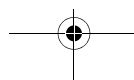


Systems of Spectatorship: Blast Theory's Aesthetic of Emergence

Rosemary Klich

Blast Theory productions, part game, part installation, part performance, enmesh the participant within an interactive performance system. They create complex environments in which spectators are co-authors, physically and creatively interacting with media, other players, and facilitators to develop and complete the work. This chapter will argue that Blast Theory disrupt the performer/spectator dialectic by creating a complex performance system that evolves into more than the sum of its components parts. Via theories of intermediation and complexity, the nature of audience interactivity will be illustrated as 'emergent', with the performance embracing an aesthetic of emergence. To support these complex systems, Blast Theory construct interactive environments that immerse the audience within the performance space whilst simultaneously encouraging reflection. The final section of this chapter will explore the audience's experience of collective creation and contemplative immersion in these complex systems of spectatorship.

Led by Matt Adams, Ju Ro Far and Nick Tandavanitj, Blast Theory explore pervasive gaming, interactivity and the relationship of real and virtual space, and since 2000 have worked with Nottingham University's Mixed Reality Lab, often utilising mixed realities within their works. Based in Brighton, the group "confronts a media saturated world in which popular culture rules, using video, computers, performance, installation, mobile and online technologies to ask questions about the ideologies present in the information that envelops us" (www.blast-theory.co.uk). They have created a number of works over the past fifteen years that utilise locative and mobile technologies and facilitate audience-generated content.

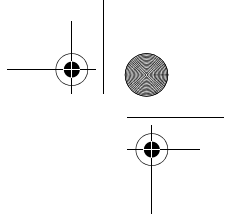


ROSEMARY KLICH

Can You See Me Now? (2001-2005), *Uncle Roy All Around You* (2003), *I Like Frank* (2004), and *I'd Hide You* (2012) map the virtual onto the actual presenting mixed-reality games that enable online players and live players to interact. The ambulatory works *Rider Spoke* (2007) and *Ulrike and Eamon Compliant* (2009) guide participants around city streets and either via live or recorded questions, provoke audiences to share their secrets and self-reflect. Works such as *Day of the Figurines* (2006) and *The Goody Bullet* (2010) use SMS messages as the forum for narrative based game play and require participants to create story content. The following exploration of the intermedial systems manifesting in such work will specifically address three Blast Theory works, one from each of the aforementioned groups: *Can you See Me Now?*, *Rider Spoke*, and *Day of the Figurines*.

Can You See Me Now? was the first of a sequence of Blast Theory works that took place both online and on the city streets and provided the format upon which later, similar works are based. *Can You See Me Now?* explores the ubiquitous presence of the virtual in our everyday lives as a result of media technologies, self-reflexively presenting the real and the virtual to address conditions of communication and posthuman existence in virtualised society. From various locations around the world, participants access an online virtual environment that replicates the streets of an actual city. Before accessing the virtual environment a loose narrative framework is established that requires players to answer the question: "Is there someone you haven't seen for a long time that you still think of?" At first this questions seems superfluous, but it introduces the concepts of absence and presence as the key themes of the work. Blast Theory explain: "this person – absent in place and time – seems irrelevant to the subsequent game play; only at the point that the player is caught or "seen" by a runner do they hear the name mentioned again as part of the live audio feed" (Blast Theory 2006).

As they navigate the virtual city they are chased by members of the Blast Theory team who appear as avatars but are actually using GPS tracking devices to track the participant around the streets of the real city. The online players must avoid the runners; if a runner gets within five meters of an online player, the player is "seen" and out of the game. When this occurs, the runner takes a digital photo of the real space where the participant was "seen" and this photo is displayed on the webpage. The online participants have certain tools at their disposal in the virtual world. The speed at which they can move through the virtual space is alterable though with a fixed maximum speed. They can access a city map view, and can see themselves represented in the form of a running avatar as if through the eyes of other participants. Participants are also able to see the avatars of other players and runners, and

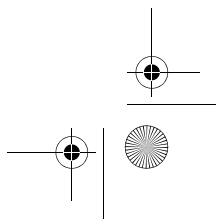
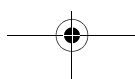
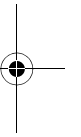
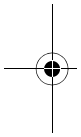


SYSTEMS OF SPECTATORSHIP: BLAST THEORY'S AESTHETIC OF EMERGENCE

can choose to exchange typed messages with them. This can evolve into the building of camaraderie between participants, which can be further explored through the strategies and proxemics employed over time. Online players are also able to hear the continual communication between the runners via their walkie-talkies as a live audio stream.

