needs only one eye. Consequently, the sport-mediated screen does not emphasize immediacy but hyper-mediacy in which it proactively reveals its presence that helps spectators paradoxically experience the authenticity of immediacy associated with the reality of a stadium.

Hyper-mediacy and the sport-mediated screen

Bolter and Grusin (1999) attempted to explain the immediacy and hyper-mediacy of new media with two perspectives: *desire of immediacy* and *fascination for media*. They further explain hyper-mediacy by noting that while "immediacy suggests a unified visual space, contemporary hyper-mediacy offers a heterogeneous space, in which representation is conceived of not as a window on to the world, but rather as windowed itself" (p. 34). Bolter and Grusin add that, "The logic of hyper-mediacy multiplies the signs of mediation and in this way tries to reproduce the rich sensorium of human experience" (p. 34). Based on this notion of hyper-mediacy, because spectators do not feel *the illusion* that images projected on the screen are real, there are several reasons why the sport-mediated screen should be considered a form of hyper-media.

First, in terms of the physical form of the screen and the way it is represented, the sport-mediated screen is a form of hyper-media because the screen partially represents original images; whenever it shows slow motion images, commercials, or the spectator stands at the sports venue, its reality exists outside the screen. Spectators would meet with the reality the moment they turn their attention from the screen. Further, they can recognize the reality while watching over the screen. Whatever images are being represented on TV or movie screens, however; such images would be regarded as reality.

Second, the sport-mediated screen is a form of hyper-media as the screen, as a structure, is the part of a sport stadium. In other words, the sport-media screen is regarded as media existing in one giant sport facility. It means that the sport-mediated screen, in terms of its presence, has already been in existence at the stadium before the spectators recognize and see it. Furthermore, the sport-mediated screen is similar to the movie screen in terms of size of screen. It does not, however, remediate the transparency of a movie theater. As the platform pursuing immediacy, the functional purpose of the wide movie screen in the theater is to get rid of its presence. Therefore, we sometimes forget about the presence of the screen while watching movie. However, compared to the movie screen, the sport-mediated screen reveals itself in a stadium, so that we already know its presence and pre-decide where to see it in the stadium in order to watch the game projected on the screen because we always recognize its presence.

The sport-mediated screen voluntarily reveals hyper-mediacy by its different way of projecting. While the sport-mediated screen is similar to the wide movie screen in terms of its appearance, its projection is more similar to TV which has a style of multi-expression method. For example, the sport-mediated screen in a stadium attempts to express various realities such as the process of how sporting games operate, time flow, game scores, or commercials, just like regular TV broadcasting. The sport-mediated screen also would like to relocate the audiences' attention from the ground by showing some visual information on the screen helping the spectators to be engrossed in a real game. It attempts to divert the audience focus from the game (or the pause in the game action) to the screen through revealing its presence.

Furthermore, the screen often presents scenes differently from the actual reality. For example, the dual display screen represents Team A on the left side and Team B on the right side of the screen, when Team A is, in fact, located in the right side and Team B is in the left side. The display on the screen depends on where cameras are positioned and how the affiliated camera images are displayed on the screen. Thus, spectators in the stadium can at times watch the game from the reverse angle as shown on the screen. On such occasions, spectators don't see the transparency of the screen so their glance at the screen is only for satisfying their interest.

Therefore, the true game experience in the stadium is watching the game itself; watching the screen is a supplementary and opaque medium.

In addition, in terms of the content represented on the screen, the sport-mediated screen is remediating the live broadcasting by TV or video games which gets immediacy through hyper-mediacy. Various hyper-mediated characteristics in TV (e.g., liveness, subtitles, time elapses, slow motion, multi-displays, commercials), as well as in videogames (e.g., life energy graphs in a shooting game, map in real-time strategic game), would be likely to become remediated by the sport-mediated screen and maximize the screen's hyper-mediacy.

