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Camera Creatures: Rhetorics of Light and Emerging Media

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CAMERA CREATURES
RHETORICS OF LIGHT AND EMERGING MEDIA

A Dissertation
Presented to
The Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctorate of Philosophy
Rhetorics, Communication and Information Design

by
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ABSTRACT

Camera Creatures addresses the new media landscape in which cameras, in most situations, outnumber pens. The dissertation argues that despite the accessibility and power of imagemaking devices, there persists in the humanities and social sciences a hesitation to engage the possibilities for composing with optical media. A number of factors contributing to this trend are addressed, including the preference for image analysis over imagemaking practices, persistent assumptions of the camera’s mechanical objectivity, and a tendency to teach visual invention as collage. As a counter-measure, a proposal is made for investment in the mediation of light, or “photonic rhetorics.” To explore these effects in visual communication and the possibility of bringing them into practice, three emerging camera technologies are examined. The first, the photo app, focuses on the controversy surrounding embedded journalists who use social networks and the Hipstamatic camera phone application to relay stories of U.S. Marines deployed in Afghanistan. The chapter argues that the filters and shooting styles of these mobile apps encourage fluencies in the persuasive effects of light. The second camera technology, the video clip, addresses the long take as the predominant technique of everyday video-making. Film theory, video sharing trends, and circadian science contribute to a discussion of the rhythms of long-take shooting and its capability to expose both visual habits and the contingencies capable of
disrupting them. The third site turns to video game “shooters” and the virtual camera’s construction of “surrogate vision,” which the author argues is a critical tool for understanding the future of mediated interactivity in both physical and digital landscapes. The dissertation concludes with a pedagogical section devoted to conscientious cheating. Alongside theories of deliberate practice, “cheating” is repurposed for education, offering new ways of testing the “rules” of optical composition while discovering opportunities to intervene in light’s constant mediation of perception.
For Donat and Rosina Rainey.
...poor Io drank from muddy streams
and, when she tried to lift her arms to plead
with Argus, found she had no arms to stretch;
and when she tried to utter some lament,
nothing but lowings issued from her lips,
a sound that she was frightened to emit—
herself voice frightened her.

—Ovid, *Metamorphoses*
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Although the 1992 FotoMan heralded a revolution in imagemaking, it never quite looked the part. Vertically oriented, minimally designed, and available in black or white, the consumer market’s first digital camera resembled the size and shape of the smartphones which would succeed it a decade later. Its most distinctive features were its four outer camera components, arranged to suggest a face on the FotoMan’s shell. The flash and the viewfinder comprised the eyes, one opaque the other transparent, giving it a lopsided appearance. The lens and trigger formed the circular nose and button mouth, together controlling the camera’s intake of the world. The overall impression was a surprised wink, as if the FotoMan himself had been frightened by what he had seen—only (wink), no need to worry: everything had been saved.

The few mainstream publications that reviewed the FotoMan considered it a high-end computer peripheral, and not without reason. Logitech, which had purchased the device from the camera company DYCAM, had a reputation for
manufacturing computer mice, not imaging equipment. In fact, the color options for the FotoMan signaled less about the company’s regard for user choice than the challenge of straddling two loosely connected submarkets in consumer electronics. Computers were often packaged in “snow white” casings while the audio-visual world preferred jet-black.\(^4\) The FotoMan, with its $799 price tag for either color, was trying to appeal to both divisions. Yet neither market offered much of a precedent for its visual design. Its mechanical “cuteness” was caught somewhere between Fisher Price’s 1970s pocket cameras and Hanna Barbara’s Rosie the Robot. As a result, its commercial clients and tech-savvy early adopters, considered it more of a “weird gizmo” than a next-generation technology.\(^5\)

Perhaps anticipating these first impressions, Logitech’s president, Pierluigi Zappacosta, indirectly defended the distinctive styling during its launch, declaring that “FotoMan represents yet another step in ‘humanizing the computer.’”\(^6\) The comment plays up Logitech’s “_Man” line, a marketing campaign in the 1990s that included items like CyberMan, PenMan, AudioMan, MouseMan, MusicMan, and SoundMan—a product series sounds more like a team of second-rate male superheroes than a line of computer peripherals.\(^7\) Logitech seemed to share the joke. The scare quotes around “humanizing the computer” in the FotoMan’s press release emphasized that this was not, literally, the company’s mission statement. “Humanization” was simply a marketing buzzword, not to be
confused with advancements towards artificial intelligence. These products, despite their suffixes, were not more alive than their predecessors. The scare quotes indicated that these new “_Men” had nothing to do with the night terrors in popular culture, from Stanley Kubrick’s Hal to Rutger Hauer’s Roy Batty, stories of technology becoming all too human.\(^8\)

Additionally, by foregrounding the FotoMan’s “humanity,” Zappacosta downplayed the device’s automatization of photography, specifically its replacement of hands-on darkroom techniques with computer processes. If this is an intrusion—the FotoMan said with the intimacy of a shared joke—then it is the debut of a sidekick, still a little goofy and untested, who only desires to relieve you of a few of the menial darkroom tasks which impede the more important work of taking and sharing images. Promises of more speed, more convenience, and more fun were leveraged on the hope that customers would remain sufficiently amused to neglect the question: At what price?

In the years since the FotoMan’s launch, digital cameras have followed through with these early promises. Today, they are one of the prime instruments of new media communication. No longer restricted to making photographic images, they have expanded into applications like video chat, augmented reality, participatory journalism, and 3D gameworlds. Literally and figuratively, they are intimate members of our social networks. From the cries of the hospital to those
of the battlefield, cameras herald human life in real-time, mediate the struggle to
breathe, to move, to share the sights and sounds of individual experience.