With a different interactive format and constructing a different relationship to the city, the ambulatory work *Rider Spoke* was originally developed in 2007 in collaboration with the Mixed Reality Laboratory at Nottingham University, Sony Net Services and the Fraunhofer Institute as part of IperG (Integrated Project on Pervasive Gaming). The original work was produced at the Barbican Centre in London as part of BITE (Barbican International Theatre Event) and it has since been reproduced in Athens, Brighton, Budapest, Sydney and Adelaide. To participate, audiences sign up for a particular time-slot and are invited to borrow a bike or bring their own on which to explore the city. On arriving at the starting location, participants are met by Blast Theory artists and the simple premise of the work is explained: participants are to navigate the city streets over the period of an hour, 'hiding' to record messages and listening to the recorded messages of others. After a safety warning, the signing of liability waivers, and the receipt of credit card details, the participant receives a handheld Nokia computer to be fixed to the bike's handlebars, a helmet, microphone and headphones. With the instruction to 'wait until the device contacts you', the rider embarks upon their tour of the city.

The instructions are to cycle through the city for one hour. What follows is a reflective exploration of the urban environment as one both a part of, and separate from, the events within the space. The screen asks you a question, 'Find somewhere you like and describe yourself' and it suggests you find a 'hiding place' in which to record your answer. There are two modes of interaction that manifest during the piece. The first requires participants to follow the suggestions of the voiceover and produce personal recordings. When the icon of a swallow appears on the interface, with its resonances of migration and regeneration, a 'hiding' place is revealed and, prompted by the facilitator's questions, participants are invited to record their perceptions, memories and observations to be accessed by other participants. Riders are directed to choose particular generic locations such as a building, or to look through a window, and describe their connections, real or imagined, to the objects, people and landmarks. The second interactive aspect invites riders to listen to the recordings of previous participants, their secrets, perceptions, worries and wishes. As cycling begins again, the stories act like a lens, colouring the way in which the city and its inhabitants are perceived. Reality is recorded and the recorded becomes



ROSEMARY KLICH

reality, the past and the present become one and the boundaries of the public and private merge as the rider navigates an archive, a repository of the city's stories.

Unlike *Rider Spoke* and *Can You See Me Now?*, which encourage participants to explore their relationship with a real city, *Day of the Figurines* takes place in a fictional town and follows a partially scripted storyline. The work accommodates up to 1000 players and takes place over 24 days. The players are represented in the game by small plastic figurines, which are moved around an enormous model town. On arriving at the installation, participants must select their figurine and answer a set of questions that personalize the character such as what is their favourite childhood place and what kind of shoes are they wearing. Players name their figurine and place them on the outskirts of town and at this point, are no longer required to be physically present at the site of the game. Participants control their figurine, their 'character', by sending text messages to the game's server and in reply they receive descriptions of what the character can see and hear as they move around the town. There are fifty different locations in the town that the participant can navigate such as cafés, nightclubs, hospitals and nuclear bunkers. They can choose where to go, find objects to use, and interact with other participants they encounter. Players are often presented with dilemmas to face, missions to complete and multiple-choice questions to answer. News about the town's events is posted on an accompanying website and players are responsible for the number of texts they choose to send. Each of the 24 days represents an hour in the fictional game world, and the time of the game and of reality becomes interwoven as when the phone beeps to indicate a new text message, the game world pervades everyday life.

