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**THE SEARCH FOR TRUTH IN THE DIGITAL CINEMATIC SPACE AND GREEN
SCREEN PERFORMANCES**

by

KADE DALTON

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Film
in the College of Arts and Humanities
and in The Burnett Honors College
at the University of Central Florida
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Thesis Chair: Kate Shults

ABSTRACT

With the advent of the blockbuster and its visual effects, film has grown to accept these effects and the technology behind them, namely green screen mattes, as cornerstones to the post-production process. The propensity of green screen in all types of productions, especially those involving actors and their performances, raises questions about the methodology and workflow behind its common practice. Using real-life environments and people to create narrative scenes, this project explores the utilization of matte backgrounds to inform the rehearsal and performance aspects of cinematic story-telling.

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INTRODUCTION

The ubiquity of green screen compositing in modern blockbuster films has created an acceptance of its standard practice of placing its actors into non-existent environs that are developed later. But this process is beholden to only the logistics of working with what the filmmaker has, then with what he or she does not. When the actor engages with a green screen environment but must fully imagine its breadth to do so, the workflow predisposes the actor's performance to a rigid framework that favors the nonexistent surroundings to the performance.

And yet the onus is now upon both the actors and the visual FX compositor to realize a world that relies on the other's talents, and supposes that one takes precedence over the other by having the physical rules of the mise-en-scene built around the actor's performance. However, it is the popular agenda of cinema to create a world that feels realistic, artifice being presented as something palpably real to the audience; so to bend it around the actor is to place the world into the perspective of that character. That mindset is not always particular to every story being told, some of which could benefit from letting a world exist before inserting the members of it. It is also rather unintuitive for actors and VFX artists who must work past constraints to imagine this world. Having one before the other could provide VFX artists with more freedom; similarly, a grounded environment for the actors who are to be placed within the fictional world via matting. This creatively-constrained process suggests an implicit need for alternatives to the standard protocol of filming the performers and then supplying their filmic world.

A different methodology that reverses the process of filming actors and backgrounds, could allow for the improvisation of the actors' movements, and contribute to performances that would otherwise be subject to the invisible concepts that dictate the actor's space. Although filming the "backgrounds" – also known as "plates" – prior to the performances would impose other kinds of restrictions and conditions on the actor's space, those constraints would now be physical, or have some material representation with which the actor could play.

The manifestation of a physical setting is often missing when the actor performs his or her scene in front of the green screen matte. Often these manifestations are minute, such as footage that gives the appearance of movement for vehicles, made famous by *The Great Train Robbery*. However, when more visceral pieces of a final image are absent during the actor's performance (Fig. 1), such as active environments and other characters (both are wont to be



Figure 1 – Behind the scenes – Alice in Wonderland – Mr. Depp Acting; 25 Feb. 2010. Web. YouTube. 30 Oct. 2014.

missing in scenes with large settings), the performance is missing the referentially physical relationship between actor and mise-en-scene. When contributing an already realized space for actors to prepare and act with, the green screen performance becomes less of a mind challenge

and more of a reaction to a real space. Film theorist André Bazin, once stated “It is false to say that the screen is incapable of putting us ‘in the presence of’ the actor. It does so in the same way as a mirror – one must agree that the mirror relays the presence of the person reflected in it” (*What Is Cinema*, 97). I feel similarly toward the green screen actor and the “presence” of a real-life environment. My hope is with this examination of the process reversed, the result will make a location referentially physical for the actors involved, and ultimately give them the freedom to better interact and improvise with the space.

Although any narratology imposed on the real-life footage was scripted and devised, the improvisation of my actors and their scenes referred to Cassavetes’ form of improvisation, which sees the artistic input of the actors enrich the written and established materials. This freedom of movement and actor participation is procured through familiarity of the composited green screen space by having its plate as a material to rehearse and perform with. Though performances are still subjugated to boundaries: those of the green screen and the already recorded / constructed physical space it embodies, the green screen’s attachment to reality presents the necessary set of physical rules with which an actor can make informed decisions on the space not based in purely imagination. This brings more freedom to the construction of the space as well by not having to conform to an actor’s movements.

Through preliminary editing and green screen compositing, I also want to experiment with the dichotomy between actors and the mise-en-scene they occupy, exploring both their possible separation and re-stitching a perceived reality out of composed elements. Specifically, I hope to achieve this by gathering footage of different environments and transforming them

into interactive stages for actors and fictional scenes. This paves way to improvisation of movement, which is otherwise quelled by the predetermination of imaginary locations and characters.