The cameras offer to composition and communication, however, still
seems to be in the negotiation stages. Their place in the liberal arts—as well as the
status of all the optical media they generate—remains unsettled. Art historians
like James Elkins and Barbara Maria Stafford have explored images and
imagemaking as a tool for critical inquiry. Their strategies have often been to
join the economies of the fine arts and the hard sciences to advocate a cross-
curriculum visual literacy. Following a similar logic, institutions have
restructured themselves to accommodate emerging visual technologies in the
humanities and social sciences. Initiatives have been welcomed under the banners
of New Media Studies, Multimedia Literacy, Digital Media, or Digital Humanities.

Despite the novelty of these divisions, a long-standing routine persists for
dealing with optical media in the humanities. Cameras and other optical devices
are often regarded as a new form of writing instrument: just as the pen extends an
individual’s language onto paper, the camera is thought to extend an individual’s
sight onto screen. The key agents that both are thought to share are operator and
apparatus. Their compositions are crafted between “author + tool.” The
problem with this model of communication is that it requires a very static
approach to *logos* and language, one in which meaning is clearly apprehensible and conforms predictably to the structures we use to express it.

The author-tool approach becomes even more problematic when applied to optical compositions. It is a model that forces us to neglect the camera as a meeting (or mediating) place. *Camera*, after all, literally refers to a “room.” Its darkness organizes the interactions of a host of agencies, the most important of which involve light. Traditionally, those interactions took the form of chemical reactions (as when light strikes the silver grains of negative film). Those chemical changes have given way to computational reactions (as can be seen when light strikes a digital sensor). In either case, light’s behavior is the raw “material” of the activity in these rooms. Whether analog and digital, the resulting images are impressions— incomplete artifacts, translations—of the exchanges that occurred in the *camera*. The temptation is to forget this room and its activities—forget that the camera has “fixed” light for our viewing pleasure, that it has translated dynamic phenomena into a static document. What falls out of view is the alterity of light, sacrificed for the convenience of a single-user model: author + tool. Interactivity can then be circumscribed in the interface between them. The operator’s vision is captured; the play of light and its compression is forgotten. As a result, the camera’s room is cordoned off, the aperture barred, the gate
sealed, light-tight. Images and visual communication become a much more straightforward affair.

If we recognize the tremendous gains in speed, accessibility, and sensitivity of visual technologies, if we heed their call to reevaluate general education, then there is a need to attend to the ulterior agencies that are at play in our extended vision. New media’s role in unconcealing these assemblages has already been interrogated by artists like Pipilotti Rist, Bill Viola, Doug Aitken and Joan Fontcuberta. They each have questioned digital technology’s ability to re-present our “intra-actions” with fields of light. Light has been a pathway for them to explore the relationship between screens and embodiment, reflection and perception, virtual living and landscapes. In this dissertation, I am concerned with similar intra-actions, particularly the role of new camera practices in bringing them into a “legible” and communicative space. My pathway, thus, has a rhetorical bent, drifting often to questions about how we compose and are inescapably composed by our correspondences in light. I draw these questions respectively to still, moving, and virtual image technologies to pick at the camera’s future in education and better examine what light might tell us about logos.

First, however there is the matter of the closed camera. An assessment is needed of the habits in media theory that divert discussions away from light’s agency and interactivity. These are the enclosures that seal media theory light-
tight. Three seem more obdurate than others. The first is the typecasting of camera technology as a prosthetic double, an uncanny clone of human vision. The second arises from the divide between analog and digital technologies, and the old being threatened with erasure by the new. And the third can be found in the continued preference of image “texts” over camera techne and practices. Only in better examining these enclosures, in feeling for their edges, might we crack the seals, let spill into the darkened chamber new “bodies,” and expose a more dynamic interface—the co-compositional reactions among beings, image-making apparatuses, and light.

**Enclosure 1: Technology’s Uncanny Double**

Ironically, one of the most significant obstructions to exploring the intra-activity of light is our own preoccupation about the “humanness” of technology. This self-reflecting gaze is the very one which the FotoMan’s sidekick-cute design tries to turn into a marketing advantage. The stakes of Logitech’s stratagem and this self-reflecting gaze are clarified in Barbara Johnson’s distinction between anthropomorphism and personification. Reading Charles Baudelaire through Paul de Man, Johnson asserts that anthropomorphism posits a given about human nature. On the other hand, personification, she asserts, estranges that which we assume to be essential about our nature; it makes uncanny what is most familiar.¹²
As we have seen, the FotoMan riffs on this division. Its marketing and design graft a cheerful disposition onto a plain container of technology, taking advantage of anthropomorphism’s appeal. At the same time, the shell disguises a personification at work in the innards of the apparatus. A device that stores images with perfect recall and instantaneous calculations potentially threatens human imagination. Logitech could safely market the amenities of digital memory as long as that personification remained cloaked under the camera’s campy features, which issued a chuckle at the thought that human memory might need digital enhancement in the first place.