Prior to the game, participants are informed that the goal of the game is to 'help others', but as the town slowly descends into chaos, players start to worry about helping themselves. There are a number of pre-scripted narrative elements such as an event at a fairground and a visit to a nightclub, and eventually an army sweeps in and occupies the town. However these elements are interspersed with more interactive content, with players having to make decisions that affect their health. Every character has a 'health score' and if players neglect their health they can become incapacitated. Players can also affect the health of others; on the one hand they can offer medical attention and on the other they can commit violence and actually kill other players. Decisions made by players affect both their own wellbeing and that of those around them and a complex community is formed. Patterns of behaviour and social dynamics emerge as players struggle with issues of morality, loyalty and responsibility. The game explores the relationship of the individual to the group

SYSTEMS OF SPECTATORSHIP: BLAST THEORY'S AESTHETIC OF EMERGENCE

and uses the anonymity of text messaging to create intimate connections between strangers.

To successfully engage with each of the three works discussed here, the audience use technological tools to navigate the performance space, controlling their own speed and path through the work. The technological interfaces that enable human connection and conversation are themselves a substantial and sometimes opaque aspect of the system. Network congestion or failing phone batteries delay text messages, the opportunity to record a message in *Rider Spoke* is reliant on working Wi-Fi 'hotspots', and to manipulate a virtual avatar using a keyboard is an acquired skill. However it is often such failures and frustrations that force participants to consider our relationship to these media. For example, in *Day of the Figurines* it is the pervasiveness of the SMS message and its contradictory associations of intimacy and anonymity, that enables the work to integrate with the everyday lives of the players.

All three works manifest different forms of interactivity using different media interfaces. However the experience of these three works is in each case one of connection – these works use interactive technologies to connect remote participants and explore the resulting sense of proximity. In each work the player is invited to contribute as part of a community and there is a strong sense of being a part of something bigger than the individual. Players must take responsibility for not just their own engagement with the work but also for the experiences and well being of others. In *Rider Spoke* the quality and nature of the messages you leave will affect the experience of other participants. In *Can You See Me Now?* online players are aware of the fact that their interaction places the bodies of the live runners at risk, and in *Day of the Figurines* players may choose to save or kill their community members. The individual player operates as part of a larger participatory system made up of other players, narrative elements, and media operations.

It is a system that spans the real and the virtual, the live and the recorded, fiction and reality. As audience members experience a non-hierarchical simultaneity of live and mediated content, effects of pattern, rhythm, and resonance transcend media boundaries. They interact with, and become part of, an intermedial system. The 'inter' of intermediality implies reciprocity, with two or more media coming together in conversation. Intermediality can be both a creative and an analytic approach based on the perception that media boundaries are fluid and recognising the potential for interaction and exchange between the live and the mediated, without presupposing the authenticity or authority of either. Most importantly, intermediality relates to a form of audience reception enabled when

ROSEMARY KLICH

communication is patterned across various media, creating a multidimensional performance text.

The notion of intermediality is a key focus within various areas of theatre and performance studies with recent publications such as Lars Ellestrom's edited *Media Borders, Multimodality and Intermediality* (2010) and Sarah-Bay Cheng et al's collection *Mapping Intermediality in Performance* (2010) contributing to a growing body of discourse. The manifestation of intermedial systems in Blast Theory's participatory works may also related to the notion of 'intermediation' as discussed in new media discourse, as articulated by Katherine Hayles in her book *My Mother Was A Computer: Digital Subjects and Literary Texts* (2005) and in her article "Intermediation: The Pursuit of a Vision" (2007). Hayles describes intermediation as "complex transactions between bodies and texts as well as between different forms of media" and refers to the manifestation of intermediation as the "entanglement of the bodies of texts and digital subjects" (Hayles 2005: 7). In *My Mother was a Computer*, she explores the interactions of speech, writing and text in digital literature and the associated implications for the relation of language and code. She uses the term 'intermediation' as borrowed from Nicholas Gessler to denote the dynamic interactions between language, code, text, subject and media, and asserts, "Perhaps most importantly, intermediation also denotes mediating interfaces connecting humans with the intelligent machines that are our collaborators in making, storing, and transmitting informational processes and objects" (Hayles 2005: 33).