Negligence for media

Bolter and Grusin (1999) suggested the fascination for the media is one of the important characteristics of hyper-mediacy. When hyper-mediacy is interpreted in terms of the relationship between media audiences and the purpose of the media use, in all reality hyper-mediacy should be interpreted as negligence for the media. Other media (e.g., paintings, video games, virtual reality) have been influenced and remediated by each other (Bolter & Grusin, 1999; Manovich, 2001). The main focus of the remediation has been on the redefinition of the interactions between represented images on screens and media audiences. Thus, regardless of media type, the primary purpose of media behaviors is the direct communications between audiences and the media. Even though we experience media directly during this process, the media sometime hide their presence in order to fulfill the purpose of mediating experiences. However, media in a stadium are quite different from other media in terms of the purpose of other media. Spectators do not visit the stadium to watch the sport-mediated screen; they visit the stadium to feel and experience the reality (i.e., the game itself). Thus, the sport-mediated screen does not exist for itself; it rather becomes a means through which people use reality to enhance their experiences. Its role is limited in that it just allows people to recognize the reality more than what the reality really is (i.e., an intensification of reality).

This unique purpose of the sport mediated screen is not due to the fascination for media but to the negligence for the media. The sport-mediated screen provides the images overlapped with reality and audiences are well aware of its purpose. Therefore, its location is always a little bit off from the center of people's primary interests; it expresses its presence by being totally ignored from the audiences' gaze. The sport-mediated screen does not brag that it is the only media in a stadium; it rather emphasizes its presence as a part of the entire media, the stadium. As the means to the end, the sport-mediated screen acknowledges its purpose and holds a position in a corner of the stadium in order to be exposed by people's glance.

Sport-mediated screen as a multimedia space

The sport-mediated screen uses the lighting system that has been adopted by the traditional scoreboard. The first scoreboards involved manual operations but now the modern digital displays are common, which remediate the characteristics of new media. The development of information technology has incorporated various types of information into one screen (Bolter & Grusin, 1999). The sport-mediated screen has maintained the traditional scoreboard system while separately operating an extra device providing video and image. Thus, the sport-mediated screen has a characteristic of hybridity by overlaying the real space and mediated space, just as has been done by the new and social media platforms.

Ambient TV extends the original functions of TV for private individuals into public services for the general public once installed in a public place. The origin of ambient TV goes back to the Berlin Olympic Games. The 1936 Summer Olympics were the first to broadcast live sporting events. Even though those Olympic Games were not full live broadcasting because there was a one-minute delay; the films were scanned and then transmitted. During the Olympics, specially devised broadcast vans recorded various competitions, and then the contests were broadcast in special viewing halls where 26 TV sets and two projection TVs were installed. A total of 162,228 people watched the Olympic Games free in the halls (Lee, K., 2004). According to Gripsrud (2002), 20,000 TV sets which were priced equivalent to the annual salary of many workers, were sold in the 1930s. However, most TV sets were sold to wealthy individuals, department stores, or high-class restaurants. Nevertheless, it should be considered as the early stage where TV was consumed by the public sector. From this perspective ambient TV is remediating the original characteristic of TV. Ambient TV and the sport-mediated screen have common characteristics in that both offer content to the general public who does not have a choice of TV channels.

Despite this similarity, there are obvious distinctions between ambient TV and the sport-mediated screen. The most obvious difference involves sound effects. The ambient TV installed in a public space is considered one multi-functional media because its major role is to provide information containing various sensory elements. Given that most TV viewers are familiar with audio information, media audiences may discount the value of sport broadcasting if it does not include audio information (i.e., commentary or noise from stadium). In contrast, the sport-mediated screen in a stadium often does not provide any audio information (e.g., play-by-play announcing) or sound (e.g., crowd noise) because it prevents the audiences (i.e., spectators in attendance) from enjoying the reality (i.e., game) as well as it may create a negative influence on the game operation. Spectators in a stadium are in reality, and any additional electronic sound or audio information may disturb their spectator experience as they want to experience reality with real sound. Thus, offering the sport-mediated screen with sound or audio information is usually discouraged.