Another way to understand these two faces of the FotoMan is through Marshal McLuhan’s discussion of extension and amputation. Although McLuhan is best known for advocating technology’s complementary extension of mind and body, he also cautions against its seduction—the temptation of seeing our own self partly exteriorized in the environment, amputated from our bodies. In a chapter of *Understanding Media* entitled “The Gadget Lover,” he develops these two ideas by returning to the myth of Narcissus. McLuhan underscores how the “extension of [Narcissus] by mirror numbed his perceptions until he became the servomechanism of his own extended or repeated image.” Imaging technology separates Narcissus from himself. He falls into a “narcosis,” or a “numbness,” immobilized by the familiar but bizarrely foreign glint of life in his double’s eyes.
He is fascinated by the same forbidden intelligence that Johnson sees in Frankenstein’s monster. The cut of amputation severs him from his own imagination and recasts his thinking as a not-entirely-other-being. It is an “auto-amputation” or a self-estrangement which births an automaton.

In terms of technology, the creaturely double embodies a human knowledge distended by the machinations of science, separate from but always and forever a reflection of the human mind. The same holds true for the FotoMan, which, as a rudimentary digital prosthetic for vision and memory, encases a cold, android sensibility. It is distinct from yet constitutive of its operator. Confronting it, users fall into an exchange loop with the apparatus, like the visual relay between Narcissus and his quasi-doppelgänger. The camera poses not an interface but an inner-face, a trap for our vision and imagination—a perpetuating extension and amputation whose only product is a commentary on our own immobilized state. The view of the water, the bottom of the pool, all of our surroundings dissolve. Users are left enthralled and resentful of their prosthetic double.

The biological and psychological effects of prosthetic apparatuses—such as when we consider the camera an extension of our vision—become clear in the life and work of Sigmund Freud. For Freud, the human doubling of the apparatus creates more of a chronic discomfort. Freud himself suffered recurrent pain from
a prosthetic replacing part of his mouth and jaw, which were excised over the course of multiple cancer surgeries. The apparatus made eating and speaking an exertion—“the monster,” he called it. After a visit, Arthur Koestler compared Freud’s articulation to “children imitating the speech of their toothless elders in cruel mockery.” Even as the psychoanalyst strained to demonstrate his abilities, they never escaped, in Koestler’s view, an incongruity with their former powers. Freud’s capacities had become estranged.

Is it just to compare Freud’s discussion of prosthetic technology with the FotoMan’s distending of vision? Freud certainly applies the idea of prosthesis liberally in his writing, often using visual metaphors to do so. He explains prosthetic technology with the examples of glasses correcting vision, microscopes replacing retinas, photographs substituting memories. Despite these visual characterizations—each describing an optical device that can be picked up and put down—Freud maintains a haptic connection, a link between the prosthesis and the body. For example, in assessing the industrial advancements in 1929, he writes, “Man has, as it were, become a kind of Prosthetic God. When he puts on all his auxiliary organs he is truly magnificent; but those organs have not grown on him, and they still give him much trouble at times.” The description parallels the daily labor of Freud’s daughter, who assisted her father with the often painful challenge of inserting and removing his prosthetic. Technological organs are put
on, and taken off. The trouble they provoke is a matter of fit: how well they sit within the body.\textsuperscript{18} No matter how externalized glasses, microscopes or cameras might seem, they ultimately work their extensions from inside. The visual apparatus is enclosed, like an organ, both materially and psychologically, within the self. Other agencies and “bodies,” namely light, would not be important to understanding the prosthesis’ re-fitting of vision.

This internal/external tension as well as the optical nature of the prosthetic is further underscored in Freud’s understanding of the uncanny. Freud follows the multiple etymologies of the German word, \textit{unheimlich}, which he conventionally translates as a feeling of not-being-at-home. Yet he also broadens the word’s connotation to “something that was long familiar to the psyche and was estranged from it only through being repressed.” The repressive urge, with its ties to the unconscious, sets up a second etymology, one Freud reads through Friedrich Schelling’s “definition of the uncanny as ‘something that should have remained hidden and has come into the open.’”\textsuperscript{19} Here again Freud emphasizes the visual nature of discomfort—a disturbance from within that erupts into view. The prosthetic, which should fit with our body, does not, and, therefore, disturbs our entire being.

Empirical research has begun to support Freud’s connections of prosthetic technology and the uncanny to visual perception. A kinematics study requested
that participants watch robots raising cups to their mouths and then watch other humans raising cups to their mouths. Greater activity was found in the participants’ parietal cortex when observing the robots’ cup raising. Because this region of the brain is home to “mirror neurons,” which fire when a person perceives human movement, researchers speculate that the extra brain activity might be explained from the dissonance between how a thing looks and how it moves.\textsuperscript{20} A follow-up study, organized at Indiana University, graphed emotional responses to increasingly lifelike robots: the more lifelike the robot, the more revolting the subjects found it. The research team proposes one likely cause: human “disgust as an evolved mechanism for pathogen avoidance.”\textsuperscript{21}

The findings corroborate Masahiro Mori’s theory of the uncanny valley—a rise in familiarity when objects are human-looking (or anthropomorphized, remembering Johnson’s use of the term), followed by a sharp decline when they become too \textit{humanlike} (or personified, again in Johnson’s use of the term). Mori uses zombies and prosthetics to chart, respectively, the valley’s nadir (i.e. disgust) and its incline back towards the pleasures of viewing a healthy human.\textsuperscript{22} These studies insinuate that external cues provide a visual warning of altered internal states. The uncanny gaze onto an \textit{other} body is a look that tries to assess the danger to one’s own health. Ernst Jentsch, a psychologist whose writings predate Freud, contends that this disturbance, or uncanny sense of danger in the visual
field, results from an equivocation between the living and the dead. Evidence of this reaction lies in a history of shameful treatments of the infirm and a fascination with tales of the undead. The sick often limp, shudder, and move about more languidly than a healthy person. Therefore, those who historically had a more developed sensitivity to this estranged movement might have fared better in times of plague and pestilence.

