NYUSteinhardt
Steinhardt School of Culture, Education, and Human Development

Operational & Curatorial Research

LEONARDO
THE INTERNATIONAL SOCIETY FOR THE ARTS, SCIENCES AND TECHNOLOGY

Sabancı Üniversitesi

Goldsmiths
UNIVERSITY OF LONDON

LEA

LEONARDO ELECTRONIC ALMANAC

VOL 19 NO 3 VOLUME EDITORS **LANFRANCO ACETI, STEVE GIBSON & STEFAN MÜLLER ARISONA** EDITOR **ÖZDEN ŞAHİN**

Live visuals have become a pervasive component of our contemporary lives; either as visible interfaces that re-connect citizens and buildings overlaying new contextual meaning or as invisible ubiquitous narratives that are discovered through interactive actions and mediating screens. The contemporary re-design of the environment we live in is in terms of visuals and visualizations, software interfaces and new modes of engagement and consumption. This LEA volume presents a series of seminal papers in the field, offering the reader a new perspective on the future role of Live Visuals.

LIVE VISUALS

LEA is a publication of Leonardo/ISAST.

Leonardo Electronic Almanac
Volume 19 Issue 3
July 15, 2013
ISSN 1071-4391
ISBN 978-1-906897-22-2
The ISBN is provided by Goldsmiths, University of London.

Cover Image
The Encounter, Elif Ayiter, 2010, Screenshot of Cinematic Play Session in Second Life. © Elif Ayiter. Used with Permission.

Editorial Address
Leonardo Electronic Almanac
Sabanci University, Orhanli – Tuzla, 34956
Istanbul, Turkey

Email
info@leoalmanac.org

Web
» www.leoalmanac.org
» www.twitter.com/LEA_twitts
» www.flickr.com/photos/lea_gallery
» www.facebook.com/pages/Leonardo-Electronic-Almanac/209156896252

Leonardo Electronic Almanac is published by:
Leonardo/ISAST
211 Sutter Street, suite 501
San Francisco, CA 94108
USA
Leonardo Electronic Almanac (LEA) is a project of Leonardo/The International Society for the Arts, Sciences and Technology. For more information about Leonardo/ISAST's publications and programs, see http://www.leonardo.info or contact isast@leonardo.info.

Leonardo Electronic Almanac is produced by Passero Productions.

LEONARDO ELECTRONIC ALMANAC, VOLUME 19 ISSUE 3

Live Visuals

VOLUME EDITORS
LANFRANCO ACETI, STEVE GIBSON & STEFAN MÜLLER ARISONA

EDITOR
ÖZDEN ŞAHİN

The Leonardo Electronic Almanac
acknowledges the kind support
for this issue of

Sabancı Üniversitesi

KASA GALERİ

Goldsmiths
UNIVERSITY OF LONDON

Operational & Curatorial Research in Contemporary Art, Design, Science & Technology

NYUSteinhardt
Steinhardt School of Culture, Education, and Human Development

ISSN 1071-4391 ISBN 978-1-906897-22-2

Leonardo Electronic Almanac

Volume 19 Issue 3

 ISSN 1071-4391 ISBN 978-1-906897-22-2

ISSN 1071-4391 ISBN 978-1-906897-22-2

When Moving Images Become Alive!

"Look! It's moving. It's alive. It's alive... It's alive, it's moving, it's alive, it's alive, it's alive, it's alive, IT'S ALIVE!"
Frankenstein (1931)

Those who still see – and there are many in this camp – visuals as simple 'decorations' are living in a late 19th century understanding of media, with no realization that an immense cultural shift has happened in the late 20th century when big data, sensors, algorithms and visuals merged in order to create 21st century constantly mediated social-visual culture.

Although the visuals are not actually alive, one cannot fail to grasp the fascination or evolution that visuals and visual data have embarked upon. It is no longer possible to see the relationship of the visual as limited to the space of the traditional screens in the film theater or at home in the living room with the TV. The mobility of contemporary visuals and contemporary screens has pushed boundaries – so much so that 'embeddedness' of visuals onto and into things is a daily practice. The viewers have acquired expectations that it is possible, or that it should be possible, to recall the image of an object and to be able to have that same object appear at home at will. The process of downloading should not be limited to 'immaterial' digital data, but should be transferred to 3D physical objects. [1]

Images are projected onto buildings – not as the traditional trompe l'oeil placed to disguise and trick the eye – but as an architectural element of the building itself; so much so that there are arguments, including mine, that we should substitute walls with projected information data, which should also have and be perceived as having material properties (see in this volume "Architectural Projections" by Lukas Treyer, Stefan Müller Arisona & Gerhard Schmitt).

Images appear over the architecture of the buildings as another structural layer, one made of information data that relays more to the viewer either directly or through screens able to read augmented reality information. But live visuals relay more than images, they are also linked to sound and the analysis of this linkage provides us with the opportunity "to think about the different ways in which linkages between vision and audition can be established, and how audio-visual objects can be composed from the specific attributes of auditory and visual perception" (see "Back to the Cross-modal Object" by Atau Tanaka).

iPads and iPhones – followed by a generation of smarter and smarter devices – have brought a radical change in the way reality is experienced, captured, uploaded and shared. These processes allow reality to be experienced with multiple added layers, allowing viewers to re-capture, re-upload and re-share, creating yet further layers over the previous layers that were already placed upon the 'original.' This layering process, this thickening of meanings, adding of interpretations, references and even errors, may be considered as the physical process that leads to the manifestation of the 'aura' as a metaphysical concept. The materiality of the virtual, layered upon the 'real,' becomes an indication of the compositing of the aura, in Walter Benjamin's terms, as a metaphysical experience of the object/image but nevertheless an experience that digital and live visuals are rendering increasingly visible.

"Everything I said on the subject [the nature of aura] was directed polemically against the theosophists, whose inexperience and ignorance I find highly repugnant. . . . First, genuine aura appears in all things, not just in certain kinds of things, as people imagine." [2]

The importance of digital media is undeniably evident. Within this media context of multiple screens and surfaces the digitized image, in a culture profoundly visual, has extended its dominion through 'disruptive forms' of sharing and 'illegal' consumption. The reproducibility of the image (or the live visuals) – pushed to its very limit – has an anarchistic and revolutionary element when considered from the neocapitalistic perspective imbued in corporative and hierarchical forms of the construction of values. On the contrary, the reproducibility of the image when analyzed from a Marxist point of view possesses a community and social component for egalitarian participation within the richness of contemporary and historical cultural forms.

The digital live visuals – with their continuous potential of integration within the blurring boundaries of public and private environments – will continue to be the conflicting territory of divergent interests and cultural assumptions that will shape the future of societal engagements. Reproducibility will increasingly become the territory of control generating conflicts between *original* and *copy*, and between the layering of *copy* and *copies*, in the attempt to contain ideal participatory models of democracy. The elitist interpretation of the aura will continue to be juxtaposed with models of Marxist participation and appropriation. [3]

Live visuals projected on public buildings and private areas do not escape this conflict, but present interpretations and forms of engagements that are reflections of social ideals. The conflict is, therefore, not solely in the elitist or participatory forms of consumption but also in the ideologies that surround the cultural behaviors of visual consumption.