A reconstruction of green screen compositing methodology emphasizing the actor's creative engagement with a composited space, could answer to the blockbuster cinema's current struggle to balance commercial viability with meaningful artistic merit. Idealistically it further employs the spatial dimension of composited film/video as a necessary piece of the cinematic language to further engage the audience with a story. New compositing methods also correspond with new technology that could possibly link cinema with virtual reality. My hope is this study will reverse-engineer the psychology of composites in cinema, and find the relationship between the actors and the world they inhabit. Similarly, this thesis might provide some conclusion to a larger question of cinema's place in new media, exploring the interactivity of spectators and the digital divide.

Specifically, I intended to make a series of videos that placed composited actor(s) into documented settings to explore the boundaries of what Stanislavski calls scenic truth¹ between the spatial and digital partition of the green screen. It dealt with the traditional trappings of recording and editing film, but with post-production invading principle photography, and

¹scene truth - the actor-fueled persistence of an audience's belief in a scene. As long as actors remain faithful to a scene's perceived dimensions and physical attributes, realism is maintained.

principle photography entering pre-production. It required me to go out and shoot videos to replace the green screen, but also rehearse with them and assimilate them into the narratives of the composited scenes. They were used as guides on set, as actors performed live in the green screen space representing them. I shot them using either a camera or cell phone in discreet, unspectacular ways, with the idea of separating the banality of the plates from the vivacity and outrageousness of the cinematic characters. Principle photography required a green screen matte background and a space large enough to facilitate a green screen. I used compositing software to allow me to isolate my green screen subjects and insert them into the filmed backgrounds. This video project investigated the boundaries of the green screen's digital partition between performers and their fictionalized surroundings (post-production mise-en-scene), to try finding a new process that favors the actor and scenic truth.

THE PHYSICAL SPACE OF THE CINEMATIC IMAGE

Utilizing the physical dimensions and constraints of a cinematic image, a filmmaker can implicitly convey a narrative by maintaining focusing perspective on the environment of the mise-en-scene, instead of solely its players. André Bazin contended that “[depth of field] is a capital gain in the field of direction -- a dialectical step forward in the history of film language... it also affects the relationships of the minds of the spectators to the image” (*What Is Cinema?* 35). Despite the mise-en-scene being an irrevocable elemental in film, “narratology [often views] *mise en scene* as an ornamental overlay and not as an intricate part of narrative dynamics” (Hodsdon 74). Yet filmmaker and installation artist, Sharon Lockhart provides a clear example of letting the depth or frame margins of the images tell the narrative in her documentaries *Lunch Break* (2008) and *Goshogaoka* (1997), respectively, letting subjects’ actions exist inside and outside the visible frame, if only to give a more thorough perspective of the settings. With *Goshogaoka* in particular, the film’s subject, though only partially seen, is a high school gym. Our limited perspective presumes an agenda of its occupants, exercising students, who are not always seen in front of the camera, but can be imagined outside of the frame. It is this minimalistic use of space that corroborates the attributes of film put forth by director turned theorist Sergei Eisenstein. According to him, its set of complexes, “of principal features, of dominants”:

1. graphic conflict
2. conflict of planes
3. conflict of volumes

4. spatial conflict
5. light conflict
6. tempo conflict (Eisenstein 11)

These visual and aural qualities are much more than elemental principles of film, because they can actually be manifested into a psychological effects on the audience, evidenced by the nauseating feeling procured from the dolly zoom used in *Vertigo* (1958) to simulate vertigo. This manifestation deals in the perceived spatial dimensions of film and its characteristic ability to emulate realistic perspective. But more than an emulation, the confines of the two-dimensional cinematic image are much more exploitable than visual trickery.

Zbigniew Rybczynski's *Steps* -- similar to his *Tango* that sees many overlapping actors repetitively move through a flat photograph of a dining room -- inserts American tourists into Eisenstein's film *Battleship Potemkin* during the Odessa steps sequence in a way that makes the fictionalized space of *Potemkin*'s Odessa steps a much more realized, non-fictional place that could accept new engaging performers. As Tsarist police fire at the unarmed crowd celebrating rebel sailors in Odessa, colorful American tourists peak behind terrified civilians, remarking with curious interest at the unfolding events. "But Rybczynski creates this sequence not only as a single element of his own montage but also as a singular, physically existing space. In other words, the Odessa steps sequence is read as a single shot corresponding to a real space, a space that could be visited like any other tourist attraction." (Manovich 151). This metaphysical purveyance of the cinematic space introduces an elemental tangent to the ones defined by Eisenstein, one that realizes the artifice of traditional cinema and is almost solely accessible

through compositing. It is able to turn a fictional landscape into an occupiable location, one that can be accessed by actors or others. Rybczynski also expresses the same idea of “material demolition of anachronism” (Feldman 46) that connects media with analogue conception and digital conception.

