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Public Spaces and Augmented Perspectives
Jay David Bolter’s Oakland Cemetery Project

In the last chapter of the book *Brainstorms*, philosopher Daniel Dennett recounts a significant shift in the way he constructs physical space through an anecdote about his personal experience with brain surgery:

Being a philosopher of firm physicalist conviction, I believed unswervingly that the tokening of my thoughts was occurring somewhere in my brain: yet when I thought ‘Here I am,’ where the thought occurred to me was here, outside of the vat, where I, Dennett, was standing staring at my brain… Point of view clearly had something to do with personal location, but it was itself an unclear notion… what should we say about the point of view of the Cinerama viewer who shrieks and twists in his seat as the roller-coaster footage overcomes his psychic distancing?

Upon reading this, I began to recollect a roundtable discussion with Jay David Bolter that I participated in last year during his visit to York University in Toronto, Ontario. Bolter presented DART (the Designer’s Augmented Reality Toolkit) that he designed at the Georgia Institute of Technology and came to workshop some ideas on its uses and how to refine the system. Augmented reality (AR) involves the augmentation of a user’s physical space through the combination of real world and computer generated data. Bolter’s toolkit functions much like an editing program and is devised to allow designers to insert 3D objects and audio into the user’s natural environment. The user’s vision field combines the physical world with a computer generated one. The data is collected from goggles that the user wears and is read by the technology to produce a visual image on the goggles’ lenses created through what Bolter calls a “fiducial.” Essentially, fiducials are programmed through DART much like a language and translate into images once the signifier comes into the user’s field of vision.

The example I will be examining is called the Oakland Cemetery Project in Atlanta, Georgia, which allows users to visit the cemetery in a new way. The visitor is navigated around the natural setting of the cemetery wearing headphones whereby a narrator directs and tracks their movements via a tracking system that the user carries, while the narrator imparts significant historical/cultural information about the cemetery. The goal, according to Bolter, is to “enhance the visitor’s experience and make the visit more memorable.” Since the preliminary launch of the project, video has now been added via AR goggles, and the older tracking system has been replaced by a GPS system; this updated version not only allows the user to see virtual ghost-like figures around the real graves that they visit, but also relieves the need for a person to act as a mediator between DART’s tracking system and the user’s movements.
In the article “Presence and the Aura of Meaningful Places,” Bolter and his colleagues discuss some of the common problems they have surrounding the concept of presence or the sensation of ‘being there’ within a project – which brings me back to Dennett’s discussion of perspective, point of view and the cinema. The sensation of being there in virtual or mixed reality (VR, MR) installations like the Cinerama (a moving 3D theatre) is tied to the notion of presence which is defined as “a psychological state or subjective perception in which part or all of an individual’s… perception fails to accurately acknowledge the role of the technology in the experience.” Bolter notes that presence is something that augmented reality is given “for free,” since the subject can see and interact directly with the physical world and does not rely on a constructed space like most MR or VR projects. He defines the new interaction with the physical world, the “aura” of a space, which he defines as “the combination of its cultural and personal significance for a user or group of users.”

When presence, aura, and a user’s subjectivity are combined, the psychological response creates what Dennett would call an “illusory shift in point of view.” Bolter, however, finds that AR technology is still creating a conceptual blockage in its performance and blames the semiotics of the apparatus for part of its lack of believability. He states, “without a common framework and terminology for these aspects of places and objects, it is difficult to discuss the principle on which media experiences are based and thus learn from previous designs.” Therefore Bolter turns to classical cinema for formulaic structure. He explains that “new media designers can draw on the techniques of filmmakers (and other media) to engage the emotions of the user.”

Bolter’s interest in engaging the emotions of the user speaks directly to the theories of suture and apparatus theory in cinema studies – specifically through the corresponding definitions of presence and suture. While both suture and apparatus theory have their misgivings, they both involve a discussion of a spectator’s understanding of cinematic language, which I believe could aid in the development of a common framework for AR based narratives. My primary interest in suture and apparatus theory involves the notion of the point of view shot or modes of perspective in relation to a viewer’s interpolation into the diegesis. To explore suture, I will examine the writing of Daniel Dayan (who relies heavily upon Jean-Pierre Oudart’s founding theory of suture), and in relation to apparatus theory, I will discuss the work of Jean-Louis Baudry.