Object in themselves, not just buildings, can and may soon carry live visuals. There is the expectation that one no longer has to read a label – but the object can and should project the label and its textured images to the viewer. People increasingly expect the object to engage with their needs by providing the necessary information that would convince them to look into it, play with it, engage with it, talk to it, like it and ultimately buy it.

Ultimately there will be no need to engage in this process but the environment will have objects that, by reading previous experiences of likes and dislikes, present a personalized visual texture of reality.

Live visuals will provide an environment within which purchasing does not mean to solely acquire an object but rather to 'buy' into an idea, a history, an ideology or a socio-political lifestyle. It is a process of increased visualization of large data (Big Data) that defines and re-defines one's experience of the real based on previously expressed likes and dislikes.

In this context of multiple object and environmental experiences it is also possible to forge multiple individualized experiences of the real; as much as there are multiple personalized experiences of the internet and social media through multiple avatar identities (see "Avatar Actors" by Elif Ayter). The 'real' will become a visual timeline of what the algorithm has decided should be offered based on individualized settings of likes and dislikes. This approach raises an infinite set of possibilities but of problems as well.

ISSN 1071-4391 ISBN 978-1-906897-22-2
ISSN 1071-4391 ISBN 978-1-906897-22-2

The life of our representation and of our visuals is our 'real' life – disjointed and increasingly distant from what we continue to perceive as the 'real real,' delusively hanging on to outdated but comfortable modes of perception.

The cinematic visions of live visuals from the 19th century have become true and have re-designed society unexpectedly, altering dramatically the social structures and speeding up the pace of our physical existence that constantly tries to catch up and play up to the visual virtual realities that we spend time constructing.

If we still hold to this dualistic and dichotomist approach of real versus virtual (although the virtual has been real for some time and has become one of the multiple facets of the 'real' experience), then the real is increasingly slowing down while the virtual representation of visuals is accelerating the creation of a world of instantaneous connectivity, desires and aspirations. A visuality of hyper-mediated images that, as pollution, pervades and conditions our vision without giving the option of switching off increasingly 'alive' live visuals. [4]

The lack of 'real' in Jean Baudrillard's understanding is speeding up the disappearance of the 'real' self in favor of multiple personal existential narratives that are embedded in a series of multiple possible worlds. It is not just the map that is disappearing in the precession of simulacra – but the body as well – as the body is conceived in terms of visual representation: as a map. These multiple worlds of representations contribute to create reality as the 'fantasy' we really wish to experience, reshaping in turn the 'real' identity that continuously attempts to live up to its 'virtual and fantastic' expectations. Stephen Gibson presents the reader with a description of one of these worlds with live audio-visual simulations that create a synesthetic experience (see "Simulating Synesthesia in Spatially-Based Real-time Audio-Visual Performance" by Stephen Gibson).

If this fantasy of the images of society is considered an illusion – or the reality of the simulacrum, which is a textual oxymoron at prima facie – it will be determined through the experience of the *live visuals becoming alive.*

Nevertheless, stating that people have illusory perceptions of themselves in relation to a 'real' self and to the 'real' perception of them that others have only reinforces the idea that Live Visuals will allow people to manifest their multiple perceptions, as simulated and/or real will no long matter. These multiple perceptions will create multiple ever-changing personae that will be further layered through the engagements with the multiple visual environments and the people/avatars that populate those environments, both real and virtual.

In the end, these fantasies of identities and of worlds, manifested through illusory identities and worlds within virtual contexts, are part of the reality with which people engage. Although fantastic and illusory, these worlds are a reflection of a partial reality of the identity of the creators and users. It is impossible for these worlds and identities to exist outside of the 'real.' This concept of real is made of negotiated and negotiable frameworks of engagement that are in a constant process of evolution and change.

The end of post-modernity and relativism may lead to the virtuality of truism: the representation of ourselves in as many multiple versions – already we have multiple and concurrent digital lives – within the world/s – ideological or corporate – that we will decide or be forced to 'buy into.'

ISSN 1071-4391 ISBN 978-1-906897-22-2

It is this control of the environment around us and us within that environment that will increasingly define the role that live visuals will play in negotiating real and virtual experiences. The conflict will arise from the blurred lines of the definition of self and other; whether the 'other' will be another individual or a corporation.

The potential problems of this state of the live visuals within a real/virtual conflict will be discovered as time moves on. In the end this is a giant behavioral experiment, where media and their influences are not analyzed for their social impact *ex ante facto*; this is something that happens *ex post facto*.

Nevertheless, in this ex post facto society there are some scholars that try to understand and eviscerate the problems related to the process of visuals becoming alive. This issue collects the analyses of some of these scholars and embeds them in a larger societal debate, hinting at future developments and problems that society and images will have to face as the live visuals become more and more alive.

The contemporary concerns and practices of live visuals are crystallized in this volume, providing an insight into current developments and practices in the field of live visuals.

This issue features a new logo on its cover, that of New York University, Steinhardt School of Culture, Education, and Human Development.

My thanks to Prof. Robert Rowe, Professor of Music and Music Education; Associate Dean of Research and Doctoral Studies at NYU, for his work in establishing this collaboration with LEA.

My gratitude to Steve Gibson and Stefan Müller Arisona, without them this volume would not have been possible. I also have to thank the authors for their patience in complying with the guidelines and editorial demands that made this issue one that I am particularly proud of, both for its visuals and for its content.

My special thanks go to Deniz Cem Önduygu who has shown commitment to the LEA project beyond what could be expected.

Özden Şahin has, as always, continued to provide valuable editorial support to ensure that LEA could achieve another landmark.

Lanfranco Aceti
Editor in Chief, Leonardo Electronic Almanac
Director, Kasa Gallery

1. 3D printing the new phenomenon will soon collide with a new extreme perception of consumer culture where the object seen can be bought and automatically printed at home or in the office. Matt Ratto and Robert Ree, "Materializing Information: 3D Printing and Social Change," *First Monday* 17, no. 7 (July 2, 2012), http://firstmonday.org/ojs/index.php/fm/article/view/3968/3273 (accessed October 20, 2013).
2. Walter Benjamin, "Protocols of Drug Experiments," in On Hashish, ed. Howard Eiland (Cambridge, MA: Harvard University Press, 2006), 58.
3. " The point here is not to issue a verdict in the debate between Adorno and Benjamin, but rather to understand the debate between them as representing two sides of an ongoing dialectical contradiction." Ryan Moore, "Digital Reproducibility and the Culture Industry: Popular Music and the Adorno-Benjamin Debate," Fast Capitalism 9, no. 1 (2012), http://www.uta.edu/huma/agger/fastcapitalism/9_1/moore9_1.html (accessed October 30, 2013).
4. Paul Virilio, *Open Sky*, trans. Julie Rose (London: Verso, 1997), 97.

ISSN 1071-4391 ISBN 978-1-906897-22-2

Gathering Audience Feedback on an Audiovisual Performance

by

Léon McCarthy

PhD Researcher
Northumbria & Newcastle Universities
leon.mccarthy@northumbria.ac.uk

ABSTRACT

This paper will report on the use of video-cued commentary as a method of gathering insightful audience feedback on an audiovisual performance.

Through my current audiovisual performances, I seek to present perspectives on social themes. Hence, I hope to communicate with audiences on an intellectual level, yet in the past, I have been unable to tell whether audiences were engaging sensually, intellectually or otherwise.

