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Interpretation, Representation, Material Properties: Three Arguments About Aesthetic Qualities of Computational Media

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Computational visual media presents peculiar aesthetics features that are commonly explored by an instrumental use of technology. This paper introduces three art projects that propose a different perspective on enquiries of digital aesthetics: these works are based in conceptual frameworks, that highlight the technological manifestations of visual devices. The aim of these projects is to brake the immersivity of media representation, in order to reveal the essence of digital image. Each project reflects into specific concepts, here called: interpretation, representation, and material properties. These argumentations take into account the processuality of computation, as well as the materiality of media, as distinctive elements which place the medium identity over its function.

1 Aesthetics of technological expression

Artistic production is often concerned to an instrumental use of technology, to achieve a purposes that focuses on attractiveness, forgetting or hiding qualities that are specific to a medium. In different cases, the aesthetic qualities of technology are exploited and explored during the production process (Levin 2009). Several theoreticians argue that aesthetic properties of media must be observed in their internal mechanism and behavior (Terranova 2014, Ribas 2014, Broeckmann 2005, Penny 2008, Parisi et al. 2011). Supporting this argument, we should also refer to the approach of Software Art (Cramer 2002, Levin 2009). Therefore, this discussion asks us to entertain a perspective that accounts for the materiality of media (Blanchette 2011, Fuchsberger et al. 2013), considering the role this position can play in terms of aesthetics. This paper presents three art projects made by the author, which propose an approach that deeply focus on media aesthetics, positioning the instrumental role of technology in the background. The main aim of this approach is allow technology to express its own qualities, underlining them into a conceptual frame. Each project described here refers to media qualities in visual aesthetics, formalized in the concepts of: interpretation, representation, and material properties. Interpretation consider computation as performative aspect of digital media. This quality concerns the response of different devices in performing a same set of given instructions. Representation is a historical purpose of visual media, which is reiterated till the latest developments of imaging technologies (Bolter at al. 2002, Huhtamo 2004, Manovich 2009). Representation involves two complementary operations: the image capturing process, and its formalization as visible image. These tasks, see the technical apparatus both as central actor of representation and as main agent of the image ontology itself. Material properties concept underlines the relevance of physicality in digital visual media. The example which focus in this aspect, shows aesthetic potentials that are expressed by the material essence of visual devices.

2 Interpretation: "Arnulf Rainer for Digital Performers"

“Arnulf Rainer for Digital Performers, concert version” is a project that reflects in the aesthetics of visual computational systems, focusing on their interpretation property. Following, it is argued how the performative essence of certain technologies, lead to an emergence of the system identity. This work is an installation presented as a visual concert, which reenact the film “Arnulf

Rainer" made by Peter Kubelka. This film is composed by an alternation of black and white frames, which create a stroboscopic effect. In order to highlight the performative nature of computational media, the installation follows the concert metaphor: several monitors are placed next to each other like an orchestra on a stage. Another monitor with a computer placed in front of them, assumes the role of conductor. The project is technically and conceptually based in a process that happens in software level. In the main computer (conductor) a program analyzes and recreates the original Kubelka composition in real time, in order to extract the color value (black or white) for each frame. In the meaning time, the status of each frame is sent to devices that control the monitors, in order to be reproduced. Thus all the monitors should show the same color at the same time, reenacting the visual score composed by Kubelka. According to the metaphor proposed, the main computer, considered as conductor, is practically instructing the devices (players) to perform the given composition. Like in a concert, each of these systems interprets the commands suggested by the conductor, by means of its own technical qualities.

Fig. 1 Arnulf Rainer for Digital Performers, concert version (https://vimeo.com/74364647)