Eisenstein states (of associative links in editing), “This same principle -- giving birth to concepts, to emotions, by juxtaposing two disparate events -- led to... Liberation of the whole action from the definition of time and space.” (Eisenstein 14). His belief correlates to the ideology of compositing as well, allowing the melding of two otherwise unassociated elements. Similarly, Jean-Luc Godard’s *Histoire(s) du Cinéma* pushes visual, auditory, and logical associations to radical ends by conflating and re-contextualizing new and old cinema, somber and lighthearted works, into a bizarre collage that represents something entirely original. Expanding on this and Rybczynski’s works, the combination of two disparate pieces, either distinct in reality/fiction or just having physical distance/incongruence, could allow the birth of a new piece that transcends the 2-D falseness of film’s 3-D space. And a trivialization of space allows for greater range of movement and spontaneity for the actor, whom in a fictional film is the arbitration of verisimilitude. I wanted to particularly explore further the placement of actors in a documented, “real” space, in non-fictional settings, turning the mise-en-scene into a perceived physical reality.

Indexicality and Iconicity

Theoretically, this should already be a perceived physical reality to a viewer. Father of pragmatism and forebear of semiotic studies, Charles Peirce distinguished the “index” as a

modality of a sign, which connects a representation of an object with a factual existence of said object (Peirce 55) In less esoteric terms, the place on the screen is indeed a place in real life. Tom Gunning reaffirms this, citing the “truth claim” of photography, which treats traditional analogue photography as a sincere witness to reality (Gunning 40).

The stipulation for Gunning’s truth claim is the characteristic of “iconicity” in the image. Another semiotic modality of Peirce, iconicity demands an object’s representation must resemble the object (Peirce 55), but does not necessarily have to be the object in real life, and thus is an inherent characteristic of cinema. When this iconicity is missing, the perceived space betrays the established reality in the viewer’s head, becoming unconscionable to any indexical perspective; such is the case with *Mulholland Dr.* in its [introductory scene](#). As dancers fill an empty gradient space, their shapes become filled with the silhouettes of other dancers, and those silhouettes filled with other dancers. It achieves an effect similar to the uncanny valley, which refers to a point of realism or hyper-realism attributed to an object, that fails to be accepted as extant and real – and is almost always rejected by the viewer. The dances’ contortions of perceived space uses the contortion to create emphasis on both the wrought physical space and the dancers. And while Rybczynski greatly displaces indexicality with image iconicity, with his cross-pollination of *Step*’s fictional tourists inside a disparate fictional film, Peirce’s semiotics are for the most part upheld by me filming real locations. The indexicality of those places I film is under question, however, when fictional characters occupy the real locations and interact with them as though true participants. If the viewer can, for all intents and purposes, suspend disbelief, then for that moment in time, indexicality is achieved and that

cinematic element is then real. It is the fictionalized verisimilitude that the idea of realism is based upon, something that I think has substance and can be upheld even with blatantly fictional elements.

Further, that same realness of space corresponds to the green screen set emulating it and provides some level of reliable truth on the green screen stage of the actor. I believe that real space connection must be established and present for the actors to fully involve themselves in a green screen environment. "The theater of Eisenstein's films contains the world. It employs reality as its setting, not as a backdrop but as a central element, material to the action." (Perez 156)

THE VIRTUAL WORLD OF THE CINEMATIC IMAGE

With different visual elements able to exist in the same mise-en-scene, the cinematic image becomes less exclusionary to any real or unreal orientation of footage. Recently, this concept was represented in photography by Benoit Paillé, whose photo project *Crossroads of Reality* seamlessly blends landscape images captured from the video game Grand Theft Auto V with superimposed, real-life hands of subjects holding capture mediums (camcorders, seagull cameras, etc.). Because of the cohesive lighting of the subjects as motivated by the video game, the final images look entirely realistic despite their highly artificial construction. His crossing of the game medium with realistic backgrounds allows the supersedence of the mise-en-scene over the picture-taker to immerse them into that reality. This multi-layered diorama style of photographic art, translated to cinema, would enable the insertion of actors cohesively into any scenario, elevating spatial freedom in a way to ultimately liberate the actor from conceptually physical restrictions. It opens wide the stage on which action is set. Similarly, Kate Shults' film, *When the Alligator Called to Elijah*, antithetically employed fragments of scenery, people, and objects to comprise a full (albeit distorted) reality.