My research seeks to glean in what manner audiences engage with a performance, ascertaining what elements of my performance may have triggered them to engage. I expect that in seeking answers to these questions, I will understand more about how audiovisual content, gesture and stage-setup can lead audiences to engage intellectually.

I have used post-performance audience surveys to gather subjective feedback. The analysis of these surveys revealed useful general impressions, yet feedback rarely revealed the impact of specific audiovisual events or moments. Seeking feedback on specific events could isolate the impact I had on the audience making it impossible to replicate the same impact in future performances.

In seeking to gather specific feedback, I came across the use of video-cued commentary, a method used to assess user-experience within interactive installations. [1] I adapted this approach to the field of live audiovisuals, inspired by the writings of Sergei Eisenstein [2] and adopting the listening modes suggested by Michel Chion. [3]

The design, implementation and analysis of a video-cued commentary will be part of this analysis together with alternative uses of the video-cued commentary for researchers and practitioners in other fields.

THE LIVE AUDIOVISUAL AESTHETIC

Many will be familiar with the practice of the Video Jockey (VJ) and their projections that form a visual accompaniment to the music of the Disc Jockey (DJ). However, audiovisual performance is a much broader field of practice. Some artists, such as 3epkano, [4] revisit the days of the silent movie theatre, projecting old silent films to the live accompaniment of a contemporary musical performance. Artist collectives such as Seeper project visuals onto outdoor buildings, a practice known as projection mapping. [5] The musician Amon Tobin brings visual projection mapping and set-design together in a bombastic fashion with his show *ISAM*. [6]

My own audiovisual aesthetic is more akin to a live music-cinema, where sound and visual streams are created or re-mixed live for an audience. It follows a similar aesthetic to film director Peter Greenaway's *Tulse Luper* VJ performance, which was a live remixing of content from his films. [7] With my current series of performances, I aim to present perspectives on the theme of sustainable fishing methods. Visualizations are driven by data on declining fish quotas, reports on the health benefits of eating fish and other such sources. These are combined with appropriated video-loops, real-time reactive visuals and motion-graphics. Music is rendered from laptop-based sequencers, synthesizers and audio effects units.

I hope audiences will interpret my performances for meaning and reflect on their experience, both during and after the event. To equip myself with the knowledge of how I can steer audiences toward interpretive and reflective modes of engagement, I want to know in what ways content, stage presence and gesture impact individuals. I expect that by noting moments when individuals have engaged with my performance,

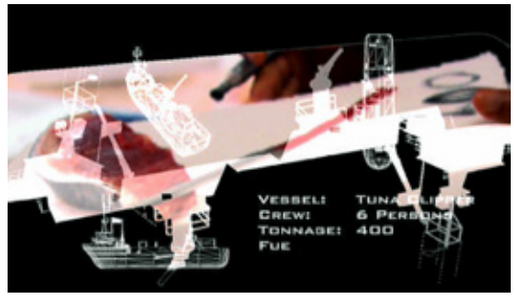


Figure 1. *betaV#03* Visuals, L. McCarthy, July 2012. Screenshot from Live Visuals. This screenshot demonstrates the visual aesthetic within the betaV performance series. © L. McCarthy, 2012. Used with *permission.*

 ISSN 1071-4391 ISBN 978-1-906897-22-2

ISSN 1071-4391 ISBN 978-1-906897-22-2

I will get closer to understanding why they have engaged and will be able to ascertain what, in my performance, triggered their engagement.

THE PREVIEW SCREENING

The audience survey is one method to gather qualitative audience impressions. However, it is mediated through the written word, introducing semiotic anomalies between a) what I intend with my question; b) what they intend with their answer; and c) how I interpret their response. To get closer to the perceptions that occur during a performance, I analyzed audience preview screenings; a practice borrowed from the film industry. Film directors screen versions of their films to select audiences, using alternate endings. Feedback is gathered from the audience through Q&As and surveys. The feedback informs the director when editing the 'Final Cut' for general release. It struck me that if I could have an audience re-watch a screening of a performance, they could then comment on what they perceived during the performance. Replacing the written with the spoken word would remove some of the semiotic anomalies mentioned above.

QUALITATIVE RESEARCH AT THE CREATIVITY & COGNITION STUDIOS

There is a dearth of academic writing on the application of practice-based research and qualitative data-gathering methods on performance art. One useful reference is a book featuring research from the Creativity & Cognition Studios at the University of Technology, Sydney, and in it I came across the use of video-cued commentary as a valid research method. [8] Z. Bilda and B. Costello's methods were influenced by Ericsson & Crutcher's 'Protocol Analysis' method, [9] which was devised to deal with verbal reports within research contexts. The Protocol Analysis approach is outlined below.

1. Expected outcomes from an activity are listed.
2. Words are categorised, outlining which outcomes the answers suggest.
3. Verbal reports are scanned for keywords and outcomes are listed.
4. Results are compared with other methods of analysis such as observation and researcher fieldnotes so as to validate the research.

In Costello's project, [1] participants played with an artwork while their actions were being recorded. On leaving the installation, they entered a booth in which the recording was played back to them and over which they were encouraged to comment as to what their intent was with their actions. Protocol analysis was used to compare and validate the findings from the video-cued commentaries against researcher observation reports. Costello formulated a significant framework of keywords against which she could analyze the audio commentaries of the participants. The use of a keyword framework became a core element of my research and heavily informed the analysis phase. Costello mentions that the video-cue tended to keep the participant focused, reminding them of what actually occurred rather than what they remember occurring. Costello was studying how the experience of play emerges, and so by putting couples (who are familiar with each other) rather than individuals through the process, she found they were less inhibited and helped each other to learn and play.

S. EISENSTEIN'S OBJECTIVE APPROACH

Sergei Eisenstein, a pioneer of early editing practices, strove for a Russian cinema that would mobilize the country's masses with revolutionary zeal. He wished to instill in them a yearning to improve the lot of the common man. Eisenstein believed that through his approach to editing, with its use of juxtaposition or visual-montage, he could impart his objective ideals on the audience. When he wrote on his use of montage, he used specific visual examples from his own films to demonstrate the perceived effectiveness of his theories in practice. In his essay '*Eh!' On the Purity of Film Language*, [2] he recreates a storyboard of a sequence from his famous film *Battleship Potemkin*, which he uses to document (shot-by-shot) his approach to editing and its intended effect on the viewer. His approach makes objective connections between authorial intent, the audiovisual score and the effect expected on the audience. I took my lead from Eisenstein's direct referencing of his audiovisual score, although I go further than he by basing my suppositions on an analysis of audience feedback and the performance timeline, rather than relying on my perceptions alone. My approach is resumed below.

1. I formulate a supposition on how audiences are engaged through audiovisual performance.
2. An audiovisual performance takes place, testing these suppositions.
3. Audience perceptions on their experience are gathered.
4. Audience perceptions are connected to events in the performance.
5. These connections are coded so as to attribute what has triggered their mode of engagement.

THE INFLUENCE OF CHION'S LISTENING MODES

When considering how one engages with audiovisual events, Michel Chion's listening modes come to mind. [3] Chion notes two ways in which we perceive sound. On the one hand, sound is physically omnipresent, since we cannot block out the sound arriving at our ears. This he calls passive perception. However, we can still focus our listening attention on specific sound streams within the sound arriving at our ears. Chion calls this active perception. [10] Within active perception, he believes that we engage in at least 3 different ways.