In *Can you see me now?*, *Rider Spoke*, and *Day of the Figurines*, intermediation develops another dimension as interaction occurs not just between user and media, but also between users via media. In *Can you see me now?* and *Day of the Figurines*, players use the media interface to interact with other players, composing a system formed of narrative lexia, media operations and human cooperation. In all three works, participants are able to make a creative and intelligent contribution to the work as a whole, responding to triggers and provocations offered by facilitators. The technology extends the capabilities of the human participants, and the communication of two or more participants via the technological extensions means that a dynamic two-way flow of information is created that is not predetermined. Participant-generated content is incorporated into the performance via processes of intermediation, altering the performance and instigating the development of further original content.

To understand the dynamic of interactivity and the interplay of human and technological elements in these works, it is possible look to theories of 'complexity'.

SYSTEMS OF SPECTATORSHIP: BLAST THEORY'S AESTHETIC OF EMERGENCE

Complexity Theory is a field of research that studies the way in which a group of interacting elements self-organise to create evolving, emergent system properties. The manifestation of intermediality in Blast Theory's work involves complex interactive systems. A complex system is a system composed of interconnected parts that, when working together, exhibit properties not obvious from the properties of the individual parts, i.e. it is more than the sum of its parts. Paul Cilliers describes complexity as 'dynamic and relationally intricate' (Cilliers in Gibson 202). To know a complex system you must experience it, to 'be with its changes through time, to feel its shifts whilst also being attuned to the historically determined tendencies and feedback patterns of stimuli and responses that organise it systematically' (Cilliers in Gibson 202). Examples of complex systems include ant colonies, climate, nervous systems, cells and living things, including human beings. In Blast Theory's work, complexity is fostered and facilitated through the use of media interfaces and narrative structures that force the competition, cooperation, and improvisation of participants.

In her discussion of intermediation, Hayles explains how informational dynamics between two elements can develop complexity. She explains that, within the sciences, intermediation involves a first level emergent pattern being captured and re-represented within a different medium with a different symbolic system, "which leads to an emergent result captured in turn by yet another medium, and so forth" (Hayles 2007: 100). It is such feedback, 'feedforward' (Hayles) dynamics of intermediation that produce complexity, and that may elucidate the creative spectatorship of the Blast Theory participant. The participant is given a provocation, an initial basis for interaction, which they interpret and develop into new content. Content is then captured within a different media platform, which in turn produces content based on a different symbolic system and rules of production: the participant engineers the work and the work engineers the participant's engagement. Hayles refers to such interactions as forming a 'dynamic heterarchy', a system in which different levels and media are continuously informing each other (Hayles 2007: 100). The system composed in Blast Theory's works develops complexity as intermediation occurs between participants, performers, media, narrative and environment, and the performance whole exists as a dynamic heterarchy.

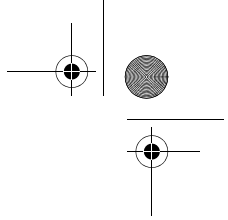
There is existing precedent for connecting theatre with theories of complexity. In 1997 Gordon Armstrong wrote an article titled 'Theatre as a Complex and Adaptive System' in which he argues that the functioning of human consciousness as it interprets theatrical performance is the "most highly selective and adaptive

ROSEMARY KLICH

mechanics known to physical science” (277). He views theatre here as a substrate of consciousness and his argument for complexity is based on the way in which the human brain makes sense of theatrical signs. In their article “Emergence and Complexity: Some observations and reflections on transdisciplinary research involving performative contexts and new media”, Dave Everitt and Alex Robertson explore the nature of transdisciplinary artistic collaboration. They analyse the behavior of groups of artists and determine strategies to facilitate emergent collaboration. They conclude, “There is potential in examining current research from the Social Sciences in cooperation, group behaviour and complexity to assess implications for collaborative groups in art-design-technology and performance work. From these tentative explorations it would be rewarding to deepen connections between the fields of performing arts, complexity science and design” (247-248). In *Rider Spoke*, *Can You See Me Now?*, and *Day of the Figurines*, Blast Theory bring the audience into a collaborative, emergent relationship with the performance that involves not just interpretation but active creation. Participants’ involvement entails physical action and their experience of the intermedial system is both affective and embodied.