Woody Allen operates under a similar mindset with his 1983 film, *Zelig*, which treats documentary footage of the 1920s – a parade, a baseball game, a speakeasy – as stages for Allen's Zelig character. In these scenarios, the mise-en-scene that Zelig slips into is already established, whereby Allen must conform to the restrictions of the perceived space. The documentary images' angles and framing, as well as the perceived depth of those images,

informs where and how Zelig must be staged. The same obstacle was present in the documentary footage in *Forrest Gump*.

Remarking on the qualification and classification of “new media” (and retorting to Eisenstein’s proposed ideas on film editing), Lev Manovich states, “if film technology, film practice, and film theory privilege the temporal development of a moving image, computer technology privileges spatial dimensions. The new spatial dimensions can be defined as follows:

1. spatial order of layers in a composite (2½-D space),
2. virtual space constructed through compositing (3-D space),
3. 2-D movement of layers in relation to the image frame (2-D space),
4. relationship between the moving image and linked information in the adjustment windows (2-D space)” (Manovich 157)

Manovich recognizes the spatial dimensions within the digital partition that separates composited layers; and if these fundamental concepts are to coexist alongside Eisenstein’s, then Bazin’s refutation of “the neutral quality of this ‘invisible’ editing [which] fails to make use of the full potential of montage” (Bazin 24) should similarly apply to film/video compositing as well. Through this reconstructionism is it possible to edge cinema closer to Lev Manovich’s supposed “new media” that is interactive and digital (Manovich 49) and may make our symbiosis with the digital facet of cinema more cohesive. Gunning remarks on this, “If one of the great consequences of the digital revolution lies in the freedom it gives people to transform a photographic image, we could say that the digital aspires to the condition of painting, in

which...all the components of an image are completely up to the painter, rather than determined by the original subject through an indexical process.” (Gunning 3).

Virtual Reality

An upcoming platform for this new media philosophy of cinema is virtual reality goggles and helmets, which immerse the wearer into a stereoscopic, fully-interactive point-of-view. This is a perfect opportunity for cinema to broaden its scope a la Manovich’s criteria, and reach greater truth through interactivity. In one humorous incident, Sony’s virtual reality viewer, the Sony HMZ Prototype-SR (Substitutional Reality), was tested by in a way to sponsor an upcoming horror film. In a virtual scene, a Prototype-SR wearer Toshi Nakamura sat in a screening room for the sponsored film’s trailer. A prerecorded attendant (filmed from 360 degrees) kindly instructed him to calibrate the Prototype-SR’s orientation before the screening started, only to suddenly pounce on him as a zombie after the screening ended. The immersive scare illustrated that virtual reality is indeed close to a reality, and it is something cinema has to expound on, if not already expounding with two-dimensional compositing.

This virtual reality seeks to lessen the artist’s agenda common in cinema, in favor of a spectacle that can be uniquely interpreted. In this sense does the virtual reality attempt to invigorate Bazin’s claim of pre-cinema’s “integral realism, a recreation of the world in its own image, an image unburdened by the freedom of interpretation of the artist” (“Myth of Total Cinema” 21). Though this representation of virtual reality reveals the world of the spectacle to the ordinary viewer, the introduction of fictional characters into a documented environment exemplifies the opposite, a spectacle contained in the real world. Additionally, the conventional

role of spectator – as in virtual reality viewers – is now assumed by the actor, who plays with a non-present space that he or she can respond to as though they were actually there.

EXPANDING FREEDOM OF MOVEMENT AND ACTOR PARTICIPATION

WITHIN THE CINEMATIC SPACE

The ability to manipulate cinematic space in segmented layers begs the question of how to best use the freedom of the digital medium as Gunning suggests. Permitting an indexical image of a space to shape the mise-en-scene of a fictional cinematic scene would, of course, shape the boundaries of an actor's space on set. However, the green screen's association with a recorded documentation of a space can connect the actor to a place that is not physically present, allowing supplantation of responsibility off the actor's imagination and onto the physical space. The reliability of green screen representation of space can allow for more freedom to move as an actor. That representation is an imperative material that should inform principle photography with green screen.