Suture theory came of interest in film theory after the publishing of several articles written in the 1977/78 Winter issue of Screen. Dialogue was provoked by the writings of Jean-Pierre Oudart, Jacques-Alain Miller, and Stephen Heath, which took up how a spectator’s reading of a film relied heavily upon their identification with the view points of the camera and seamless classical cinema editing techniques. Suture, for Daniel Dayan, is defined as “the system that negotiates the viewer’s access to the film” or the invisible structure that allows a user to ‘read’ a film. He explains in Lacanian terms that suture occurs at the junction between the imaginary and the symbolic for the spectator – the area where figurative codes are naturalized through the imaginary – allowing the representation to become normalized and therefore undetectable by the spectator. Dayan’s initial explanation of the spectator’s interpolation into the diegesis mirrors Bolter’s definition of presence through the normalization of the technological apparatus. Like presence, Dayan’s explanation of suture relies on the suspension of belief by the spectator, allowing the filmic experience to be accepted as ‘real.’ However, the problem for presence in AR is that there is a disjuncture occurring between
the imaginary and the symbolic plane of a user – mostly due to the lack of a code that can easily be read; therefore, the AR apparatus is unable to seamlessly disappear. There is a basic language in place through the DART system, but the variables change from project to project to accommodate a user’s needs. Therefore, Bolter seeks to identify the gap that is taking place between the subject and the apparatus in order to suture the two together. However, there is a specific “epistemological break” between cinematic suture and that of AR, specifically through the use of editing.

The shot/reverse-shot editing structure that both Dayan and Oudart use in their explanation of suture theory involves the discovery of the frame by the viewer through the point of view shot. By occupying the space of the other or the absent one, the spectator begins to distrust the frame/camera and asks, “Who is watching this?” The spectator can only be sutured back into the narrative through the responding reverse-shot which reveals the “fictional owner of the glance corresponding to shot one.” The position of the absent one that is taken up in Dayan’s suture theory is interesting to consider with the Oakland Cemetery Project – the user is always within the point of view of the absent one. They are constantly the point of subjectivity throughout the experience and therefore the absent one shifts to one that is created through the voiceover narrative which navigates them through the space. Identification for the AR user occurs when the narrator’s directions correspond with the user’s field of vision. Therefore, the frame in AR is that of the goggles, while the screen is replaced by a combination of the physical world and fiducials.

When considering the word fiducial in relation to fiduciary, one can see the correlation: while fiduciary can mean a system of markers in a field of view for an optical instrument, there is also the definition of trust to consider. While the encoder entrusts the fiducial with a 3D image, the user is asked to accept or trust this image via his or her relationship with the symbolic and the imaginary. Yet, how does the user trust this image in relation to his real surroundings? Upon meeting virtual ghosts at their respective real graves and being told their personal stories, the spectator weaves in and out of active and passive modes of spectatorship, which continuously alter the relationship between self and other or spectator and active user. While the user has the ability to wander through a physical space, it is at the disposal of the overarching system. The experience evokes a similar question to that which Dayan proposes – what is this apparatus withholding from the user?

The early version of the Oakland Cemetery Project involved what Bolter’s team calls the “Wizard of Ozing” effect where a person navigates the tracking system between the DART system and the movements of the user. Therefore, the user is being marionetted between the voiceover of the narrative and the apparatus itself. This is interesting to consider in relation to Baudry’s contribution to apparatus theory through the discussion of cinema’s stationary positioning of the spectator. Bolter’s users may move, and yet are shackled to the apparatus through not only having to wear it (the goggles, headphones, and GPS tracking device), but also through the omniscient voiceover of the narrator. As Christian Metz points out in *The Imaginary Signifier*, the spectator’s identification is matched with the camera through its position and movements, which mimic the body and head movement of a viewer. Therefore, the disembodied spectator that both Metz and Baudry refer to in their discussion of apparatus theory now finds his body in AR projects. However, although there is freedom for the user to move physically, it is only because the screen is now on his body via the goggles. Therefore AR’s new frame and screen space is created through the goggles, the physical space in which the user explores, and the fiducials, which mark a 3D space that will interact with the
latter two. However, what is not addressed is how these disparate fields will be sutured together to create presence.

Dayan notes in the final paragraphs of his article that “The cinematographic level fools the spectator by connecting him to the fictional level rather than the filmic level.” Similarly, Anne Friedberg notes in her book *The Virtual Window* that David Bordwell and Kristin Thompson’s discussion of “the techniques of narration” as a device employed classical Hollywood cinema to seamlessly unify a spectator’s vantage point.

Bordwell and Thompson’s theory hinges on the narrative playing to the spectator’s perspective, which remains unified throughout shifts in shot positions. Although AR does not function cinematically through visual editing techniques, Bolter does use certain techniques of classical cinema narration as cues for specific emotional user responses.

I would argue that the combination of the aura of the cemetery with the user’s perspective evokes certain cinematic cues in the user. The AR user that participates in the Oakland Cemetery Project is both user/spectator, camera, and screen. Therefore, the user’s vision field mimics the point of view shot. Bolter, using the natural aura of the cemetery, evokes certain Western stereotypes pertaining to myths surrounding the dead and their resting grounds.