There are a number of properties that define a complex system – the adaptability of components, the self-organisation of elements, and the production of ‘emergence’. It is the manifestation of these properties identified in the three works discussed here that qualify the intermediality and audience participation as inherently complex. The various components within the intermedial system are adaptive: human beings respond, decide, and react to each other, to the narrative development, and to the media operations. The narrative is open to audience-generated content, and the media interfaces are inherently reactive, though it is the human element in this system that is able to adapt and improvise. Self-organisation occurs in the way that participants connect with each other, strategizing to work together or structuring a competitive relationship. In *Day of the Figurines*, individuals form groups and develop particular narrative tangents. In *Rider Spoke*, individuals visit the same locations and generate connections in their recorded stories, and in *Can You See Me Now?* runners and online players use tactical alliances to compete in groups and even develop a particular group vocabulary.

The elements of this intermedial system – the live bodies, the participant’s intentionality, the narrative components, and the media operations, combine and create synergy (that is, a product not quite explained by the simple addition of ingredients). Aristotle says in his metaphysics: “the totality is not, as it were, a mere heap, but a whole is something besides the parts...” (Aristotle 8-10). The intermedial,



SYSTEMS OF SPECTATORSHIP: BLAST THEORY'S AESTHETIC OF EMERGENCE

interactive system of these performances, forms a whole greater than its parts, producing unforeseen patterns and behaviours. These works manifest an aesthetic of 'emergence.' The term "emergent" was coined by psychologist G.H. Lewes, who wrote: "that emergents, instead of adding measurable motion to measurable motion, or things of one kind to other individuals of their kind, there is a co-operation of things of unlike kinds. The emergent is unlike its components insofar as these are incommensurable, and it cannot be reduced to their sum or their difference" (Lewes 412). Blast Theory showcase an aesthetic of emergence, emphasizing how an intermedial system produces unique combined effects.

In their book *Complex Systems*, in a section looking at the variability and survivability of natural living systems, Terry R. J. Bossomaier and David G. Green state:

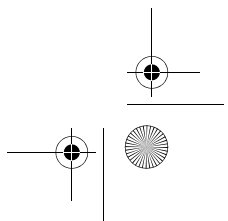
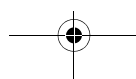
When the growth of a population of different interacting living systems is correlated the systems *coevolve*. The more complex the coevolving entities become, the more complex their interaction. Being more complex, evolving beneficial emergent traits may mean having more chance to survive and reproduce. In some cases becoming more complex could be the only way to stay in the game. (108)

The pleasure of the experience for audience members enmeshed in the complex intermedial system is one of coevolution. Participants experience a sense of shared growth and development, as they together are responsible for the creation of the work.

They become part of a performance community. In the article "The Virtual And the Vivid: Reframing the issues in interactive arts" (2010), Miroslaw Rogala suggests,

An interactive triangulation among artist, (v)user and accompanying (v) user(s) holds the potential for creating a new level of audience satisfaction when the (v)user is no longer in isolation. Edwin Schlossberg describes this ideal: 'When that interaction occurs, not only can the audience properly experience the presented material, it can also sense itself as being part of an interesting community' (300).

However the pleasure of participation in these Blast Theory works does not only involve a sense of inclusion in a community, but the recognition of intelligent agency and shared responsibility for creating the performance. In his challenge to the presupposition that theatre is inherently communitarian, Jacques Rancière



ROSEMARY KLICH

argues that, “in a theatre, in front of a performance, just as in a museum, school or street, there are only ever individuals plotting their own paths in the forest of things, acts and signs that surround them” (16). The idea of a ‘system’ allows for an understanding of the individuality of the contributing elements, whilst also recognizing that the interactions of these components produce an emergent ‘whole’.

The experience for the participants is one of cooperating, collaborating, and co-evolving with other humans, narrative elements and media within the framework of a ‘game’ to create the performance whole. Janet Murray explains the evolution of video games within the context of human evolution, and explores the significance of computer/video-gaming as a cultural phenomenon. Following Tomasello’s (2000) anthropological argument that the evolution of human cognition involves the recognition of conspecifics (other members of the species) as “intentional agents”, Murray suggests that successful gaming involves a basic understanding that other agents have intelligent awareness and intentionality. The situation in which a shared understanding of intentionality leads to the development of culturally transmitted knowledge is called a “joint attentional scene” (Murray 189). Murray argues that as joint attentional scenes elaborate into ever more complex games, they set up “opportunities for performance, for presenting the self as a performer in a socially constructed arena, and for incorporating multiple individuals into flexible but predictable group structures” (192).