In a way, this harks to film director Mike Leigh's work, which "...established a highly individual working method in which scripts were developed out of improvisation, the director/writer's role being to 'sculpt' characters and situations out of the material which the actors threw up." (Watson 7). I allowed the transformation of narratives, both concepts of characters and scripts, based on the location material, just as with Leigh and his actors' materials. My idea was not, however, to be beholden to a script during this process, so once a scene's outline, it became only a suggestion for blocking actor movement, with more emphasis on being spontaneous on set. In examining John Cassavetes' work – which has infamously toyed with improvisation in cinema – George Kouvaros notes, "...this does not involve an abandonment of the script in favor of a reliance on improvisation. At stake is something far less

pure but also far more interesting: an extreme attentiveness to the unexpected surprises and discoveries that emerge during and because of the filming.” (Kouvaros 14).

The basis of having this expanded freedom for the actors, and the ability to refer to a factual, established setting for the performance before or while on set, is increased artistic collaboration. Referring to Christopher Guest’s works, “Rather, improvisation forms a sort of democratic or polyphonic artistic motivation that stands out from compositional motivation and extends beyond realistic motivation.” (Bakken 120) That the knowledge of space and freedom of movement lend themselves to improvisation is corollary to the overall idea behind this collaboration. In a modern filmmaking climate, the workflow of conception, execution, and fruition is now assimilated. Whereas pre-production used to be strictly beside itself in preparation for principle photography, it now encapsulates parts of principle photography due to digitization. This includes creating LUTs (“looks”) for camera, programming lighting, and motion capture. Other principle photography facets are disseminated into what is traditionally considered post-production, such as having a digital image technician color grading on set, reframing a shot in editing software, and even filling a scene with props after the fact. For instance, Industrial Lights and Magic FX shows off part of their inventory of digital cars that helped populate an NYC street in *The Avenger* (Fig. 2). What this means for a film production, certainly for one using green screen of visual effects, is the embracing of a new workflow, which re-appropriates pre-, post-, or production tasks into a

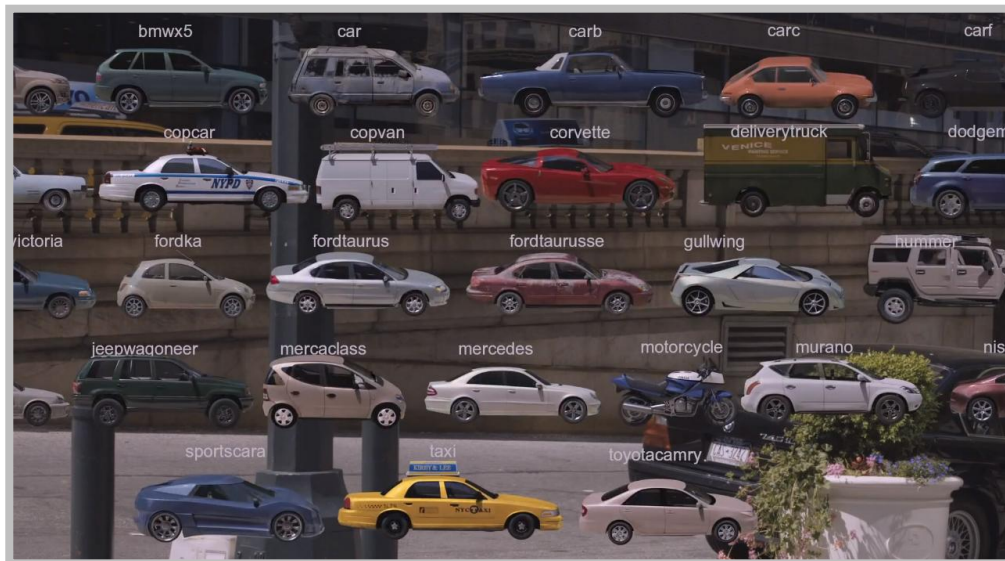


Figure 2 – Behind the Magic: Building a Digital New York for “The Avengers”; 19 Feb. 2013. Web. YouTube. 20 Oct. 2014.

timeline that best fits the needs of a particular film. It is the advent of a more collaborative, symbiotic filmmaking paradigm.

