

Chroma Screens –Intra-Actions, Connections and Gesturalities

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Chroma screens is a collective name for the blue and green screens that are commonly used in the process of compositing images in cinema, video and graphics. Taking into account the expanded functions of screens in the postmedia condition, screens are not merely ‘container’ of images, rather they emphasize, interconnect and constantly rearticulate relationships in a media assemblage. This paper explores the ‘intra-active gesturality’ of chroma screens, that is, screens as an enactment of material-discursive practices and analyses ways in which they sustain the relations between various parts of the media assemblage. In considering the specific instance of Sondra Perry’s artwork, the paper argues that chroma screens are a performance of colour where the practices of imagemaking and racial discrimination converge.

Chroma screens. Intra-action. Gesturality.

1. INTRODUCTION

In 2016, on her 90th birthday celebrations Queen Elizabeth II wore a bright green outfit with a matching hat. And memes galore! (Figure 1) The internet was flooded with several renditions of the queen where she was a pizza, batman, cats, galaxy, flower wallpaper to name a few. Such renditions of the Queen’s costume were created because the colour of the Queen’s outfit was very close to the colour of the green screen used in chroma keying. Chroma Keying is a post-production technique where a colour, commonly blue or green, is superimposed with other images. Through the process of keying, the colour is made transparent so that images can be composited on that colour. This technique is also known as the ‘green screen’ or ‘blue screen’. Using the term ‘chroma keying’ is apt when discussing the process. But since my focus is on the screens that are used in the process, I will refer to the green and blue chroma screens, simply as ‘chroma screens.’

Figure 1: Queen Elizabeth II on her 90th birthday celebrations in 2016. Works by various people collated by Bored Panda.

Chroma keying allows an understanding of screens where they do not merely contain, display or project images, as we see on most of the screens around us. What is interesting for this discussion is that chroma keying provides a screen to be filled with images but the recording of the screen (filming or photographing) happens without the images. The chroma screens are recorded just as they are, plain and blank — screens *without* images, screens that wait for images. These screens are deferring the images; their relationship is suspended. Here the images and screens are connected not in the traditional sense as seen in the display, projection and imagemaking tasks. Instead, these are screens that are a placeholder for images during the recording process; screens that *hide* images. In the post-production stage, they *carry* images that are created on other screens, such as the computer screen. In case of films and weather reports, the actors and presenters actively engage with the screens while imagining the images that appear on it. With their movements and actions, they are impacting the performance of the images that has not yet happened. This highlights the multi-directional capacity of screens. W.J.T. Mitchell (2015) argues that we not only see ‘on’ and ‘through’ screens, just like in television and cinema respectively, but also



‘in’, ‘behind’, ‘between’ and ‘from’ screens. However, I want to complicate the chroma screens by not focussing on this unstable relationship that it has with images, and rather attempt to explicate them in a larger context of what contemporary screens have come to mean.

In the postmedia condition (Quaranta 2013, Weibel 2006/2012, Manovich 2001), much research indicates that screens are engaged with invoking new and different gestures, behaviours and experiences, as different functionalities of digital screens are activated in their intermedial position while interfacing between humans, hardware and software (Paul 2015). Keeping this in mind, screens can be argued to emphasise, interconnect and rearticulate the relationship between various parts of a media assemblage. They are what Charles Acland (2012) calls “an in-between manifestation” of medium, format and platform; they are both *how* we see and *are* the connection between all the other media. In this paper, I am interrogating the interfacial, interoperable and organising capacities of screens – the ‘intra-active gesturality’ of screens – in the specific instance of chroma screens. I propose to consider screens not as ‘bounded agents’ but an enactment of material-discursive practices, that is, screens are explicated *in* and *through* the relations they are in. This paper will elucidate the material-discursive practices, particularly in the field of media arts, that produce chroma screens.