As we have seen with cup-raising robots, indistinction between living and nonliving things can also apply to technology, as long as the apparatus sufficiently mimics human capacities and intelligences. The term itself, “prosthetic,” sets up this kind of identification—a hand, a limb, a nose that “passes.” When “prosthetic” is deployed in media theory, it suggests that technology has become this other body, one that passes for human. Such personification carries powerful appeals: it capitalizes on the pull of the uncanny valley. In the case of the camera as prosthetic, it breaches human eyesight and memory. It illustrates the limits of biological sight and, in so doing, estranges it. Those who draw too close to its digital optics are infected with augmentations. Shadows of their former selves, they shamble forward as glaring examples of human obsolescence, wondrously and dreadfully re-animated by technology.

To be fair, this uncanny mechanism is not always a negative force in media theory. For example, uncanny prosthetics are famously repurposed in Donna
Haraway’s “cyborg figure.” In her configuration of post-humanity, she argues “we are all chimeras...hybrids of machine and organism.” With the cyborg, issues of fit between body and technology are moot; the artificial has been enfleshed without any marker of where technology begins or ends. By multiplying the extensions and denying the amputations, Haraway brings the uncanny nature of technology fully into view so that it might combat entrenched, essentialized definitions of femininity and able bodies. In a similar tactic but for the purpose of illustrating the advancements of optical communication, Friedrich Kittler labels the telegraph and telephone substitute mouths and ears. They are pioneering intrusions into the human body that should be celebrated; together they function as “technological implementations of the central nervous system,” which have all the “elegance of brain functions.” In both Haraway and Kittler the body completely assimilates the apparatus and its forbidden knowledge. Freud’s stretched grin becomes a sign of hybrid intelligence. Technology blends, concealed but not fully repressed, like the heart transplant Jean-Luc Nancy depicts as the intruder within, a strangeness whose rejection must be suppressed to permit Nancy’s survival.

The pitfall of focusing on technological prosthesis is that interactivity is enclosed in the relationship between the apparatus and its human user. Any look to technology becomes the look of Narcissus—self-reflecting and static. We
gaze upon our mirrored imaginations because we have appropriated all externalized views onto other bodies or materialities. Interactions and practices fall away to questions regarding the wellness of our own flesh. The only subject left to the technology is the Moebius strip, which Jean-François Lyotard details in *Libidinal Economy*. The entire organ of the body is stretched out, “joined end to end” with “no back to it.” We see a “great ephemeral skin” an “interminable band...which interests us not because it is closed, but because it is one-sided...and therefore neither exterior nor interior.” Without beginning or end, the Moebius strip presents a ticker tape of our own humanity that forever circles back onto itself. The mirrored view of ourselves in technology might be productive if, following Lyotard, we examined the band for impacts of other materialities or, following Nancy, we pondered its consubstantiality with other bodies. But if an other lies in the band, it is our own false newness, doubled-back, masquerading as an encounter with something foreign: a Janus figure stretched into a loop, enclosed in an inner-face with the digital apparatus.

**Enclosure 2: Old and New Erasures**

By claiming prosthetic technology constructs an undead enclosure—a Narcissistic internal/external exchange loop between operator and apparatus—I am suggesting that this approach to digital media is essentially grounded in
exclusionary logics. To situate technology as uncanny, it must reconfigure or reanimate the human body in a substantial way, making its users, like the robots raising cups, part of a recognizably different class, one that can be identified and examined. Once identified, the re-animated class can be examined, biopsied, in a sense, for living samples of digital media’s effects on previous capacities. All this begins by investing enough in the operator-apparatus relationship that it distinguishes a well-defined specimen.

The distinct specimens of prosthetic technology are particularly useful to comparative media studies. The prosthetic camera, for instance, offers an area which might be probed to gauge the amount of disruption digital optics have caused within former norms of perception. To get measurements, modes of seeing are contrasted—one past, one present. The readings produce either an anxiety about loss or perhaps an enthusiasm for gain. The resulting nostalgia or optimism only encourages further comparative tests to pinpoint the reasons for change. This is the theoretical methodology that prevails in commentary on new media. The nomenclature suggests as much. New media are assumed to have overgrown the old, the digital atop the analog, the online over and across the offline.

Kittler, for one, relies on this distinction between former and future modes of inscription. He recognizes in digital technology the coming to fruition of an
ambition that dates back to the earliest cave drawings. Optics now promise to disrupt the pervasive “monopoly of writing” that has governed human communication for millennia. In Kittler’s terms, textual composition is simply a slow broadcast medium. Optics and the image, whose apparatuses send and receive across channels more indigenous to human vision, are the natural usurpers of the written word. They advance communication along the path to becoming more human.

While comparative methodologies are certainly helpful in establishing histories, they often draw attention to an impact and erasure—an effacement in the transition from one technology to another. The erasure is not limited to the digital overtaking the analog; it runs through any technology that seems to upset another one. Perhaps the most influential erasure for poststructuralism is that which Jacques Derrida finds in the graphic mark’s substitution of the spoken word, a displacement of orality also reviewed by McLuhan and his teacher, Walter Ong. Other find the erasure in print technology’s eclipse of the written word, such as in Martin Heidegger’s claim that the typewriter “tears writing from the essential realm of the hand.” We have seen it recently in cinema studies, when for example Garrett Stewart suggests that digital filmmakers demonstrate a post-celluloid discomfort with the “binary (com)mutations” of a “computer picture.” The impact erases the very materiality of the medium itself, replacing celluloid
with the “weightless easel” of pixels and bits. And, more popularly, the erasure strikes commentary on networked life, like in Nicholas Negroponte’s *Being Digital*, a book structured around the contrast between the atom and the digital bit. Society has shifted from the former—material with weight and volume—to the latter: a material-less sign or code which “has no color, size, or weight.”