The germ of the green screen aspect of this project came while I was working on a television morning show. The utilization of green screen was involved in several regular segments outside of just weather forecasts. With certain segments or sketches, the anchors would simply share their story in front of a static composited image. In other segments, however, there would be a live portion of the studio – many times with the other anchors – replacing the green screen matte, and this composition was made viewable in real-time, allowing a multiplicity of moving images to interact with each other spontaneously.

An even better example of this shows up in a reoccurring sketch on The Tonight Show with Jimmy Fallon, which superimposes the mouth of the guest and Fallon onto the respective

other, as each person is speaking (Fig. 3). The humorous end result has either Fallon or the guest responding in facial expression what the other is saying.



Figure 3 – Lip Flip with Sofia Vergara; 22 Sep. 2014. Web. *YouTube*. 20 Oct. 2014.

I believe the faith of a green screen actor in his imaginary surroundings relinquishes a lot of the control he or she has while performing. And without that control or reliability in the space, only green matte and the concept of what will be there, the performance will miss the idiosyncrasies and surprises that come with a complete trust of the stage.

THE PROCESS

With little narrative bias in mind, I began filming locations and things in public. I chose real life footage because there was less of a predisposition toward a narrative scene, and it was more elemental. I was also spurred by documentary and fiction mash-ups like *Zelig*, *Medium Cool*, and *The Pervert's Guide to Ideology*, which all combine doc and fiction's homologues in physical image, even when there is a discrepancy between what is real and what is not. I wanted to achieve that contortion through green screen.

Pre-Production

Often storyboards or animatics illustrate the elements of the composited image, showing some semblance of the final image without yet having to manufacture it. The environs and elements that replace the green matte are sometimes referred to as "plates," or background. Their significance is usually small in the hierarchy of composited layers. However, I wanted to change that by shooting them first and having their precedence affect the construction of the narratives / scenes. Without any renderings of a final image yet, or any concrete narrative, the process of recording "plates" felt very disparate from the overall filmmaking process.

To maintain a disciplined and consistent through-line connecting the footage for the project, I had certain criteria for the plates:

Locations

The initial idea that informed the plate process was the idea of shooting mundane, ordinary environs that could be juxtaposed next to cinematic, larger-than-life characters. Capturing the ordinary dealt primarily with the fundamental look and feeling of the locations, all of which were places I regularly visited during my weekly routine: busy roads, classrooms, parking lots, gas stations, groceries, restaurants, etc. These passive locations would keep characters as the primary focus.

Perspective/Framing

I wanted to get videos with various layers of depth to stage actors within a space, not just a proscenium perspective like a flat green screen might suggest. However, I otherwise tried to keep framing as unbiased as I could, leaving it only contingent on variables that I would not try to control (i.e. the height of the camera's perspective informed by the camera strap holding my Canon 7D from my neck, or my shirt pocket nesting my phone). Siegfried Kracauer states in his *Theory of Film: the Redemption of Physical Reality*, "... films may claim aesthetic validity if they build from their basic properties; like photographs, that is, they must record and reveal physical reality." (Kracauer 35).

I also tried to record as much as I could in the populated public areas I visited, to have pedestrians or people or things incidental to that time/place, with whom the actors could engage with – pushing the conflation of fiction and reality. The focus remained off individuals in these spaces, only showing an implicit occupancy of spaces or showing general crowds / pedestrians, as seen in Lockhart's work. I would allow this to work in tandem with the cinematic

characters whom try to interact and get attention of public without success – performance artists.

Mediums

Capturing the ordinary also dealt with the medium I used. Often times I would record from my phone and keep it in my front shirt pocket. I had an inclination toward phone shots because of lesser quality to help distinguish it from the cinematic looking characters. Because of the phone's vertical orientation in shirt pocket, knew I would have to zoom in to maintain a consistent longitudinal aspect ratio across all shots.

Rehearsing with Plates and Principle Photography

The rehearsal process with all actors started with watching the inventory of plate footage collected. Initially our focus was on interesting things or occurrences in the videos, provoking thoughts on where a narrative might go if placed in that location. Later, our discussions concerned where the action would take place and what would perceptibly obstruct that action in the context of the space, such as people crossing camera, unsteady camera movements, or physical landmarks like benches or building columns. The actors and I then formed concepts of fictionalized characters whom could occupy the spaces in outrageous, engaging ways.

Based off those two requisites, we created narrative vignettes with some action that take place within the plate footage. In some cases, scripts were written for these scenes, but they served simply as a guide for what would happen in each scene. Although we avoided

letting the duration of footage or time-specific events dictate the speed of the action and movement of actors, the scenes were kept at smaller lengths that could fit into the footage.