Spectator gazing is different. The ambient TV's purpose is to be placed in front of the public gaze, the same as TV. The ambient TV needs to be presented in the visibility range that captures the public eye. Without purposeful gazing, it is almost impossible to complete the same narrative intended by TV because audiences would realize that they are standing in a different place from the mediated place shown on the ambient TV when they returned their attention. Therefore, the ambient TV needs to be placed in front of the audience to confirm its presence. However, sport-mediated screens usually occupy space outside the major direction of gazing; the audience watches it anytime by glancing at it when their needs arise. Even though audiences experience it through glance, they have minimal difficulty coming back to the reality.

Finally, reality is different. In contrast to the sport-mediated screen, audiences need to fix their attention to the screen in order to confirm the reality when they watch the ambient TV. Because where the ambient TV is set up (i.e., actuality) in a totally different place from the reality; when they divert their attention from the ambient TV, they come back to actuality, not reality mediated by TV. The reality presented by media exists in media, not the audience's actual life. The sport-mediated screen is reality itself because it exists in the reality that the screen presents. Therefore, the sport-mediated screen is not just TV in a public place but media simulating the reality.

Space, Place, and the Stadium Media

Stadium as media penetration

In the media ages, the *place* meant not just a physical or geographical location but a dematerialized area free from physical constraints (Wilken, 2008). The *place* exists in association with the human and was thus determined by social and culture practices such as the identity of languages, regional characteristics, or ways of life (Berland, 2005). Auge (1995), an anthropologist, argued that *non-place* is the place that does not provide anthropocentric functions or characteristics. According to Auge's research, the non-place is where people could experience mediated reality (e.g., hyper-mediacy). Non-place relates to the concept of temporary identity or a so-called traveler's identity. From this perspective, it could be argued that a stadium is a social and culture symbol of the non-place by the stadium screen. Thus, a stadium can be regarded as the super-modern (Auge, 1995) non-place as the extension of human life and is appealing to people because of the immediacy and authenticity of the stadium screen experience. The stadium itself is regarded as a theme and entertainment park within or near the metropolis where it is situated and the sound of audiences' cheering is the expression of anonymity in public. The stadium screen would be a new window for a new world as well as a reality in which one can confirm the mediated images shown on TV. In addition, the stadium screen as a mediator confirming texts, images, and sounds in reality while connecting spectators with each other.

According to Tuan (1977), the *space* generally has more abstract meaning than the *place*. When people have become knowledgeable about the space and can assign specific values in it then the space turns into place. Therefore, the space is connected with its potentiality and the place is related to the actuality (Hirsch, 1995). The stadium itself is non-place operating as a social space dominated by actuality (Auge, 1995) where one could experience the mediated reality exists only in the present; it may remediate other *non-places* like the amusement park, movie theater, or shopping plaza while creating a new mediated place simultaneously. By the stadium screen, the stadium now has become one media as a whole that transforms the stadium into the place.

Doubled illusion: Stadium as mixed space

Because the mediated space located in a screen of the second-dimensional space extends to reality, it is deemed to have mixed reality in which the mediated space and reality coexists. According to Manovich (2006), augmented space is defined as the physical space overlaid with various data and information stratifications. A stadium expands the real space and reality with various media platforms. For example, a huge screen in the stadium extends the reality by zooming in on or showing a specific spot, action, play, activity, etc. This is similar to the function of a microscope or camcorder. Multiple cameras in the stadium overcome the limitation of spectators' eyes and remediate the functions of closed-circuit television (Bolter & Grusin, 1999). By delivering this mediated space to the audience as a real experience, the mixed reality in which the actual space and augmented space coexist becomes possible. This is represented in Figure 1.