1. Causal – Listening for a sound's source.
2. Semantic – Seeking meaning from sounds, using contextual codes.
3. Reduced – Focusing on the traits of the acoustic sensation.

As I am seeking for the moments that have engaged individuals, I must interpret the language of the participant and decipher the manner of their engagement. Influenced by Chion's listening modes, I isolated three modes of audiovisual engagement and accompanying keywords that would suggest the presence of these modes in the audience's comments. These modes and keyword phrases are detailed in the following section.

CODING A FRAMEWORK

Qualitative research generates large amounts of data, which can appear unwieldy and difficult to analyze. As mentioned earlier, Costello suggests using a coded framework with which to analyze the recorded commentaries of participants. [1]

For my purposes, a framework was needed to relate the recorded comments back to the performance. Chion's opinion on how active listening occurs influenced how I outlined the analyis and scrutiny of the commentaries. [3] His 'causal' mode of listening is concerned with cause & effect, observation & sensation. For my purposes, I proposed a 'perceptive' mode in which audience members where observing and reacting purely to the content within the performance.

ISSN 1071-4391 ISBN 978-1-906897-22-2
ISSN 1071-4391 ISBN 978-1-906897-22-2

Chion's 'semantic' mode demands more from the intellectual faculties of the listener as they seek for meaning from the sounds. I proposed an 'interpretive' mode, one in which audience members seek out connections and meanings from the events in the performance. Lastly, there is Chion's 'reduced' mode of listening in which he believes the listener can focus on the physical traits. In my context, I found no use for such a mode. However, I did note many comments that were reflecting on the nature of the performance, the stage-setup, and also the personal memories that were being triggered. For such comments, I proposed a 'reflective' mode of engagement. Figure 2 compares how Chion's listening modes influenced my proposed modes of engagement.

Chion's listening modes	Audiovisual Performance Modes
Causal	Perceptive
Semantic	Interpretive
Reduced	Reflective

Figure 2. Modes of Engagement, L. McCarthy, November 2012, Table. This table shows the influence that Chion's listening modes had on the audiovisual modes of engagement I search for in the commentaries. Note that Chion's 'reduced' mode has no direct correlation with my 'reflective' mode. © L. McCarthy, 2012. Used with permission.

The following figure lists typical phrases that tended to reveal which of the three modes of engagement a participant was revealing.

Perceptive	Interpretive	Reflective
I like...	I do not understand the...	What if he changed the...
The... appeals to me	That means...	The aesthetic is...
That is an interesting...	It suits the mood of...	I would like more...
The... was triggering...	The plot is...	This could also be...
The... was repetitive	The narrative is...	That reminds me of...
It has a... aesthetic	The symbolism is...	It would not be... if...

Sources triggering engagement	Description
Visual	Sources, Shapes, Colours, Dynamics
Sound	Samples, Treatments, Texture, Rhthym
Liveness	Gestures
Audiovisual Relationship	Triggers, Audiovisual Coupling
Plot	-
Mood	-
Setup	Stage Setup, Hardware
Composition	Design, Presentation

Figure 4. Phrases Revealing Mode of Engagement, L. McCarthy, November 2012, Table. This table lists the phrases that tended to reveal each mode of engagement. © L. McCarthy, 2012. Used with permission.

It was not enough to attribute a mode to a participant's comment. I also wanted to note what source within the performance a comment had been triggered by. It was through trial and error that the topics listed in Figure 4 were found to cover all sources that were discussed across the commentaries.

Figure 3. Sources Triggering Engagement, L. McCarthy, November 2012, Table. This table lists the topics that cover the sources discussed in the commentaries. Ó L. McCarthy. © L. McCarthy, 2012. Used with permission.

ISSN 1071-4391 ISBN 978-1-906897-22-2

DESIGNING A VIDEO-CUED COMMENTARY

The video-cued approach was first tested with a recording of a previous performance in order to understand how to setup the eventual commentaries. Commentaries were recorded using individuals who had not been at the performance.

1. In test A, an individual watched and made comments alone.
2. In test B, a pair watched and made comments together.

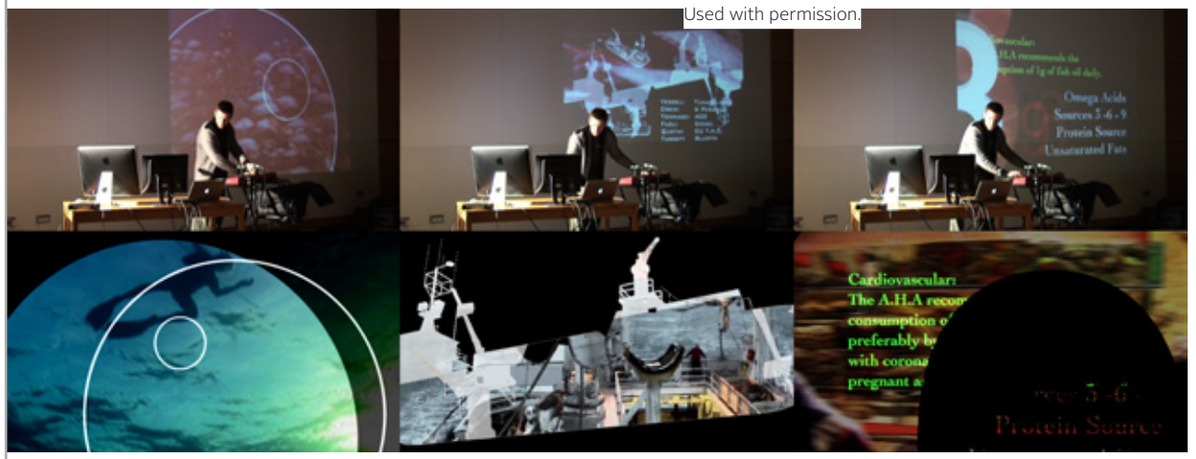
It was noted that in test A, little commentary was forthcoming. The individual tended to use single words & short phrases, which remained in the perceptive mode. In test B, the pair commented and discussed more freely, moving between all three modes fluidly. In effect, it became more like a focus group, in which points were made, expanded upon and at times, rebutted. This was in line with the findings of Costello when she compared the commentary of an individual with the commentary of a couple. [1] It was decided that all participants would take part in pairs rather than as individuals.

The performance itself, *betaV#04* [11] took place on the 31st of October 2012 in a lecture hall at the University of Limerick. [12] The performance was in three distinct parts, each with an introductory title-slide. I performed solo, facing the audience, using a monitor to mirror what was being projected behind so that I could see the output without turning around. Attendance was low, with an audience of approximately 14 people. Furthermore, only 6 people committed to partaking in the research, giving me 3 video-cued commentaries. Directly after the performance and after completing the relevant consent forms, individuals filled out a survey. The next day, an audiovisual recording of the performance (from the audience's vantage point) was uploaded to *Final Cut Pro* [13] and presented on a large monitor in the video-suite. Pairs of microphones were routed into *Final Cut Pro* so that commentaries would be recorded in sync with the performance. The commentaries were then recorded.