I tried using semi-professional web streaming software similar to broadcast technology, which would hopefully enable me to replace the green matte with the plate footage live as the actors performed. However, the several programs I tried did not support a feature like this; the closest to a live view of the composited image was DSLR Pro, which allowed me to replace the chroma key green with a background image and an over-layed foreground image. Using multiple stills from our plate videos that best showed the space, I isolated the foregrounds into separate still images, and the backgrounds into others. I utilized these images in addition to physical markers on set to recreate the space for the actors. In some scenes, we incorporated real props indigenous to the locations, into the scenes. For instance, as a comedian shuffles along the buffet line at a restaurant where he just performed, he scoops out noodles from one of the entrée trays and dumps them into his bag.

The overall idea was that the only things not physically present on set were the location and whatever people occupying it; and though they were not present, they were still somewhat viewable via the live view monitor on set. The result was invisible interactions between our actors and the spaces recorded for the plates. The effect hopefully liberated actors and allowed full range of movement, excepting the boundaries of green screen and physical markers.

Rehearsing also happened in takes while on set. Looking at the footage before, the blocking of movement was much more natal and conceptual; on set, these rehearsals of movement were very hands-on, literal, and physical. “In relation to this aspect of Cassavete’s

working methods [frequent collaborator Al Ruban] observes that Cassavetes practiced a deliberate policy of overshooting” (Kouvaros 13). I kept this in mind and saw the performances become unique to each take. Afterwards, one of my actors told me having the ability to try things in a performance by seeing the space really helped. “It gave me boundaries for blocking purposes. And it made more comfortable with the space and what I could get away with.” Another actor stressed that she needed some connection with the space to give the best performance.

In some instances, the staging of the scenes was fairly crude. With moving footage or non-stationary shots, we rehearsed like the camera was stationary, but allowed the camera on set to move and interact with the invisible pieces. The idea was to put the onus of matching movement in post-production, not in principle; this, I think, was akin to the practice of using the 5k resolution of images to give directors and cinematographers the freedom to choose smaller, specified areas of the image to create a shot. We also staged most scenes like an arena, with the audience on all sides – line deliveries and eye-lines were directed at no single individuals in the footage. This allowed those deliveries to be directed at general audience, which worked for the scenes because they all featured some character or characters performing for an audience. Had I had the technology to do a live view of the green screen video and not just stills, I would probably have focused on more time-specific occurrences and individual pedestrians in the videos.

Post-production

On set

Part of the initial post-production work was creating stills of the locations, both their foregrounds and backgrounds, to create depth in the live green screen composition on set. These were then saved into the DSLR Pro image files and appeared as an albeit compressed, three-dimensional rendering of the space, that presented actors with every part of the location that existed in front or behind them.

Adjustments

After using them during principle photography, any plates recorded with the Canon 7D were slightly pixelated and de-saturated in Adobe Premiere, and exported at a lower resolution than the original videos. This was done to facilitate the emerging leitmotif of crappy video aesthetics distancing the location from the fidelity-rich, well-composed characters.

Originally, the software I used recorded all the videos to the computer; the green screen monitor would not function if I opted to save to the camera in any way. This posed huge problems because on several occasions the program itself corrupted the videos. However, the videos of the performances that were useable made their way to Adobe After Effects.

Animation

Once imported into After Effects, the green screen performance videos had all visible green of a particular hue removed from the image, through the Keylight effect plug-in. Touch-

ups to the overall gain and threshold of the chroma key removal, created a fine distinction between everything in front of the matte and the matte itself.

However, some portions of the performances too closely resembled the green, either by the intensity of the lights or by articles of clothing that matched the “hotspot” highlights on the matte. For these portions of the videos, I created masks in After Effects, which remove “masked” selections made in the image and leave what is left. Masking out everything and leaving the individuals was arduous enough, but those masks had to be adjusted for every frame of the video where the green screen was not effectively working – essentially rotoscoping. Once my actors were isolated from the green screen, the plate videos replaced the empty space, and my actors’ physical scale and positions were adjusted to have them appear to occupy the location. In the same way that the actors were rotoscoped, any people or objects passing between the camera and the actors’ projected positions in these videos had to cover the actor through additional masking.

The final step in this process was animating the physical dimensions of the isolated actors to accurately match the movement of my camera or phone. Any shakiness of the footage had to influence where the actors were specifically in the image’s frame. Most of this could be done automatically in After Effects by having it analyze the motion of a particular point in the plate footage, and apply its analyzed movements to the actors in the composition.