Despite their vast differences, all comparative media theories share an interest in the fallout wrought between the shift from one compositional medium to the next. Moreover, that fallout is usually contextualized in terms of what it means to be “human.” Some offer a prognosis for “more human,” cyborg-like living; others, like Stewart, bring a more sobering diagnosis of “eroded human ontology.” He finds the once confident human imagination, decomposed by its intercourses with the FotoMan’s new compositional technology.

The theoretical grounds of this erasure in digital media come to light in a disagreement between Derrida and Bernard Stiegler. Their positions reveal not only why this erasure exists in any medium’s communication of meaning, but also how the erasure is linked to the visual nature of digital technology and human thought.

Like Haraway, Derrida redeloys the uncanny as a critique of essentialism. He problematizes a Platonic notion of logocentrism, which denies the break between sign and signified. Logocentrism upholds the text as a lossless
transference of a speaker’s voice and thoughts. Derrida contends that any graphic figure—be it the mark of a pencil, a brush, or a camera—confronts its onlooker with the gap in the substitution of sign for thought, exterior graphic for interior idea. Writing, therefore, serves as a kind of prosthetic; it exteriorizes memory and meaning from its original “presence.” Writing’s visual signs are amputated from their ideas. In that breakdown, we confront the traces of those ideas and meanings.

As much as he discusses writing, Derrida is reluctant to enumerate its differences as a medium. He does not compare modes of transcription, like the substitution in a typewriter’s imprint and the substitution in a pen’s stroke; instead, he prefers to emphasize différance—the unbridgeable gap which attends any mark’s substitution of meaning. It is to this point which Stiegler objects, and it is here that the cognitive impacts of different media can be best observed. In his interviews with Derrida and subsequent commentaries, Stiegler raises two counterarguments. First, too much blends in the “arche-writing” that Derrida presents as an alternative to logocentrism; Stiegler prefers more difference in his différance. He believes prosthetics come in types, one simply not being a supplement for another. Different media leave behind discrete forms of transcription, what Stiegler calls “image objects,” and these image objects can be sorted into a small taxonomy: there is the analog image, like a photograph
developed in a darkroom; the digital image, or an entirely virtual object, like *Toy Story*, a CGI feature film; and finally, the “analogico-digital” image, or the combination of the previous two, like the pictures taken by the FotoMan. Together these might crudely be called classes of visual *différance*—three types of object images that cause separate configurations of light and, thus, distinct experiences of time and movement.

Stiegler’s second point is that distinct “image objects” correspond to different types of “mental images,” or types of mnemonic meaning-making.37 Watching a digital video of Buzz Lightyear will provoke different imaginative responses than viewing a photograph of a Buzz Lightyear doll. The conclusion corresponds to Stiegler’s work on the relationship between memory and “technics” (*techne*). Technics appears in the use of tools—language, cooking, carpentry, the camera—any means by which human beings write themselves into the world and, in turn, write the world into their memories. Technics emerges in “the play of interior and exterior milieus, articulating themselves onto one another.”38 Naturally, then, if one changes the tool used to perceive an exterior (image object), then one changes its articulation into the interior (mental image).

To some extent, the consequences of tool selection seem like an intuitive deduction. Research even corroborates the idea that different media produce different cognitive patterns. For example, studies have shown improved recall
when people handwrite as opposed to when they type. What should not be overlooked is the attention Stiegler gives to digital and analogico-digital media in his critique. Because he claims digital photography is subject to Photoshop alterations, because the direct inscription of light has “decomposed” in digital images, because “photons” have “become pixels that are in turn reduced to zeroes and ones on which discrete calculations can be performed,” Stiegler concludes that a “deferred” time takes hold. This is the mental impact of the digital image. He names it “the time of storage.”

Seen in this way, the FotoMan, cute as it might be, represents a breech in the history of human experience with time. With the FotoMan, and all digital cameras since, the image is subjected to a slumber, a storage unconscious that can be awakened by the intelligence of this not-entirely-dead thing. Belying its hokey design is the seemingly superhuman power to compose in a time outside of time, to render the present into a past that is forever immediately retrievable. Time and perception become thoroughly mediated.

As an uncanny prosthetic personified with these abilities, the digital camera’s threat to the human imagination only intensifies. As we dwell on its displacement of our mental processes, we lose track of its mediation of other parties—the most obvious of which being light. Media practices are circumscribed evermore around the inner-face between operator and apparatus.
This enclosure is reinforced most of all by the power attributed to the analog and digital divide. As I have said before, studying the differences in use and construction of digital tools certainly has its value (I will in fact do just that in some of the chapters that follow). But the conversation of the digital shift too often slides away from practice into verdicts on its role in cognition. Marc Prensky, for example, famously coined the generational label “digital natives” to describe those who have grown up imbricated in digital media and whose thinking has radically diverged from that of their parents (or to plug in Stiegler’s terms: the *discrete difference* in the way digital object images have correlated, albeit brokenly, with the mental images of a new generation). The distance separating the two is so vast, that the older generation (with their outdated analog modes) must “immigrate” and take up the “process of learning a new language.”\(^{41}\) Concurrent with Stiegler’s other work, Prensky notes that this new mental language is dominated by speed and heightened visual processing.\(^ {42}\)

Such claims have awakened both the optimism and pessimism that follow any discussion in which something so intangible and highly prized as imagination or attention is at stake. No matter how many efforts recount the educational possibilities of digital technology—like Ian Bogost and James Gee with persuasive gaming, Henry Jenkins with spreadable media, or Jay David Bolter and Richard Grusin on the empathy of remediation—other voices will warn about the
developmental toll for digital “natives.” For example, Nicholas Carr enjoys bestseller status reporting on the mental “shallows” trickling through web browsers and game worlds. The logic of Stiegler’s taxonomy runs underneath Carr’s displeasure with the manner in which the screen “inevitably turns the pages of books [analog images] into online [analogico-digital] images.” Once converted, they are “strip-mined” by a passing netizen’s fleeting attention. With such language, not only does Carr make violent the effacement of old media, but maximizes the threat of an uncanny intelligence.