THE ACCOMPANYING AUDIENCE SURVEY

In line with the Protocol Analysis method that influenced B. Costello, [1] I planned to have all members complete a post-performance audience survey, as a reference against which I could compare my findings from the commentaries. The survey was completed immediately after the performance of *betaV#04*. [11] Respondents were asked to give their name so that

Figure 5. *betaV#04 Performance,* L. McCarthy, October 2012, Images. This series of images shows the nature of the performance, in 3 parts, with the live setup shown over its corresponding visual screenshot. © L. McCarthy. Used with permission.



ISSN 1071-4391 ISBN 978-1-906897-22-2

I could connect surveys to the relevant video-cued commentaries. I foresaw that having participants paired for the commentaries would reduce the usefulness of the survey as a reference, in line with the Protocol Analysis method, [9] but I continued the survey since the meaning I could extract from pairings far exceeded what I could extract from individuals.

IMPLEMENTATION

From the precedent set by Costello, [1] my approach to gathering video-cued commentaries was to:

1. Code a framework that would reveal the type of engagement.
2. Record the performance (from the audience vantage point).
3. Re-play the recording while participants commented.
4. Parse commentaries for modes of engagement.
5. Decipher what events triggered the perceptions of the participants.

I hoped to find qualitative-analysis software that could host video and audio files together on a 'timeline.' I wanted to tag the audio and then code these tags for both the mode of engagement and the source that may have been the trigger. Due the novelty of this approach, no software offered me an exact solution. Most software that could handle video demanded a full transcription to be first extracted from the audio; an unnecessary task for my purposes. I was interested in tools that offered the opportunity to tag the clip directly rather than through a transcript. I also hoped to find a tool that could export visualizations to aid with my analysis.

A number of software tools were tested. Transana [14] was the first software tested and offered a promising interface, however it relied on first transcribing the audio with time code, a time-consuming task I did not need to engage in. Dedoose [15] is a tool that runs online (although a desktop app can be downloaded). I found that it did not playback video in a consistently responsive fashion since the video resided on a server. It was also rather restrictive for setting up a coding scheme. Atlas.ti [16] offered flexible & accurate video control, as well as a useful coding approach, but its analysis methods were not to my liking, with little export options. Interact [17] offered accurate video control, an awkward but usable coding approach and some useful tools to visually analyze the data (pie charts, tables and reports), which could then be exported. The company's proactive online support enabled me to shape it towards my needs, and it was this software that I used.

With three commentaries to analyze, I decided to use the first in order to continually refine the coding framework and describe how I used the software. My working method is described below.

1. Import the performance recording and mute its audio.
2. Import the audio-commentary, ensuring both files are in sync.
3. Tag the timeline and summarize what each comment is about.
4. Determine what source is being discussed and add this to a new column.
5. Translate these sources into one of the topics listed in Figure 4.
6. Associate each comment with a mode of engagement in Figure 3.

This method gave enough clarity to the data, so that it could be exported in a database and in a number of PIE charts. Each pairs' commentaries veered in different directions, therefore I will only use commentary one as a discursive example in this paper. A complete coded database from the commentary was exported, which appears quite like an 'Edit Decision List' (EDL) from the video editing industry. (See Appendix 1.) The database and charts were color coded for each of the engagement modes.

1. Perceptive = Pink
2. Interpretive = Yellow
3. Reflective = Green

I wanted to visualize the modes of engagement across each of the three sections of the performance. A chart for each section of the performance was exported from Interact to reflect this. (See Appendix 2.) Creating and exporting charts from Interact is awkward and demanded a lot of time to export very basic looking visualizations. Adobe Illustrator [18] was used to embellish the charts, but this added considerably to the amount of time required to attain usable charts.

I wanted to visualize what performance sources triggered each comment. Three charts for each section of the performance reveal the sources of perceptive engagement. (See Appendix 3.) Three more charts reveal the sources of interpretive engagement. (See Appendix 4.) Finally, three charts reveal the sources of reflective engagement. (See Appendix 5.)

ANALYSIS

The database makes it easy to compare what source a comment relates to and which mode of engagement is apparent. When a trend appears in a chart, the database can be used to confirm it. The following section of the article discusses the modes of engagement that emerged from this approach. By looking at the chart in Appendix 2, one can observe a decrease in perceptive engagement across the performance. It suggests that these participants were initially engaged in sensory observation. Also if one reads the respective comments in the database; they confirm that the audience was engage with sounds and the manner in which responded to the audiovisuals. Comparing the chart for sources of perceptive engagement (Appendix 3) and the database (Appendix 1), one can observe that it was sound-design, audiovisual relationship and the dynamic of the visuals that mostly attracted attention.

A decrease in perceptive engagement across the performance corresponded to an increase in reflective engagement. If one reads the comments in the database (Appendix 1), as the plot became clearer, the participants became more accustomed to the aesthetic, and stage-setup could begin to influence their reflections. They began discussing the nature of screen-based performances and the conundrum faced when an audience cannot tell what a performer is doing on computer screens that they cannot see. They also discussed how the experience might have differed if this were a rendered screening rather than a live audiovisual performance.

Sources of interpretive engagement remain the least common mode of engagement across all sections of the performance. (See Appendix 4.) As already mentioned, it seems that reflecting on the stage-setup was distracting from interpreting meaning from the content and the experience. What is interesting is that, when one looks at the comments, (see Appendix 1) the participants mostly refer to mood and plot. The comments reveal that participants felt that the music continuously created the mood within which to interpret the visuals.

REFLECTION

Having adapted an application of video-cued commentary to the context of audiovisual performance, would I embark on a broader study, gathering commentaries in larger numbers? Would it be worth the significant investment of my time? The time it took to find a suitable approach, unearth a usable software tool and then develop a suitable coding framework was significant. Analyzing the first commentary took approximately 1 week. I first structured a framework and then continuously refined it as the commentary revealed patterns. In hindsight, it would have saved time to begin tagging the comments without a framework in place and let a framework emerge as the intent within the comments became apparent. Listing the factors within the performance that were triggering moments of engagement (see Figure 4) took considerable time to develop and I cannot see how this could be hastened. Admittedly, I was adapting a new software tool, Interact, [17] which is not designed with the method I wanted to adopt. Despite the initial slow progress, subsequent commentaries took approximately 1 hour to tag and analyze. The initial investment of time would pay off the more commentaries there were to be analyzed. Exporting charts from Interact [17] was a slow process and in hindsight, it is only the charts for modes of engagement that were needed – those for the sources were helpful but not vital.

The framework I developed – separating the modes of engagement into perception, interpretation and reflection, worked well. When presenting social issues within my performances, I would hope to bring audi-

ISSN 1071-4391 ISBN 978-1-906897-22-2
ISSN 1071-4391 ISBN 978-1-906897-22-2

ences to the interpretive and reflective modes; and within these modes have them focus on sources such as plot, meaning, intent and so on. I worked on the assumption that audiences would have to first engage on a perceptive level. The commentaries revealed that to begin with, most people do engage in this way as they 'feel' their way into the performance. However, once engaged with the performance perceptually, not all of the forthcoming interpretations and reflections were related to the plot, meaning and intent. Below are listed the more common comments.