This was effective until I reached the ends of several plate videos, which were sometimes shorter in duration than the clips of the performances. At those points I embraced some anti-illusionism and allowed a location clip to repeat itself or to jump to another clip from

that location, even as the performances maintained a fluid continuity. The construction of the composition would reveal itself for a split second, only to re-acquiesce to the location's indexicality.

REFLECTIONS

When I first started formulating the topic of my thesis, I was very driven by the expectation of having a result-based project. My initial research led me to a wide variety of examples of films that deconstructed space between the digital barrier of a green screen matte. Those deconstructions opened my mind to the idea of conceiving a cinematic “virtual reality” of sorts, trying to take the schema of an audience interacting with a spectacular world, and apply it to a spectacular fictional character interacting with a documented, “real-life” world.

The project started to change after I began making plans to rehearse with the green screen plate footage I recorded. The workflow felt displaced, the actors became story collaborators, the camera angles and lighting were pre-conceived by the footage. It was as though the film production process folded upon itself. At the beginning, I thought all academic discoveries and practical outcomes would stem from a polished, demonstrative film project that effortlessly proved my thoughts on the virtual space. The result would be aimed at green screen blockbusters in a way to rejuvenate the actor/space relationship. However, the process revealed something unique and applicable to almost all modern productions that use digital technology in some way: the re-appropriation of “pre-production,” “principle photography,” and “post-production.”

Learning was extremely more empirical than I first imagined. The biggest obstacles in the project came from either technical/software issues, or with the stressed responsibility of technology and footage on the rehearsal and performance aspect. These are obstacles I think similar productions would face when applying the mixed methods of production. Having the

mise-en-scene of a recorded space become a fixture for actors and staging creates certain constraints on the image, but I believe this methodology is extremely useful in giving trust and control to the actor while performing in the space. Similarly, integrating the team responsible for creating the spectacle of a green screened environment, prior to performance, could allow them to form a world, not just a shot. I think the successes of having actors comfortable with their knowledge and control over a factual physical space will make me look for more ways to involve a filmmaking team on all levels of production. Creating that symbiosis among filmmakers might yield better films and more insightful filmmaking experiences.

The result of this project also provoked some thought on the creative concept of the thesis. The conflation of performative fiction and documentary – a jagged blending of them due to all the digital pixels, artifacts, and idiosyncrasies – is not new; most of the cited films use documentary footage in some elemental way toward fictional narrative. Although their use of these documented pieces are inherent to the context of the films' fictional stories, this footage is rarely exploited to become something outside the context in which they were documented. A raucous protesting riot in *Medium Cool*, a real documentation of that event, is the setting for a fictional character to react to the riot's violence and mayhem. This literalization of the riot in a fictional format restricts its context to being nothing besides a riot in the film. But in cases like the record parade footage used in *Zelig* with Zelig receiving the cheers of the parade-goers as he rides a float, the context of the parade is now transformed to become a parade about him. It is no longer simply a setting or content, but a device for showing off the celebrity of fictional

Zelig. After experiencing many recorded locations as pieces to an overall fictional work in my project, I feel that the use or misuse of their contexts can be explored much further.

In this project or a similar mash-up of doc / fiction, any emotions or meaning are based on the performance aspect of the piece; how the actors respond in their interactions with documentary elements on screen informs how those parts are viewed. For instance, in the case of a recorded video of a pedestrian briskly walking somewhere, a number of different meanings can be culled from different fictional performances placed in the pedestrian video. The pedestrian could be walking briskly because someone up ahead is calling her to come quickly. This person could be walking away from a now ex-boyfriend trying to get her to talk out their problems. Any number of situations and meanings can come from the literal act of a person walking. Even more exploitative than that, a walking pedestrian whom we never see the front of could even deliver dialogue and develop as a character. The imposition of fiction on recorded elements never was the main focus of my study, but its results in my project yielded an array of possible story-telling conceits.

I would love to do more work regarding this, especially from a story-telling standpoint which allows me to change most story elements after recording them. That control and, alternately, experimentation lend to a stronger creativity within a film because it can be fully assembled into something it was not yet during production. In the future, I wish to extract more people or setting elements from documented videos and use them in contention with each other; having more of these video fragments solidifies this work as more collage or live-action

animation than any other art format. Specifically, the story-teller's suggestions of cinematic artifice and performative fiction within a documented scene is worth delving into deeper.

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