2.1 Interpretation and performativity as systems behaviours

Computational media have performative nature which derives from their processuality (Manovich 2011), and it must be taken into account as founding principle of an aesthetical analysis (Ribas 2014, Broeckmann 2005). Computational agency requires a particular attention toward systems behaviour (Penny 2008), which leads one to consider ethical and political implications, which are embedded in the processual automatism of computational technologies (Terranova 2014, Parisi et al. 2011). Since performativity is considered a key aspect of computational media, we can metaphorically assume its similarities toward music performance. From this perspective we can regard digital code as notation or script, and the whole computational system as a musician who interprets

a music score (Cramer 2002). Interpretation concerns the ability of recreate a certain event, according to the understanding of the event itself and the skills required to perform it. We can take in to account how interpretation works in music: performers must follow a script that informs them what they should play. Certainly, they aims to faithfully represents the original score, but the result of their performance depends on their qualities. In “Arnulf Rainer for Digital Performers” is possible to observe that each monitor respond differently to the instructions sent by the main computer. First of all, during the communication some information get lost. Secondly diverse models of monitors show their own light color and refresh speed. As well as in music, in this project, the system interpretation emerges from the understanding of the score and the technical quality for performing it. However, the metaphors of interpretation as well as performativity are used here as concepts which should not be limited to digital media. It is important to remark that these instances are proper of every technology which acts procedural tasks autonomously, including all devices in the domain of mechanical and analog technologies.

2.2 Structural Film and "Arnulf Rainer" by Peter Kubelka

During the 60s and 70s Experimental Cinema and particularly the Structural Film were movements that criticize the cinematic fiction, applying an artistic research which investigated specificities and aesthetic potentials of the technical apparatus: film, lens, camera, cinematograph, etc. ... (Gidal 1978, Sitney 2002). Structural Film research also included the mechanical and procedural functioning of the machine. The approach proposed by Structural Film was a pioneering approach for the further development of new media art (Chierico 2013), and is still valid as a method for the investigation of media properties. For this reason Structural Film was directly inspirational for the project “Arnulf Rainer for digital performers, concert version”. Kubelka’s work minimized the cinematographic medium, touching upon its technical essence based on light and variation. “Arnulf Rainer” is a film that does not proposes any content: looking to the minimal image composed by monochromatic frames, it is just possible to observe some physical impurities on the film, like dust and scratches. These elements prove fundamental: they expose the identity of the cinematographic medium.

2.3 Differences: a deconstructive method

Interpretation is a pivot point for the conceptual development of "Arnulf Rainer for Digital Performers, concert version". The whole system interprets the Kubelka's composition, like orchestra players interprets a given score. In this work is possible to perceive the different ways which players performs, according to various technical factors. Indeed is possible to notice how monitors behave: communication lacks between the players and the conductor, image refresh speed, and monitor light color, are just some examples of the technical issues and diversities which drives a different interpretation of a same script. However is important to remark that the image produced by these devices is notably distinct from the one produced by the cinematograph of the Kubelka's version. Dust and impurities are unavoidable elements of that old technology, as well as actual monitors have flat and could colour as distinctive elements of their technical apparatus.

3 Representation: "Emerging Aura"

"Emerging Aura" is a work that explores the representational qualities of imaging technologies used in digital photography. Visual representation is a result of a process which includes an input: the subject capture and codification into digital domain, and an output: the image visualization. "Emerging Aura" focuses on the acquisition process of images, to show how this action determines the aesthetic of representation and the identity of the capturing device. This work is formalized as installation that consists in a video projection mapped on a monitor. The video is composed by a sequence of sixty nine photos of this same monitor, taken from as many different devices, like: web cams, smartphones, cameras, video cameras, laptops, tablets etc. ... All of these pictures were cropped and scaled in order to overlap each other in a same predetermined size. The resolution used for the image scale was found calculating the average between the lower and the higher

Fig. 2 Emerging Aura (https://vimeo.com/92341020)

resolution of the original pictures. This editing permits to use these images as frames of the video. The monitor become the surface of the video projection, where the images are mapped in order to be overlapped with the real monitor.

3.1 "Emerging Aura": aim and method

This project aims to highlight the fictional status of visual representation, showing how the subject depicted in the pictures is differently interpreted by diverse technical apparatus. This process exposes the specificity of the devices used. “Emerging Aura” employs a deconstructive approach toward representation, applying a method based on differences. The immersivity of representation tends to hide the visual qualities of digital image. When the user is involved in the narrativity of representation, images aberrations are slightly perceived, (O’Regan 1992) because the attention moves away from the image itself for focusing into the content. Comparisons between images underline their differences, therefore the denaturation of representation permits to delineate the subjectivity of visual media. Moreover, the projection mapped on the monitor represented by the pictures, offers another evident difference, that emerge by his relation with the original shape of the monitor. The virtuality of representation is overlapped with the object physicality. This attempt to combine them as unique element, at contrary, works as evidence of the real distance between them.