1. Wondering how the computer system operated.
2. Questioning which gestures were controlling which stream.
3. Questioning why multiple computer screens were present.

The nature of computer-based performance emerged as a topic across all commentaries. I do not aim to remove such phenomena from the experience of my performances. However, the computer system took the audience's attention away from the content, the plot and the meaning, and so I would like to reduce the impact that the computer stage-setup had. The right-hand image in Figure 6 shows the stage-setup for *betaV#04*, [11] in which the hardware stood between the audience and I. Orientating myself so that I am facing the projection with my back to the audience would reveal my screens, but past experience has shown that this removes the possibility of interaction with an audience. Revealing the computer screens through separate projections is a change I will test in the future. Alternatively, one could consider the left-hand image in figure 6, which shows an 'in-the-round' arrangement that I used for the *betaV#01* performance. This worked well as the audience could approach to observe gesture and hardware if they so wished. Other comments reveal an underestimation of how much is live within my performance, thereore I also aim to use more tactile interfaces and rely less on computers to make it clearer what is live and what is not.

Having analyzed the commentaries, it seems the effect that sound has in audiovisual performance remains similar to its effect in cinema. In writing about cinema, Michel Chion notes that the soundtrack tends to pass its qualities on to the visual, to the screen. In this way it informs the visual stream with its qualities. Chion writes that "It is always the image, the gathering place and magnet for auditory impressions, that sound decorates with its unbridled splendour." [19] In the context of my performance, comments consistently reveal that it was sound that shaped the mood in which to interpret the meaning of the visuals and hence the plot. This is a quote from the commentary at time code 00:04:11:01, (see Appendix 1): "The music seems a natural fit to the visuals, creating the atmosphere." Time code 00:09:24:06, "the music is darker, feeding atmosphere into the visuals." Sound seemed also to be the primary focus of perceptive engagement across the performance. Comments of a perceptive nature were predominantly on the sound rather than the visual. H. Helmholtz, when writing of the difference between sonic and visual stimuli, states that sounds are perceived directly "without any intervening act of the intellect." [20] Observations from the commentaries support his theory – if sound tends to impact the individual directly, s/he will be engaged with it automatically, while it may take more time for the visual stream to be grasped and interpreted. If one is to view the PIE charts for sources perceived, it shows that in section one sound was perceived more than the visual, while the visual was perceived more across sections two and three. (See Appendix 3.)

Figure 6. *Performance Setups,* L. McCarthy, December 2011 & October 2012, Images. The image on the left shows an 'in-the-round' setup for *betaV#01* with Giuseppe Torre while the image on the right shows the frontal setup for *betaV#04.* © L. McCarthy, 2012. Used with permission.

Returning to the premise of Protocol Analysis, [9] at best it should happen in real-time. For instance, a painter could be asked to talk aloud as they painted. To be most effective, the video-cued commentaries should have taken place as soon as possible after the performance. Costello [1] uses video-cued commentary allowing the participant to enter a video-booth to record their comments immediately after experiencing an art installation. In my case, the logistics of capturing a video recording, preparing it for viewing and then bringing a whole audience (in pairs) to comment simultaneously mitigated against an immediate turnaround. I considered building a flash player that would host the video online and automatically enable the internal microphone when the video is played. This would facilitate participants to complete a commentary after a performance in a location of their choosing with the recordings automatically saving to a server. Prototyping without such a system worked with only six participants as I simply timetabled participants to visit me for a screening. If I wished to collect a large number of commentaries, an online system would be a practical approach, as scheduling multiple pairs of participants would prove logistically problematic and could introduce an unacceptable delay between the performance and the recording of the commentary.

I have taken a method developed to analyze user-engagement within an interactive art installation and adapted it for use with audiovisual performances. I see no reason why video-cued commentary could not be adapted to other fields of practice, such as contemporary dance, theatre and outdoor installations. Yes, considerable time is needed to adapt the video-cued process to a specific context, but this pays off with larger numbers of commentaries. In summary, if one expects that a large number of commentaries could aid their qualitative research, the video-cued commentary could prove informative and insightful. ■

ACKNOWLEDGEMENTS

Funding and facilities for performances were provided by CSIS Department, University of Limerick. Ph.D. supervisors are Dr. S. Gibson, School of Design, Northumbria University & Dr. B. Zics, Culture Lab, Newcastle University.

LINKS

betaV#01
Audiovisual performance (excerpts) as part of the *liveIXEM* festival.
8th December, 2011, Favignana, Sicily, Italy.
Performer alongside Mr. Giuseppe Torre.
http://www.vimeo.com/csisul/betav01

betaV#03
Audiovisual performance as part of the *UCD Imagine Science Film Festival.*
6th July, 2012, Sugar Club, Dublin, Ireland.
Solo Performance
http://www.vimeo.com/csisul/betav03

betaV#04
Audiovisual performance with which video-cued commentaries were tested.
31st October, 2012, CSIS Department, University of Limerick, Ireland.
Solo Performance.
http://www.vimeo.com/csisul/betav04

ISSN 1071-4391 ISBN 978-1-906897-22-2

ARTICLE

APPENDICES

Appendix 1: Coded Transcript of Commentary 1.

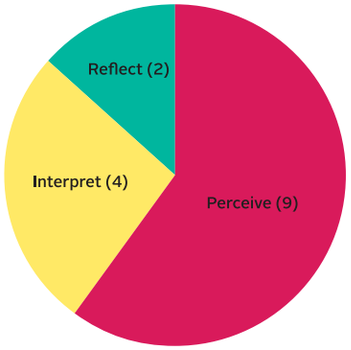
Figure 7. Coded Transcript, L. McCarthy, November 2012, Database. This database is the coded transcript of commentary 1 – exported from Interact. © L. McCarthy, 2012. Used with permission.