The erasure becomes even more menacing with Neil Postman who warns us that the battle lines are not simply drawn as “tool against tool.” It is not “the photograph attacking the art of painting, television attacking the printed word.” Rather, for Postman, “When media make war against each other, it is the case of world views in collision.” Nothing less than civilization is at stake, and with the digital natives as colonizers of the culture war, the older generation of would-be immigrants have few choices left besides embracing their own analog nativism to fight the oncoming effacement of digital apparatuses.

With so much vehemence on display, one cannot help questioning where the unique difference of digital media might lie. Where does the impact of the erasure come from? A usual suspect is digital processes themselves—the mode of transmitting sensory information with code. In digitalization, an analog wave is
sampled at regular intervals, assigned values, and stored numerically; the
compressed data can then travel quickly and economically to another source. As
code, it can be reconstructed in endless iterations of the original input. These
processes of replication have been a longstanding target for critics. Daniel
Boorstin, for one, celebrates the ingenuity of the printing press but laments its
“duplication impulse.” Modern media, he argues, with its accelerated
reproductivity, devalues sacred texts like the Torah, which was once “slowly and
reverently written down...guarded from the vulgar eye.” Repetition makes
profane that which was once privileged. In many ways, Boorstin cynically
retreads Walter Benjamin’s history of mechanical reproductions of art. Benjamin
uses the example of photography to illustrate the erasure of an essence. When the
speed of the camera no longer required extensive exposures, it captured its
subjects without sufficient time to let their “auras” appear on film.

Reformulated with code, the velocity of these “reprints” intensifies
dramatically. Elizabeth Eisenstein relates what might be one of the most prescient
comments about the cultural change wrought by digital scripts. She writes about
the intellectual boon instigated by the printing press’s duplications of
“mathematical constructions, figures and numbers.” The reprinting of code
“transcended old limits imposed by time and space” because it “presented
identical data in identical form to men who were otherwise divided by cultural
and geographical frontiers.” This printed exchange of mathematics sets up the revolutions of digital media’s supercharged code whose universality would again dwarf the benchmarks for communicating across time and space.

Speed and standardization continue to spur much of the theoretical activity surrounding digital media, and understandably so. Cryptographic procedures execute so fast they transform sensory data into signal and then back again in pathways invisible to the human eye. The imperceptibility causes Stiegler to wonder if “technocentrism” is beginning to eclipse anthropocentrism; he implies that digital media is becoming society’s protagonist. The sense of unchecked propagation also troubles Jean Baudrillard who sees the degradation of material exchanges as the inevitable outcome of “the stabilized form of the code.” Code for Baudrillard is modern society’s “true generating formula, that which englobes all the others;” it is the inescapable form “of binarity, of digitality.”

Vinyl purists and record collectors explain the deficiency of sense perception based in “binarity” or “digitality.” They insist on an audible loss when a song’s analog wave is broken into compressed samples of data. Notes become tinny, as if encased in a machine that refuses to open. This abridgment in the sound quality of MP3s is an unlikely but apt analogy of Heidegger’s critique of the regulatory drive of modern technology. Writing long before the arrival of digital media, he warns that “the essence of modern technology lies in enframing.”
Heidegger describes enframing as a “setting upon” of human beings, which compels them to relate to the world primarily through activities of accountancy and calculation—dividing, classifying, coding, and filing until everything protean is stable. Under such a logic, things in the world become not merely objects, but resources, “ordered to stand by, to be immediately on hand, indeed to stand there just so that [they] may be on call for a further ordering.” Like a library of digital music, Heidegger’s enframing renders things to the count so that they might be more easily arranged and consumed.

Transcoding only expands the clipping involved in standardizing material. Yvonne Spielmann actually sees a freedom in this conversion to signal. She welcomes video art as a medium completely devoid of materiality. Code and signal are unconfined in their containment, replicating from screen to screen, free from the boundaries of a final state of inscription. Unlike the text of a book or even the consciousness of a human body, digital signal roams weightless and abstracted. Nevertheless, as Heidegger would remind us, that signal is always already truncated, processed, and accounted for.