I use the term ‘intra-action’ from Karen Barad’s agential realist framework (2007) to signal that screens and other entities of an assemblage are not fixed but are constituted differentially *in* and *through* the relations. Such a performance not only highlights the *becoming* of screens but also the conditions of their production such as relations, systems, and durations, in which they emerge. These relations can be with images, human bodies, institutions with history and organisational practices. In short, connections with material and discursive practices. On the other hand, gesturality, firmly based in Giorgio Agamben’s idea of gestures (2000), refers to the complex state where intra-actions are sustained. In other words, gesturality of screens is a constant refiguring of mediality in the enactment of certain relations where screens can be identified. The specific question here is that how are chroma screens maintaining the relations and connections in the postmedia assemblage? In this particular instance, I am illustrating

chroma screens in Sondra Perry’s works to consider the performance of chroma screens as a surface on which not only images but social biases and discrimination manifest. The colour of chroma screens, then has to be thought through in the entangled material and discursive practices.

2. CHROMA SCREENS

The most common case of chroma screens in cinema, television and graphics is where other images are composited in postproduction – as seen in the above example where the Queen of England becoming the Screen of England (Figure 1). In such conditions the chroma screens are replaced by other images in post-production. However, few media artists have used chroma screens as they are. Hsu Chia-Wei’s *Marshal Tie Jia* (2012), Hito Steyerl’s *How not to be Seen: A Fucking Didactic Educational.mov File* (2013), and Candice Breitz’s *Love Story* (2016) are a few works that use chroma screens not as a temporary substitution of specific images but where they remain an open field of imagination. Here the chroma screens are devoid of images and in some instances, they become images. If chroma screens, emerge *in* and *through* specific socio-cultural practices, then in Perry’s practice they are enacting specific relations of race, class and political bearings of a society. Moreover, the gesturalities of chroma screens are demonstrated in the constant re-connection and re-configuration of different parts of the media assemblage. To reiterate, I am not saying that chroma screens ‘reflect’ or ‘represent’ all these relations; rather I am proposing to think that screens emerge *in* and *through* these relations *inside* and *outside* the media assemblage that they are part of. Specifically, in Perry’s practice, how the colour of the chroma screens materialize in the racialized technological practices. My concern is not visual images, rather how screens can be tangible surfaces that can arrange the visual.

3. SONDRA PERRY’S ARTISTIC PRACTICE

Perry makes installations, videos and performances using digital tools. A significant aspect of Perry’s work is her use of technology to focus on race politics specially in the USA. Blue and green chroma screens are important elements in her installations such as the workstation series, as well as in her exhibition designs as seen in the expositions *Resident Evil* in the Kitchen, New York (2016) and *flesh out* in Squeaky Wheel Film and Media Art

Centre, Buffalo (2017). In the workstation series, Perry uses modified exercise machines with multiple monitors attached to them. The exercise machines are modified to make them difficult to operate such as by adding excessive weight. The work *Graft and Ash for a Three Monitor Workstation* (2016) (Figure 2) is a modified bicycle exercise machine with three screens. The triptych video onscreen shows Perry's animated floating head in a chroma blue backdrop intercut with clips from YouTube on Deliverance Ministries in Nigeria, and a highly modified closeup of Perry's skin (Figure 3).



Figure 2: Sondra Perry, *Graft and Ash for a Three Monitor Workstation*, 2016.

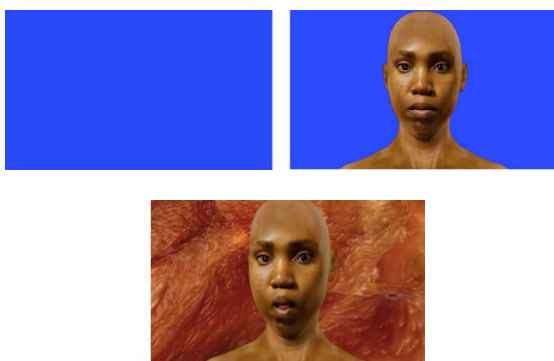


Figure 3: Video stills from Perry's *Graft and Ash for a Three Monitor Workstation*, 2016.