Timecode in	Timecode Out	Part	Comment	Source	Engaged with...	Mode
00:00:00:00	00:20:51:22					
00:00:00:00	00:07:47:20	1				
00:00:57:10	00:00:57:10		hugh - hmm interesting title	title	Visual	Perceive
00:01:24:10	00:01:24:10		hugh - long performant introduction	notes its a long intro	Liveness	Perceive
00:01:37:00	00:01:37:00		alan - the begining delay proves the liveness - he likes that	notes the liveness of the long intro	Liveness	Perceive
00:01:56:01	00:01:56:01		hugh - like the connect between audio and circles	connect between sound and circles	AV rel.	Perceive
00:02:17:11	00:02:17:11		alan - likes some of early sounds used	early sounds	Sound	Perceive
00:02:28:18	00:02:28:18		hugh - still mystery about meaning/plot	ambiguous plot pt 1	Plot	Interpret
	00:03:09:10		hugh - liking the music	music	Sound	Perceive
00:03:35:02	00:03:35:02		hugh - mystery keeps me interested through intrigue to know	ambiguous plot pt 1	Plot	Interpret
00:03:58:13	00:03:58:13		alan - likes sonar type bleep sonar	sound bleep	Sound	Perceive
00:04:11:01	00:04:11:01		hugh - music seems natural fit to visuals, creating the atmosphere	music fits the visuals	Mood	Interpret
00:04:29:07	00:04:29:07		alan - early wondering was nord triggering visuals	playing of nord	AV rel.	Perceive
00:04:30:07	00:04:30:07		hugh - circle visuals seem triggered by nord/bleep sound	playing circles + music	AV rel.	Perceive
00:05:11:02	00:05:11:02		hugh - music is so far bgd to the film, a accompaniment / alan - disagress feels music has its own character with sonar bleeps	is the music a seperate character or a support of visuals?	Mood	Interpret
00:05:35:20	00:05:35:20		alan - reflecting - digital performers showing their screen would it engage more and reveal more of the liveness	revealing screens to enhance liveness	Setup	Reflect
00:06:09:10	00:06:09:10		hugh - this genre - liveness is screen based - never as effective as a band	screens can never be very live	Setup	Reflect
00:07:47:20	00:15:17:23	2				
00:08:38:02	00:08:38:02		alan - more direct narrative here - only now part 01 meaning starts revealed through parto2	revelation of plot - part 2	Plot	Interpret
00:09:11:24	00:09:11:24		alan - sounds really appeal to him, their texture	texture of sounds	Sound	Perceive
00:09:24:06	00:09:24:06		both - music is darker, again feeds atmosphere	music creates the dark mood of part 2	Mood	Interpret
00:09:54:14	00:09:54:14		both - love sub bass kick and percussion	percusion & rhythm	Sound	Perceive
00:10:11:00	00:10:11:00		alan - visual info was repetitive / shapes were interesting	infovisuals become repetitive - part 2	Visual	Perceive
00:10:27:20	00:10:27:20		hugh - visuals could change more as music is going through its changes	visual could change more to follow musical change	Visual	Reflect
00:10:53:18	00:10:53:18		both - like the jumping visuals reacting to the music	sync across audiovisuals - part2	AV rel.	Perceive
00:11:04:22	00:11:04:22		both - how is it being done - the modulation & sync & beat & visual	the triggering of audiovisuals on the beat	AV rel.	Perceive
00:11:30:04	00:11:30:04		alan - red colour changes he likes	red colour when synth-filter opens	Visual	Perceive
00:11:39:20	00:11:39:20		hugh - seeing the screeen here would reveal the audiovisual connections	showing screens would reveal connections	Setup	Reflect
00:11:59:00	00:11:59:00		hugh - russian communist type visual aesthetic here	russian propoganda-like visuals	Visual	Perceive
00:12:18:12	00:12:18:12		both - what are the 3 preview screens for? they discuss	why 3 screens on stage	Setup	Reflect
00:12:59:16	00:12:59:16		hugh - could be presented rather than live presentation, as now there is less playing of the keyboard in parto2 - is he looping, playing live or just overseeing a timeline!	could be a screening as pt2 little live playing	Liveness	Reflect
00:14:09:08	00:14:09:08		both - with me facing them they see no screens so less revelation, less given that they like	without seeing the computers they know less about liveness	Setup	Reflect
00:15:17:23	00:20:51:22	3				
00:15:29:18	00:15:29:18		alan - a live piece - feeding off the crowd versus balancing using 3 computers - tricky	challenge to play live while controlling 3 computers etc	Liveness	Reflect
00:15:50:14	00:15:50:14		hugh - this is less a live performance more a mixed presentation, although presenting is adding yes a little extra over a screening. With little going between audience and me, they would get much from a simple screening	more a presentation than a richly live performance	Liveness	Reflect
00:16:08:07	00:16:08:07		alan - i dont think i would find it as exciting, as a screening, hugh then agrees	it is more exciting to know everything is occuring live	Liveness	Reflect
00:17:26:21	00:17:26:21		hugh - that's a big fish	that's a big fish	Visual	Perceive
00:17:34:01	00:17:34:01		alan - loves this child sound, mysterious relevance to it, its reverb particularly	child's laugh	Sound	Perceive
00:17:58:10	00:17:58:10		alan - likes that I am giving info aswell as sound and visual streams	salient info within the audiovisuals	Composition	Perceive
00:18:09:17	00:18:09:17		hugh - likes how sound influences way in which to read mood, read that this is a matter-of-fact way to read the visuals	music creating the mood - part 3	Mood	Interpret
00:18:47:19	00:18:47:19		alan - finds strange relationship between the meaning of 3 parts - why did 3rd part actually encourage the eating of fish	3 part structure presenst no single reading	Plot	Reflect
00:19:23:22	00:19:23:22		hugh - music contrasts visuals - gives conflicting readings - music fatalistic visuals positive	multiple readings - contrasting audiovisuals	AV rel.	Interpret
00:20:46:20	00:20:46:20		alan - what is the symbolism of the number 3???	what is the significance of no. 3	Visual	Interpret
00:20:46:20	00:20:46:20		alan - likes split of 3 parts, 3 perspectives and a narrative through them	tripartite structure of the plot	Composition	Reflect

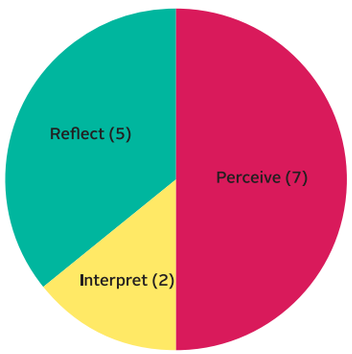
ISSN 1071-4391 ISBN 978-1-906897-22-2
ISSN 1071-4391 ISBN 978-1-906897-22-2

Appendix 2: Modes of Engagement from Commentary 1.

Interview 1
Mode Engagement pt1



Interview 1
Mode Engagement pt2



Interview 1
Mode Engagement pt3

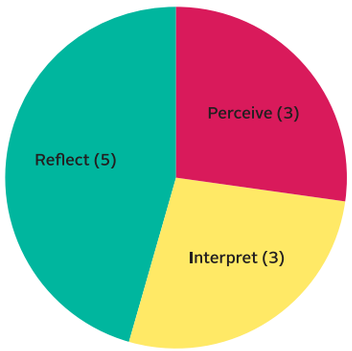
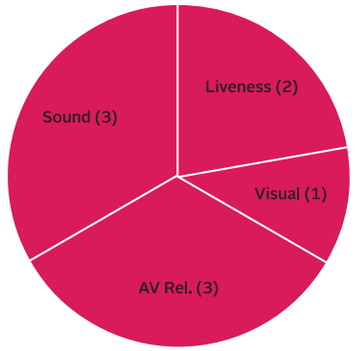


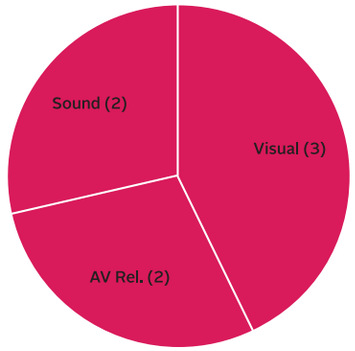
Figure 8. Engagement Modes, L. McCarthy, November 2012, Visualization. In this figure each PIE chart visualizes the modes of engagement across the 3 sections of the performance. © L. McCarthy, 2012. Used with permission.

Appendix 3: Sources of Perceptive Engagement from Commentary 1.