Kaja Silverman points out in her essay “On Suture,” that the “rules of cinematic expression” that Stephen Heath discusses in his essay “Notes on Suture,” are best explained as three stages of meaning: one, the preconstruction — cinema’s common narrative structures; two, the construction of a specific new subject and goal; and three, the reconstruction or the suturing of the meanings.

Heath’s stages rely on cinematic cues (which are often very genre related) that the spectator has previously experienced to aid in their acceptance of a new ordering in meaning. Moreover the continuity in editing and composition highlighted in Bordwell and Thompson’s theory of narration is stretched further in Heath’s discussion to include genre specific techniques.

It is interesting to note that Silverman uses Alfred Hitchcock to discuss suture and more specifically the point of view shot. Hitchcock’s ominous use of the POV leads a viewer to adopt the viewpoint of his antagonists, which positions the spectator to witness the reaction of his victims. It is the ambiguity of the point of view shot which evokes anxiety within the spectator due to the fact that he is often being positioned to identify with a frame of reference without a well defined visual identity in the diegesis. In her analysis of *Psycho* for instance, Kaja Silverman points out that “The narrative moves forward and acts upon the viewer only through the constant imitation of something which has not yet been fully seen, understood, revealed: in short, it relies on the inscription of a lack.” The lack in Bolter’s project takes on several different forms through the voiceover of an unknown male voice, and through the absence of the dead who can only be represented through computer generated images and brought to life by cultural myths. Silverman notes that, “narrative… represents a much more indispensable part of the system of suture. It transforms cinematic space into dramatic place, thereby providing the viewer not just with a vantage point, but a subject position.”

Bolter similarly uses narrative to evoke the aura of the Oakland Cemetery and transform it into a dramatic place through the cultural stigmas and ideologies that surround graveyards in Western culture. Through the use of narrative techniques specific to the horror or psychological thriller...
As mentioned earlier, the user’s subjectivity in AR is his own. He becomes the camera. Cues thereafter can be embedded in both audio and visual techniques to evoke a specific emotional reaction to a medium. For instance, Bolter relies heavily on the audio soundtrack to provide sound effects and also direction. The unidentified male voiceover accompanying the user in the experience of the cemetery is one of the ways in which the project provokes Heath’s idea of the preconstruction or preexisting cinematic form. The aura of the cemetery provokes a user’s image and audio archive of the cultural myths, and relies on other media experiences, such as previously seen horror or thriller films to act as a platform of knowledge from which he can understand his role within the AR experience.

As the user is moved throughout the project, a nervous curiosity builds until the final grave when he comes face to face with the gravestone of the voice in his ear: Franklin Miller Garrett – a former historian of the city. As Ron Tamborini points out, part of the anxiety created in horror is the inevitable progression of the plot towards an unknown end where all (or depending on the style of the horror film) or nothing will be revealed. The combination of the audio and cinematic references with the ghost-like figures in the real space creates a fertile ground for a user’s imaginary.

Bolter’s attempt to interpolate a user through both form and narrative via the horror film is a good choice, seeing as horror films are known to evoke the greatest emotional response from moviegoers. Bolter is also making a smart choice in terms of the technical capabilities of the DART system at this stage in its development. Often the 3D objects created by the fiducials are jumpy and have a flicker effect. While in some projects this would be seen as a downfall, it heightens the mystique of the ghost-like figures in the Oakland Project. Moreover, to distract the user from the peripherals such as the headphones and the GPS tracking system, the project uses the cues of an extremely reactionary genre of cinema.

In closing, Bolter’s Oakland Cemetery Project seems to rely on two key elements: the user’s knowledge of cinematic cues and the techniques of narration. Looking back at some of Bolter’s previous research, specifically his book *Writing Space: The Computer, Hypertext, and the History of Writing*, it seems natural that he would approach AR projects from a semiotic point of view. With the cinema being one of our most popular forms of media and having one of the most ‘readable’ formulaic structures, it seems reasonable to revisit suture and apparatus theory as a programmer begins to map the relationship of AR media in relation to its user. Much like the relationship between cinema and theatre, AR needs to look back at earlier modes of media to map out a structure to spring from and create a logical bridge of knowledge for its users to relate to. Moreover, while this paper merely ruminates on the differences and similarities between old and new forms of media, I believe it is an important step in brainstorming the relationship a user could possibly have with this new form of screen-less media.

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Notes


3. Ibid.

4. Ibid.

5. Ibid.

6. IJsselsteijn, 5.


8. Ibid.


10. Ibid., 123.

11. Ibid., 119.

12. Ibid., 125-6.

13. Ibid., 131.


17. Dayan, 129.


20. Ibid., 146.

21. Ibid., 146.

22. Ibid., 138.


24. Ibid., 103.