The experience of participation in Blast Theory’s interactive performances is intrinsically social and celebrates intentionality. Each of the Blast Theory productions addressed in this chapter require the audience to invest in the work, invest time, energy, creativity and commitment to ensure the growth of the product. Individuals, through opportunities to generate content and make choices, are recognised as intelligent agents and are rewarded with responsibility for the successful generation of the performance product. The experience of collaboration and co-production in Blast Theory productions provides a sense of ownership unique to such works. There is pleasure in the shared focus of attention, the unpredictability of content generated, and the shared process of creative production.

Also shared is a space, a constructed social space that is both separate from and parallel to everyday reality. Participants are immersed in the space of the performance, which in *Day of the Figurines* is also a narrative space, without detachment from reality: one is both immersed as part of the system and simultaneously aware of being immersed. Within a complex system we experience it both immediately and hypermediately. Bolter and Grusin assert that remediation is characterised by the two logics of ‘immediacy’ and “hypermediacy”, which relate to the spectator’s

SYSTEMS OF SPECTATORSHIP: BLAST THEORY'S AESTHETIC OF EMERGENCE

level of immersion in the media content and their awareness of an object's "mediatedness" (273). Immediacy occurs when media is transparent. The aim of hypermediacy on the other hand, is to remind the viewer of the medium and so the medium will draw attention to itself and to its distinct form of mediation. In a work like *Can You See Me Now?* the audience is drawn into the virtual world and are immediately committed to the scenario, but they are simultaneously aware of the process of mediation and communication, and so also experience hypermediacy. In *Rider Spoke*, participants are immediately immersed in the sound scape and stories they are listening too, but they are also aware of the way these stories are affecting their perception of the urban environment. Like a *flâneur* is both of the world and separate from it, so the rider in *Rider Spoke* is both of the work, and simultaneously reflecting on it.

The sense of immersion is subjective so it is difficult to generalise as to the nature of immersive experience. While all immersion must be considered spatial, it is more than mere topographical navigation. While immersion may involve empathy and emotion, it is more than mere escapism. Immersion is primarily a state of sensory saturation, yet it is more than physical bombardment. In the works discussed here, immersion in the spectatorial system is both embodied and mindful. Traditionally, immersion has been understood as mindless, as involving emotional rapture as opposed to critical thought and reflection. Frank Popper describes the kind of immersion we experience in drama as "diminishing critical distance from what is shown and increasing emotional investment in what is happening" (Popper 180). Particularly with regards to digital art, there is an assumed dissolving of the space for analysis in the encounter with the artwork: Oliver Grau posits, "in certain seemingly living virtual environments a fragile, central element of art comes under threat: the recipient's act of distancing," which is essential for enabling critical reflection (Grau 304).

To contemporary audiences, and particularly those interested in media art, the idea of "contemplative immersion" might sound like something of a paradox. We are more accustomed to the idea that contemplation is somehow opposed to immersion. Unlike the bodily sensations of immersion, when we contemplate we are meant to be rational, collected, in control. The notion of 'contemplative immersion' was an idea reflected upon by both Walter Benjamin and Theodor Adorno. Daniel Palmer, in his article "Contemplative Immersion: Benjamin, Adorno and Media Art Criticism", looks at the two philosopher's contrasting understandings of 'contemplation', and Adorno's is particularly relevant to this discussion. In *Aesthetic Theory* Adorno writes, "Through *contemplative immersion*

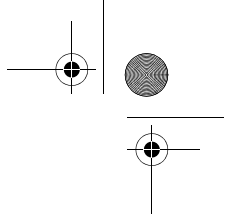
ROSEMARY KLICH

the immanent processual quality of the work is set free...” (Adorno in Palmer). His aesthetic theory is traditional, asserting that the significance of the artwork lies within it awaiting discovery, but his description of how the processual quality of the work is accessed via mindful immersion relates to how the spectator experiences the intermedial system in Blast Theory performances.