The video foregrounds the discriminatory practices in visual technologies. The avatar of Perry in the video comments on the wellness and productivity of the black body. However, the black human body is not referenced in the

image, rather invoked in its relationship with the blue chroma screen. Here the chroma screen is not an unbiased field waiting for images, but a space emerging from the racialized media and filming practices. The emergence of chroma screens *through* and *in* material-discursive practices requires examining of chroma keying techniques used in various fields (filmmaking, video and graphics) as part of the social, scientific, cultural and economic instances. The methods used in these fields demonstrate the intra-actions and co-emergence of material and discursive practices in chroma screens.

3.1 Histories of chroma keying

One of the histories of chroma screens can be traced to compositing in the early cinematic visual effects by Georges Méliès in the beginning of twentieth century. A popular compositing technique was double exposure that used a black cloth and took advantage of the high contrast of black and white films. Other analogue techniques include 'matte creation' or 'pulling mattes' which involved the pulling of two film strips together physically (Smith 1995). As a material surface, the use of green and blue screens in cinema, started in 1930s. Of course, there isn't just one type of matte extraction (the term used in cinema) or chroma keying (the terms preferred in video and graphics) that was being used. In cinema various processes were successfully implemented. *Thief of Baghdad* (1940) along with *Mary Poppins* (1964) are prominent examples that used different kinds of matting techniques. Nonetheless, the innovations have to be viewed with the film production studios' economic drive as well as a production of cultural knowledge that was embedded in racial bias. For example, the film stocks were predisposed to highlight the 'deficiency' of non-Caucasian, darker skin tones (Roth 2009). In television, chroma keying is most commonly used in weather reports. Even though the early films employed blue screens, video popularised the use of green chroma screens. Moreover, the colour green and blue are used in chroma keying because they are one of the clearest channels (along with red) making it easier for the camera and softwares to process them.

The emergence of chroma screen through specific practices of filmmaking, videotaping and digital graphics is magnified by Perry to highlight the racialisation of technology. If the colour for chroma screen background is based on the use of colour that is furthest away from

the skin tone (Brinkmann 1999), Perry asks the pertinent question, whose skin tone are we talking about? Perry uses chroma screen to call upon the identity politics played out in contemporary America and questions the deliberate acts of violence against the black community by aggregating a false narrative similar to the images that are composited on the chroma screen.

3.1.1 Racialized practices *in* and *through* chroma keying

Perry's work, *Graft and Ash* emphasizes that the practices of chroma screens carry the technological partiality against people of colour. Racial bias in technologies has been widely discussed specially in the critical literature of the failure of technology to recognise bodies of colour (Roth 2009). If the systematic social discrimination wasn't evident, the bias in artificial intelligence and algorithms have validated it (Apprigh et.al. 2018). Kate Crawford (2016) defines "AI's White Guy Problem" to illustrate the discrimination by algorithms in instances such as Google's classification of black people's images as gorillas in 2015. Julia Agwin et. al. (2016) explain the biases against black people in the software used across USA to predict criminals. This disposition of technology that allows prejudiced viewing is termed "algorithmic visibility" by Daniela Agostinho (2018). Analysing the visibility and invisibility of algorithmic practices in Perry's work, Agostinho comments that as a black person's body "the flesh is both bearer of subjection and source (code) of freedom" (Agustinho 2018). However, the blue chroma screen in Perry's work foregrounds the ways in which race is made visible for surveillance and invisible for civil rights. As part of the material and discursive technological developments, the blue chroma screen enacts the refusal to acknowledge the black body; at the same time, it recognises the black body by asserting that its blue colour is furthest away from the black skin tone. This way the chroma screen is an ambiguous and unclear state. It is not just hiding and revealing images, but it is intra-acting with history, race, laws and nation-states along with the discursive practices of representation and technological development.

On the other hand, the performance of black bodies by the chroma screens gesture towards its agency. The installation *Graft and Ash* ties the idea of the labouring, productive and commodified black body. Wendy Hui Kyong

Chun (2009) and Beth Coleman (2009) address race and/as technology. For Coleman (2009) 'race as technology' is an aesthetic category, a technique that can be used towards an affective understanding of race. Chun (2009) grasps 'race and/as technology' as modes of recognition and relation rather than being. The relations that race sets-up *in* and *through* the chroma screens, particularly in this work by Perry, are the spatial-temporal connections that the black bodies have forged across the Atlantic.