3.2 Specificity as media uniqueness

The name “Emerging Aura” is inspired to the concept of aura by Walter Benjamin (2000). In order to avoid any misunderstanding, must be clarified how this term is used. In short, Benjamin’s concept of aura is meant as a supposed value given by the uniqueness of unreproducible art pieces (Benjamin, 2000). However, this project exploits the term aura in different sense: it is considered as uniqueness of media driven representation. This is a conceptual step that wants to underline how every medium conserves its uniqueness in the peculiar aesthetics that emerges from its technical properties. Contents shown by media are obviously characterized by technological qualities of the whole process of recording and reproduction. In “Emerging Aura” there are two conceptual elements that must be highlighted: firstly, the monitor, which is commonly the object that shows the representation, becomes in this context the subject of representation, as well as his physical support. The second important element is the shadow of the devices, which is projected on the monitor since the

shooting moment. The device records a trace of his presence in a space and time, representing itself. Here the aura emerges connecting the monitor representation with the physical uniqueness of the medium: its nature of object.

3.3 A survey on representation

Considering the historical trajectory of visual technologies, in one hand we can notice that representation drove the evolution of devices which attempts to simulate the real, framing contents from the context. During the Renaissance, Leon Battista Alberti theorized the perspective comparing the space of representation to "an open window through which the subject to be painted is seen." (Bolter & Grusin, 2002) The intent to simulate reality is clear, and it is also obvious how this comparison promises that a potential virtual reality can occur there, to identify this very moment as pivot point for the further progresses in the history of representation. Manovich (2009) and Huhtamo (2004) found that the frame plays an important role, empowering the "window" metaphor, and isolating the fictional space from the context where is placed. For this reason the window of Alberti is seen by Vilem Flusser (1977), as a door where you can enter in a new reality. Representation is a powerful driving force of the development of media, but it is totally disinterested of them. Visual media aims to satisfy the representation hiding themselves. In this way the media fruition is strongly alienated from the complex nature of object. (Bolter & Grusin, 2002) Recent imaging technologies increasingly moves the task of representation from hardware to software domain: algorithms are in charge of reconstruct the image from its capture, in order to supply an attractive quality. This bring to a deep abstraction of the image referent; as found by Hito Steyerl, this process suggests a parallelism with the functioning of representation concept in democratic politics. In other terms, the aesthetical distortion that elapses between the subject and its algorithmic depiction, corresponds to the distortion between the democratic system and its mediated conception. (Jordan 2014) For this reason Steyerl stands for the poor image: in the seams of its aesthetic, are contained signs which manifests the technological mediation of cultural practices. (Steyerl 2012)

4 Material properties: "Unpainted Undrawn"

"Unpainted Undrawn" shows the potential aesthetics which are intrinsic to the materiality of visual digital devices. Technologies of representation are historically bound to the physicality of their support, but the dematerialization of the image, which occurred

with the advent of digital devices, brought the idea that representation does not belongs anymore to the visual support. Instead, the physicality of it is an unavoidable and active element of representation. “Unpainted Undrawn” is a series of works that consist of cracked screens, inserted in classical and modern picture frames. These screens are collected from dismissed devices such as: tablets, ebook readers, smartphones, monitors, and several other kinds of digital devices with broken screens. In LCD screens the array of pixels is contained by a panel of crystal liquids. In case this panel is damaged by crash, the liquids can mix in the matrix, creating unrecoverable spots into the screen. Another common damage of LCD monitors can occurs to the tiny connections that controls the state of each pixel. This kind of damages creates rows or columns of coloured pixels, that remains permanently active into the monitor. Similarly to LCD screens, other imaging technologies have their features in exposing their materiality when damaged. For instance electronic paper, commonly used in e-book readers, is another technology used in “Unpainted Undrawn”. It is here argue that damages of screens, reveals the material essence of digital based images, as well as their potential aesthetics. This is the argument which drove the development of this project. The frame into which these screens are inserted plays a very important role within the concept of this work. First of all, the frame relates to the ancient and romantic stereotype of artwork. Thus the frame’s presence is an ironic attempt to elevate the aesthetics of cracked screens to the status of art. At the same time, the frame recalls the medium of painting, and therefore its materiality, which is explicitly relevant for image creation. In the history of painting, the awareness of materiality emancipated the technique from the status of flat visual representation. In a similar way, the images of these devices are not representations driven by a software, but a physical expression of the screen/medium.