In a recent essay, Giorgio Agamben knits these theoretical strands together, combining Boorstin’s “duplication impulse” and Heidegger’s enframing into a critique of the very hybridity that Haraway celebrates and Spielmann finds liberatory in its disturbance of representation. Reacting to trends surrounding
the smartphone, he returns to Michel Foucault’s definition of an apparatus as a device organizing “strategies of relations of force” which promote “certain types of knowledge.” The apparatus for both Foucault and Agamben is the site in which human activities struggle with an array of norms and controls. Somewhat like enframing, these actions ultimately submit to protocol. What emerges, according to Agamben, is “a massive partitioning of being into two great groups or classes: on one side living beings (or substances) and on the other, apparatuses in which beings are incessantly captured.” Narcissus’s pool is vivid again—an inner-face which, by reproducing and distorting our own subjectivity, alienates and weakens us. This is clear in Agamben’s version of technological practices, which resemble a “hand to hand combat” with our doppelgängers. Ironically, this battle—which requires deeper engagement of the apparatus—only fractures us, and produces more “subjects.” Digital technology brings the apparatus’s “dissemination” of subjectivity to a kind of terminal velocity. The creatures continue to clone themselves, exponentially endangering the integrity of our authentic bodies. The little materiality that remains of the human imagination continues to dissipate along with any possibility of confronting other agencies besides our own twisted copies.

Scattered agency plays into often repeated claims of the decreased attention spans of digital natives. Even Stiegler, as helpful as he is in drawing
attention to the newfangled “storage time” of digital technology, fails to articulate
an agency more developed than an enabled spectatorship. His prediction for the
future of camera practices envisions an operator who is able to “navigate through
the flow of images in a nonlinear fashion toward ever finer and more iterative
elements, in the same way that we’ve been able to in books ever since there have
been tables of contents and indexes.” His hypothetical camera can classify shots,
lighting situations, and objects, much like an expanded version of facial
recognition software. The future camera’s most remarkable achievement for
Stiegler, therefore, is allowing a film to be read as a book. The camera operator
takes the seat of the spectator, empowered by a linked index and new search
commands.

Stiegler’s super-reading camera brings to mind similar projects that try to
grant more agency to users by harnessing the calculative functions of digital
media. Often, however, these endeavors prefer the interactivity in cataloging
images to the interactivity in making images. Lev Manovich’s “database art” and
“cultural analytics” are good examples. Manovich hopes to scan millions of
images and “tens of thousands of movies” to enable users to data-mine and map
quantifiable trends using optical factors like brightness levels and contrast. The
project capitalizes on speed and code to fashion usability within massive
information stores. It aims to stream interactive visualizations of “real-time
cultural flows around the world,” letting operators track economic developments or patterns in YouTube video uploads. Katherine Hayles envisions similar technologies granting inundated readers the power to run analytics across vast collections of texts so that they can “machine read.” Surely both efforts will benefit scholars and industry analysts. As Edward Tufte has shown, data, in the right hands, can be arranged into stunning infographics; and Mark Danielewski (Hayles’ favorite example) offers countless surprises in the distribution of information to readers curious enough to hunt for the patterns in his novels. Nevertheless, by being focused on the roles of spectator and readers of sprawling sets of “image objects”—no matter how expanded those roles might be—practices of machine looking and machine reading only contribute to the growing malaise about the diminished activity of the human being, who, with a finger tap, issues a command to the machine and watches it go.

Enclosure 3: Lost Techne

Enabling people to navigate the seemingly overwhelming flows of data is a critical goal for visual media studies. Nevertheless, the focus on creating super-users with apparatuses only reinforces the notion of deficiency or erasure in human ability. Moreover, it encourages a movement away from practices of making. It favors, instead, an activity that is more amenable to the humanistic tradition: the
theoretical analysis of images. Textual or artifact-based analysis is still the dominant method of approaching optical media in the humanities. Education, research, and scholarship still prefer to leave latent the practice of composing with images in favor of image analysis.

To name this third enclosure is not to deny the value of close image analysis. On the contrary, I agree with Manuel Castells who argues that images—more than any other form of media—create frameworks of power whose emotional resonances affect the manner in which we situate ourselves socially and politically. Not only do images have power, but, as W.J.T. Mitchell puts it, we also must attend to the ways in which that power is qualified.

However, we need to do more than critically “read” images. Mitchell’s method, for instance, demonstrates some of the limitations of artifact analysis. For one, focusing on images as artifacts continues to keep the focus away from intra-actions between user, apparatus, and light. Image analysis devoid of practice constructs another uncanny inner-face; only this time instead of forming between operator/apparatus, it takes hold between observer/image. Mitchell suggests as much when he admits his goal “is not just to attribute to [images] life and power and desire, but also to raise the question of what it is they lack.” With this combination of life and lack, again an uncanny doubles forms, now in the artifact of camera practice, the image itself. Mitchell calls the double there a
“biocybernetic” clone. Like Haraway’s cyborg, these clones in our images are neither entirely flesh nor entirely technological. In Mitchell they are much more explicitly linked with the uncanny valley, what he calls a “cloning terror.” In the face of this dread, Mitchell challenges us to be proactive and, quoting from Nietzsche, to “sound out our idols,” to call forward our uncanny clones. But in a move indicative of the devaluation of media practice in the humanities, Mitchell advises that we sound out images with “the hammer, or ‘tuning fork,’ of critical language.” Why not, we might ask, sound out our image idols by striking them against those of our own making?

There is a reluctance to speak about the degree to which imagemaking practices are knowledge-making practices. Comparative media programs, digital humanities, and even multimodal approaches in rhetorics and composition (like those of Geoffrey Sirc and Anne Wysocki), have all been recent examples of efforts to include imagemaking in theory, research, and teaching. For the most part, though, the image as art, and by that I mean specific investment in the techne of its making—its materials, techniques, and instrumentality—is left to fine arts programs and vocational schools. Outside of these venues, there is seldom a strong commitment to exploring or qualifying images through techne.