To be sure, these connections and conversations have to be examined as intra-actments where both the chroma screens and the practices are being reconfigured. The unfixedness or instability of the chroma screens is what makes them responsive. This open-ness to relations is sustained by chroma screens as gesturalities in the media assemblage. Gesturalities don't merely signal movements in the assemblage, but also their continuity. In the video, Perry's avatar and the audio of Deliverance Ministries are placed on top of the blue chroma. The blue chroma screen intra-acts with the audio of the Deliverance to maintain the 'possession' of the black bodies in technologies and filming practices.

4. CONCLUSION

The above discussion is a glimpse into my argument to understand chroma screens as an enactment of material and discursive practices. Through Perry's work I have attempted to demonstrate that chroma screens are a performance of 'colour', where it is at once about the colour of the skin, the colour of the screen and colour as a cultural performance of racism.

5. REFERENCES

- Acland, C. R. (2012) The Crack in the Electric Window. *Cinema Journal*, 51 (2), 167–71.
- Agamben, G. (2000) Notes on Gesture. *Means Without End. Notes on Politics*. Vincenzo Binetti and Cesare Casarino (trans.). University of Minnesota Press: Minneapolis.
- Agustinho, D. (2018) Chroma key dreams: Algorithmic visibility, fleshy images and scenes of recognition. *Philosophy of Photography*, 9 (2), 131-155.
- Angwin, J., Larson, J., Mattu, S. and Kirchner,

- L. (2016) Machine Bias: There's Software Used Across the Country to Predict Future Criminals. And It's Biased against Blacks. *ProPublica*, May 23. <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing> (retrieved on 14 September 2019).
- Apprich, C., Chun, W., Cramer, F. and Steyerl, H. (eds.) (2018) *Pattern Discrimination*. Meson Press, Lüneburg.
- Barad, K. (2007) *Meeting the Universe Halfway*. Duke University Press: Durham.
- Brinkmann, R. (1999) *The Art and Science of Digital Compositing*. Morgan Kaufmann: San Diego.
- Chun, W. (2009) Race and/as Technology; or How to do Things to Race. *Camera Obscura*, 24 (1), 7-34.
- Crawford, K. (2016) A.I.'s White Guy Problem. *The New York Times*, June 25. <https://www.nytimes.com/2016/06/26/opinion/sunday/artificial-intelligences-white-guy-problem.html> (retrieved on 14 September 2019).
- Coleman, R. (2009) Race as Technology. *Camera Obscura*, 24 (1), 177-206.
- Hankerson, D., Marshall, A.R., Booker, J, Mimouni, H. E., Walker I., and Rode, J. A. (2016) Does Technology Have Race?. Proceedings of the *CHI Conference Extended Abstracts on Human Factors in Computing Systems*, 473-486.
- Manovich, L. (2001) *The Postmedia Aesthetics*. <http://manovich.net/index.php/projects/post-media-aesthetics> (retrieved on 14 September 2019).
- Mitchell, W.J.T. (2015) Screening nature (and the nature of the screen). *New Review of Film and Television Studies*, 13(3), 231-246.
- Paul, C. (2015) Mediations of Light: Screens as Information Surfaces. In Sean Cubitt, Daniel Palmer(eds.), *Digital Light*, eds. and Nathaniel Tkacz. Open Humanities Press, London.
- Quaranta, D. (2013) *Beyond New Media Art*, Link Editions, Brescia.
- Roth, L. (2009) Looking at Shirley, the Ultimate Norm: Colour Balance, Image Technologies, and Cognitive Equity. *Canadian Journal of Communication*, 34 (1), 111-136.
- Smith, A. R. (1995) Alpha and the History of Digital Compositing. *Technical Memo*, 7.
- Weibel, P. (2006/2012) Post-Media Condition. *Mute*. First published in 2006 in AAVV. Postmedia Condition. Centro Cultural Conde Duque, Madrid.