Interview 1
Source Percept pt1



Interview 1
Source Percept pt2



Interview 1
Source Percept pt3

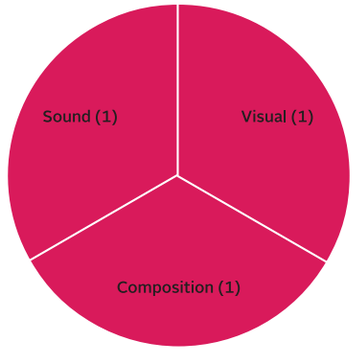
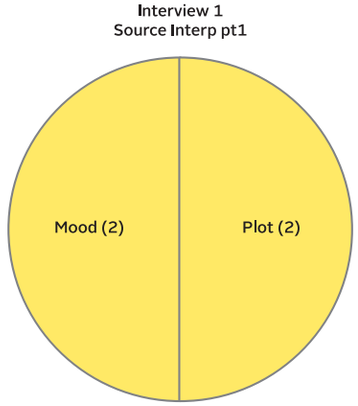


Figure 9. Sources of Perceptive Engagement, L. McCarthy, November 2012, Visualization. In this figure each PIE chart visualizes the sources of perceptive engagement for each of the 3 sections of the performance. © L. McCarthy, 2012. Used with permission.

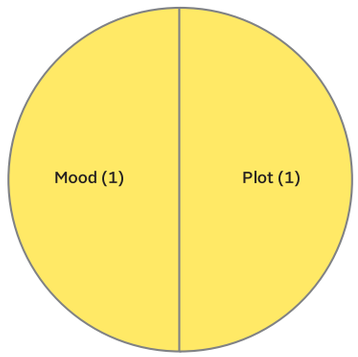
ISSN 1071-4391 ISBN 978-1-906897-22-2

Appendix 4: Sources of Interpretive Engagement from Commentary 1.

Interview 1
Source Interp pt1



Interview 1
Source Interp pt2



Interview 1
Source Interp pt3

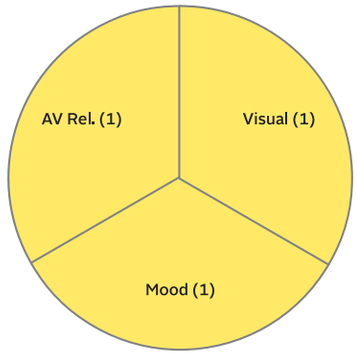
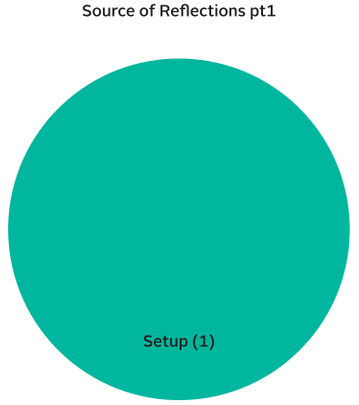


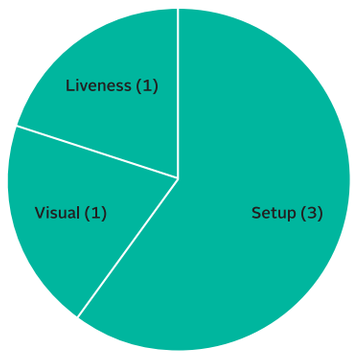
Figure 10. Sources of Interpretive Engagement, L. McCarthy, November 2012, Visualization. In this figure, each PIE chart visualizes the sources of interpretive engagement for each of the 3 sections of the performance. © L. McCarthy, 2012. Used with permission.

Appendix 5: Sources of Reflective Engagement from Commentary 1.

Source of Reflections pt1



Interview 1
Source Reflect pt2



Interview 1
Source Reflect pt3

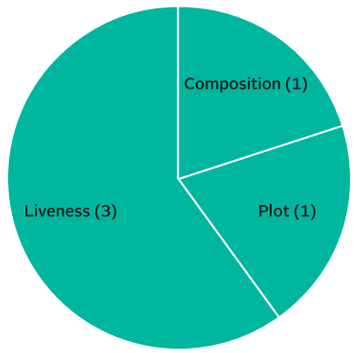


Figure 11. Sources of Reflective Engagement, L. McCarthy, November 2012, Visualization. In this figure, each PIE chart visualizes the sources of reflective engagement for each of the 3 sections of the performance. © L. McCarthy, 2012. Used with permission.

ISSN 1071-4391 ISBN 978-1-906897-22-2

REFERENCES AND NOTES

1. B. Costello, "Many Voices, One Project," in *Interacting: Art, Research and the Creative Practitioner*, eds. L. Candy and E. A. Edmonds, chapter 4.1 (Faringdon, Oxfordshire: Libri Publishing, 2011).
2. S. Eisenstein, "Eh! On the Purity of Film Language," in *The Eisenstein Reader*, ed. R. Taylor, 128–33 (London: British Film Institute, 1999).
3. M. Chion, "The Three Listening Modes," in *Audio-Vision : Sound on Screen*, ed. and trans. Claudia Gorbman (New York: Columbia University Press, 1994), 26–32.
4. 3epkano, official Web site, http://www.3epkanomusic.com (accessed December 13, 2012).
5. Seeper – arts and technology collective, official Web site, http://seeper.com (accessed December 13, 2012).
6. Amon Tobin, "ISAM" live audiovisual show, official vimeo channel, https://vimeo.com/47216543 (accessed December 13, 2012).
7. Peter Greenaway, "Tulse Luper" VJ Performance, reviewed at http://www.notv.com/index.php?option=com_content&task=view&id=34#.UMthB7aECLM (accessed December 13, 2012).
8. L. Candy and E. A. Edmonds, eds., *Interacting: Art, Research and the Creative Practitioner* (Faringdon, Oxfordshire: Libri Publishing, 2011).
9. K. A. Ericsson, "Towards a Procedure for Eliciting Verbal Expression of Non-verbal Experience without Reactivity: Interpreting the Verbal Overshadowing Effect within the Theoretical Framework for Protocol Analysis," *Applied Cognitive* Psychology, no. 16 (2002): 981–7.
10. M. Chion, "The Three Listening Modes," in *Audio-Vision : Sound on Screen*, 33–34.
11. L. McCarthy, "betaV#04" audiovisual performance, https://vimeo.com/csisul/betav04 (accessed December 14, 2012).
12. University of Limerick, http://www.ul.ie/ (accessed December 14, 2012).
13. Final Cut Pro X, product website for Ireland, http://www.apple.com/ie/finalcutpro/ (accessed December 14, 2012).
14. Transana, product website, http://www.transana.org/ (accessed December 14, 2012).
15. Dedoose, product website, http://www.dedoose.com/ (accessed December 14, 2012).
16. Atlas.ti, product website, http://www.atlasti.com/index.html (accessed December 14, 2012).
17. Interact, product website, http://www.mangold-international.com/software/interact/what-is-interact.html (accessed December 14, 2012).
18. Adobe Illustrator, product website, http://www.adobe.com/products/illustrator.html (accessed December 14, 2012).
19. M. Chion, "Sound Film – Worthy of the Name," in *Audio-Vision : Sound on Screen.*
20. H. Helmholtz, *On the Sensations of Tone* (New York: Dover Publications, 1954), 3.

ISSN 1071-4391 ISBN 978-1-906897-22-2


la Biennale di Venezia
Arte
Architettura
Cinema
Danza
Musica
Teatro
Archivio Storico
MoCC
Museum of Contemporary Cuts
The MoCC Pavillion