As for the case when viewers are watching a game on their televisions at home, the game is not the reality (i.e., actuality) in its originality but it is just a *mediated* reality because the viewers do not exist in the real or actual place where the sporting contest is being played. This mediated reality forces TV audiences to shape new types of reality by providing additional elements such

as commentary and statistics and to become part of the reality. Therefore, the mediated space becomes the real experience to the audience and acts as a representation of the experience of the stadium space. Through various stadium media platforms, the viewer naturally acknowledges there is more space than the space shown on TV, but the experience space is limited to only that which is projected by the TV.

Figure 1. Augmented space and mixed reality in a stadium with a sport-mediated screen
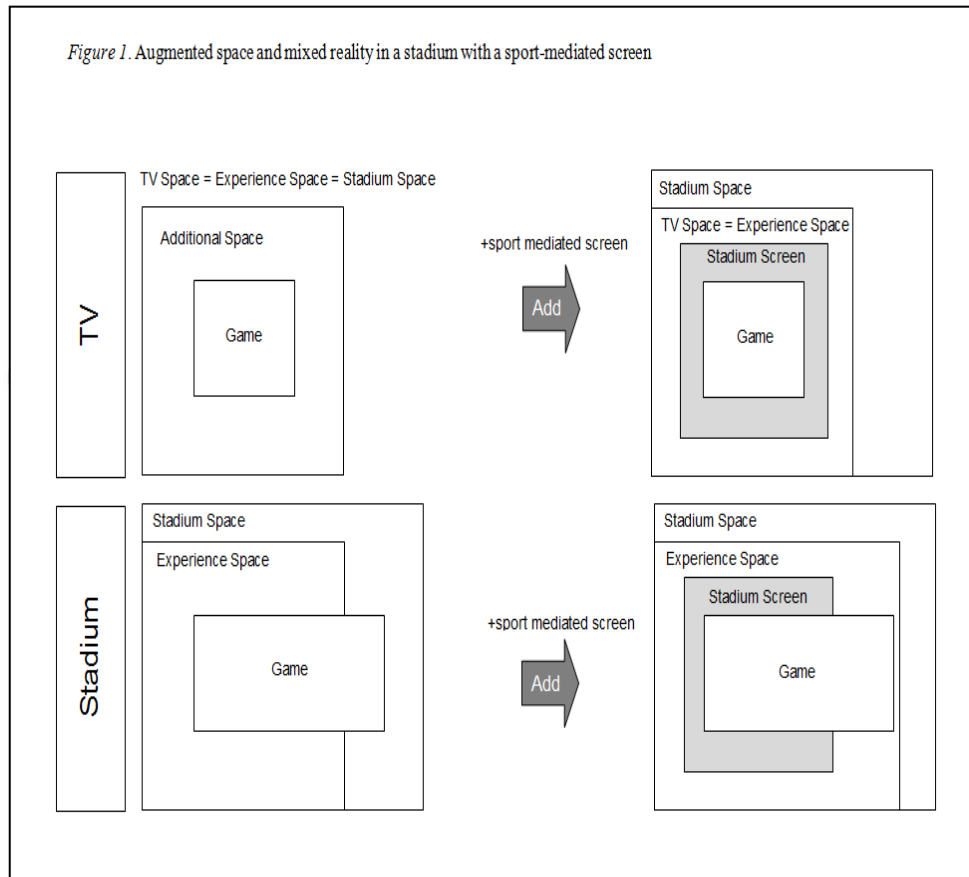
In contrast, when audiences sit in the stadium they – in reality (actuality) – recognize that the experience space becomes a part of the game. The stadium space always needs to be greater than the experience space, and the gathering of those experiences represents the reality of the stadium space. If the sport-mediated screen is added to the stadium space, the audiences' experience space would be much more augmented by the extra information provided by the screen. Therefore, this augmented space that could cover the real game would play a role as the stadium space.

In addition, as mentioned previously, the stadium is the space where real space and the space mediated by the sport-mediated screen exist simultaneously. Audiences check the sport-mediated screen by changing their attention. The sport-mediated screen is also virtual space existing in reality. Slow motion or the scene from where players stand on the sport-mediated screen allows the game to become much more real. Stadiums would be able to generate a 'doubled illusion' by providing the reality and virtual reality with the stadium screen; audiences

would be likely to experience the doubled illusion by frequently changing their attention from the reality to the virtual reality or vice versa. This doubled illusion emphasizes a true immediacy.