Contemplative immersion is a state of being in which one develops an awareness of the self through proximal experience of the other, osmotically absorbing and intuitively responding whilst simultaneously reflecting on this process. In *Can You See Me Now?*, *Rider Spoke*, and *Day of the Figurines*, the participant is both immersed within the performance system, and aware of their immersion, encouraged by the Blast Theory provocateurs to reflect upon their choices and contributions. It is a performance system that allows for individual agency, but illustrates the emergent consequences of individual choices as they are intermediated into the performance whole. The participant is free to associate and disassociate, their intentionality as an individual recognised, and yet they are simultaneously aware of their function as an element in an intermedial system through which emergent performance is produced.

Works Cited

- Aristotle. *Metaphysics*, trans. W. D. Ross. Oxford: Oxford University Press, 1924.
- Armstrong, G. “Theatre as a Complex and Adaptive System.” *New Theatre Quarterly* 13 (1997): 277-288.
- Bay-Cheng, S., C. Kattenbelt, A. Lavender, and R. Nelson (eds.) *Mapping Intermediality in Performance*. Amsterdam: Amsterdam University Press, 2010.
- Blast Theory. *Can You See Me Now?* (www.blasttheory.co.uk/bt/work_cysmn.html) accessed August 2006.
- Bolter, J., and R. Grusin. *Remediation: Understanding New Media*. Cambridge Mass.: The MIT Press, 2000.
- Bossomaier, T. R. J., and D.G. Green (eds.) *Complex Systems*. New York: Cambridge University Press, 2000.
- Ellestrom, L. (ed.) *Media Borders, Multimodality and Intermediality*. Basingstoke: Palgrave MacMillan, 2010.
- Everitt, D., and A. Robertson. “Emergence and Complexity: Some observations and reflections on transdisciplinary research involving performative contexts and new media.” *International Journal of Performance Arts and Digital Media*, 3:2 and 3:3 (2007) *JSTOR*. Web. 20 May 2012.
- Gibson, R. “Changescapes” in Attiwill, S., Lee, G., Franz, J. (eds.) *IDEA Journal* (2005). <http://www.idea-edu.com/alt_content/pdf/2005/Professor_Ross_Gibson.pdf>. Accessed 1st August 2006.



SYSTEMS OF SPECTATORSHIP: BLAST THEORY'S AESTHETIC OF EMERGENCE

- Grau, O. "Immersion and Interaction: From circular frescoes to interactive image spaces." *Media Art Net 1/A Survey of Media Art*. Eds. R. Frieling and D. Daniels 2004. 292-313. <www.medienkunstnetz.de/themes/overview_of_media_art/immersion/scroll/>. Accessed 10 June 2012.
- Hayles, K. *My Mother Was A Computer: Digital Subjects and Literary Texts*. Chicago: University of Chicago Press, 2005.
- Hayles, K. "Intermediation: The Pursuit of a Vision." *New Literary History*, 38:1 (2007): 99-125.
- Lewes, G. H. *Problems of Life and Mind*. London: Trubner, 1875.
- Murray, J. "Toward a Cultural Theory of Gaming: Digital Games and the Co-Evolution of Media, Mind, and Culture." *Popular Communication*, 4:3 (2006): 185-202 (www.lcc.gatech.edu/~murray/PC0403_Murray.pdf) accessed 15 June, 2012.
- Palmer, D. "Contemplative Immersion: Benjamin, Adorno and Media Art Criticism." *Transformations* 15 (2007). <http://www.transformationsjournal.org/journal/issue_15/article_11.shtml>. Accessed 15 May 2012.
- Popper, F. *From Technological to Virtual Art*. Cambridge, Mass.: MIT Press, 2007.
- Ranciere, J. *The Emancipated Spectator*. London: Verso, 2009.
- Rogala, M. "The Virtual and The Vivid: Reframing the issues in interactive arts." *Technoetic Arts: A Journal of Speculative Research*, 8:3 (2010): 299-309.