Fig. 3 Untitled from “Unpainted Undrawn” series

4.1 The materiality of digital media

The word “media” has a communicative connotation, however it is important to underline that when we refer to media, we should also take into account its objectual nature. Conversely, objects have embedded communicational properties that must be taken into account. Starting from this perspective it is important to consider the concept of transparency, formulated by Bolter and Grusin (2002). From their point of view, transparency is the attempt of a medium to hide its objectual identity: devices are designed to be transparent in order to highlight the fiction of representation. As Huhtamo noticed: “The history of the screen fluctuates between the imagination and the world of things. As gateways to displaying and exchanging information, screens are situated in the liminal zone between the material and the immaterial, the real and the virtual”. (Huhtamo 2004) In reference to digital systems, bits are commonly intended as immaterial mathematical units. On the contrary, bits are physical, electrical entities which operate as mathematical units for calculation purposes. Even if this seems obvious, it is very useful to remind ourselves that digital systems cannot exist without the physical constraints of bits and devices. (Blanchette 2011) For this reason materiality is a property which must be taken into account from several points of view, and in every conception, analysis, understanding and design relating to digital media.

4.2 Aesthetics of seams

Structural Film, as already argued, bases its aesthetics on the seams which exposes the technical nature of cinema. One direction of this movement, named Materialist Film (Gidal 1978), was more directly concerned on expressing the materiality of the medium, as previously shown with the example “Arnulf Rainer” by Kubelka. In traditional Japanese ceramics, artifact mending is seen as an aesthetic opportunity, where imperfection becomes a value (Kopplin 2008). This is evident in the Kintsugi method: fractures between pieces of a broken ceramic are filled with precious metals (gold, silver or platinum). In Kintsugi, mending ceramics doesn’t have the sole intent of restoring the object’s functionality, it is an aesthetical choice that shows the physical consistency of the artifact as well as a story of the object. Moreover, the randomness of the fractures determines the artifact’s uniqueness. (Zoran et al. 2013, Ikemiya et al. 2014) Similarly, “Unpainted Undrawn” exploits the occurrence of damage in order to offer an aesthetic formed by object materiality. It is relevant to notice that the images shown in “Unpainted Undrawn”, looks aesthetically and

conceptually near to Glitch Art. In both cases, the images proposed are expression of a technical feature, which emancipate themselves over the contents of representation. However, the aesthetics of error which Glitch Art refers, emerges from the performativity of computational media. (Parisi 2011) Thus, glitch is an error induced by algorithms (intentionally or not) that does not presumes any structural intervention or damage.

5 Conclusion

This paper presented an artistic approach which reflects on aesthetic features of digital visual media. Interpretation, representation and material properties are concepts that illustrates some aesthetic and ontological issues of digital image. Here the intention is to show an artistic method which focuses on the specific properties of media, and that moves their instrumental use to the background. This movement corresponds to an emergence of image technologies, and to a deconstruction of contents, which results in a rupturing of the fiction of representation. Certainly, representation is the key element of this argumentation. Without the intent of representation, any visual medium loses its *raison d'être*, because there are no media which are purely conceived for abstractism. However, it is important to clarify that all the three concepts which are expressed in this text does not correspond to a taxonomy of digital visual media, and they are not separated between them. At the opposite, they are complementary: as stated previously, materiality is an unavoidable aspect of every medium which determines limits and potentials of the image, and if we consider representation as media purpose, interpretation concerns the ability of achieve this purpose. In conclusion, it is necessary to highlight that the projects described here assumes an aesthetic and demonstrative role. In fact, even if they point to the vanishing of representation, they are themselves a representation of concepts. The works development raises an unsolved issue that leads into the vortex of impossible coherence: how can technology truly express itself, when it is an artistic/human intention to define meanings and reasons for its aesthetics? In other words, is it possible to consider these projects as platforms for technological expression, or as appropriations of technological aesthetics? In both cases, the motivation behind this deconstructive approach is a desire to elevate the imaging technologies to the state of art, in order to criticize our mediated representation of the world. An iconoclasm moved by technological realism.

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