The Future Stadium and Its Identity

A sports ground (e.g., sporting facility) is usually called a stadium or arena. The term stadium is derived from a Greek word "stadion" and means a place where people stand. While the term arena is derived from the Latin word "sands" and represents a closed space where gladiators fight, the term is also used to identify a movie theatre, concert hall, or other setting that has an audience. For example, soccer games (as well as American football contests, track and field competitions, etc.) are typically held in stadia while basketball games (as well as hockey contests, online gaming challenges, etc.) are played in arenas. The term "stadium" or "arena" already connotes a space where audiences share and experience something in common. The stadium as the space for interactive experiences between audiences (e.g. attendees, fans), media and audiences, and the reality and audiences would place in the edge of hyper-mediacy through which one can achieve immediacy. Thus, the stadium, as a mixed reality in which real space and mediated space coexist, can be conceptualized as a type of space for cultural interface. As a representative media platform in the stadium, the sport-mediated screen has the following characteristics:

1) The sport-mediated screen is not the Alberti window for paintings and screens for TV, movies, the Internet, and virtual reality. Rather, the sport-mediated screen has the characteristic of hyper-mediacy.
2) The sport-mediated screen is not tele-vision but rather is more close-vision remediating a telescope.
3) The concept of *glance* (rather than *gaze*) has always been the main spectatorship of the sport-mediated screen.
4) The hyper-mediacy of the sport-mediated screen is not expressed by the fascination for the media but rather by the negligence for the media.
5) The sport-mediated screen is not just ambient TV but rather it is media itself in reality (i.e., actuality) and it becomes and escalates the reality as a simulator.

The sport facility has become a *ubiquitous stadium* (i.e., u-stadium) as a result of the development and integration of stadium nanotechnology and ubiquitous computing technology. In the near future (and to some degree this has already commenced in some high-tech seating areas in some of the most modern sport facilities), spectators will use a personalized sport-mediated screen through which they can watch their favorite TV channels or communicate with numerous cameras, sports equipment, and even players in the game that is taking place within stadium. The stadium will – and in some aspects has already – become *smarter* and more interactive. Furthermore, in the future it will be hard to distinguish between a sporting contest in a stadium and an e-sport (i.e., an electronic sport such as sport video games, sport computer games, and online sport games). Increasingly, e-sport remediates almost every aspect of the old customs of sport (e.g., competition, industry structure, media coverage) and also pursues the immediacy of *sport-likeness* in virtual reality. It means *ubiquitous sport* – or, u-sport as suggested by In and Kang (2005) – would be possible in communicating with players and sports equipment by using the ubiquitous computing technology adopted by e-sports. If the sport-related information is augmented by the media and becomes much more real than its original reality, however, u-sport then would become e-sport again. If this were to happen, then e-sport – beyond the non-place (i.e., non-anthropocentric place [Auge, 1995]) – would become a *no-one place* where humanity does not exist.

The principles of turning space into a meaningful place are situated within the interactions with the human being (Tuan, 1977). If there is no human involved in the sport space or there is no sport involved in the space, then the space just remains an isolated one. In this regards, if the sport-place does not involve humans – thus, being a *no-one place* – in its use of stadium media, it would likely remove sport and thus would return to just a non-meaningful space rather than a place. Regardless, while the future is always a wide open space that has potentiality (Hirsch, 1995), a clear understanding of this rapidly emerging new media era in sport and the various changes and potentials of stadium media are a good starting point for converting potential spaces into places that involve the human and the actual. Furthermore, the specific value creation by new media technologies and the identification of social and cultural meanings to the sport stadium are critical for sport (e.g., management, marketing, communication) scholars' understanding of current sport settings as the modern stadium has become a ubiquitous media place.

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