The term techne emphasizes the use of an apparatus. Plato gives context to this kind of use when he discusses flute playing. He claims that there are three
arts: one that uses, one that makes, and one that imitates. His disapproval of the third, the painterly art of representation, is well known. He suggests, however, that the first two actually possess knowledge of a thing. A person who uses a flute would be able to say if a flute plays well or produces a bad sound, just as the maker of the flute might be able to fix it. Use, therefore, brings forward a knowledge in technique, craft, materials, and instrumentality. Plato’s separation of the visual arts is problematic, not to mention his aesthetics of pleasure, but he opens the possibility of meaning in performance, or knowledge through an activity of making.

The knowledge Plato ascribes to techne is modified by Aristotle in the Nicomachean Ethics. Aristotle, as he is wont to do, systematizes three modes or activities of human beings, each linked to a different type of knowledge: theoria (theoretical study) aligned with sophia, or wisdom; poiesis (a poetics of making) with techne; and praxis (procedural practice) with phronesis, a kind of prudential wisdom. Ideally, one would want to pursue each mode of knowledge. Today, however, the modern educational system has largely isolated poiesis and techne from its pursuit of core competencies. The consequences of that exclusion are now being felt as emerging digital media practices are challenging educators to reassess how knowledge is learned and applied.
One theory for the exclusion of techne comes from Heidegger. Although he frequently refers to techne and poiesis being unified in antiquity, he believes they were rent asunder in the transition from Greek to Roman culture. A fluid Greek relationship with truth—as the revealing and concealing of aletheia—gives way to the static Roman definition of veritas, an indisputable empirical knowledge that holds as true that which is absolute and unchanging. Whether or not one agrees with Heidegger’s reasons, the effects of techne’s division from theory and the arts can easily be observed in the modern education system. To take an example from film: usually a student interested in pursuing an advanced degree in “moving pictures” will have to choose a film theory program, a visual arts degree, or a technical film school. Other examples abound of techne’s exclusion. One needs only think of the containment of “craft” in vocational schools or the unwillingness Elkins finds in many fine arts programs to discuss technique.

With techne confined to science or vocational education, the humanities can pursue visual media with greater freedom from the uses of techne. The downside is that excluding techne enfeebles the contribution of praxis to theory. In many ways this is the old lament of Marx, who in his Theses on Feuerbach warned against the neglect of praxis in favor of theoria. Commodification, Marx believed, replaces relationships when praxis wanes. Readers of Marx, like Guy Debord and Baudrillard, associate this commodification with the image,
objectified by spectators and removed from practice. Images as artifacts and commodities rise to new status, albeit a superficial one. They have been forgotten as mediations of human experience.

Others like Barbara Bolt, try to reclaim techne through reinvesting in imagemaking practices. As an artist and academic herself, Bolt is dedicated to the “two-way action or mutual reflection between practice and theory.” Implicit in that commitment is an involvement with the techne of “materials, methods, tools and ideas in practice.” Still, Bolt recognizes that as much as this techne might facilitate meaning-making in the fine arts, techne as technology can lead to Heidegger’s enframing if it serves as a means of mastery, a way to regulate being, or depart from aletheia, fixing things in the objectified realm of veritas. Here the mediation of composition disguises itself as Truth.

Bolt uses Heidegger’s discussion of handiness to better explain the dilemma. A techne of mastery—like Manovich’s analytics—would harness visualization techniques to make knowledge “present-to-hand,” quantifiable, and prepared for the standing reserve. If instead we use an apparatus instinctively, dissolve techne in its use, then technology according to Heidegger becomes “ready-to-hand,” more connected to relationships of being. Bolt notices, though, that the ready-to-hand (the use of a tool to accomplish a task) quickly slides into enframing. She suggests, therefore, that art’s techne might be best thought of as
an “un-readiness-to-hand,” a state similar to the one Heidegger describes with a broken hammer, when its use is brought to presence. The difference would be that instead of producing an object of knowledge, a techne of unreadiness would want to proliferate the rediscovery implicit in brokenness.\textsuperscript{80}

Because Bolt speaks as a painter, the interplay of her imagemaking practices springs from the meeting of the sun, her environment, and her eyes. If a similar artistic techne is possible with camera media, then we must turn to the device and question how its enclosures might be broken so that it offers a view onto new light.

\textbf{A Crack in the Black Box}

If a fracture is to come to the digital camera, it must penetrate the “black box,” the idea of the camera as an inscrutable system whose only observable variables are its input and output. A crack must break the looping inner-face of the FotoMan—its doubles, its erasures, its hidden techne. However, the black box will never be infiltrated by engineers, hackers, or programmers. Enclosures will not be withdrawn by focusing on the camera’s social constructions or its relationship to human ontology.\textsuperscript{81} There is, after all, a certain degree of absurdity in the dream of fully opening the apparatus. At some point, we must agree with John Kallinikos that different technologies offer different levels of “manipulability”: 
shooting an 8 mm film and taking video with an iPhone construct different practices and techniques with the image. So while there is value to comparing the features of “boxes” and enumerating their differences, the challenge, as Kallinikos puts it, is to discover the “ways by which a technology invites people to frame a delimited domain of tasks or activities.” The statement returns to Foucault’s definition of an apparatus as “strategies of relations of force,” and repackages it as an invitation. The question is no longer: What is the offer of the FotoMan? It is, instead: What will we do with the offer of the FotoMan?

My proposal is that we respond as artist-observers. I take the term from Jonathan Crary, who, like Heidegger, recognizes modern technology’s drive to render phenomena to the count. He finds science historically committed to standardizing vision into magnitudes, which conform to the language of exchange. However, during Crary’s argument, the figure of the “artist-observer” appears as a momentary diversion. It comes in the form of nineteenth-century landscape painter Joseph Mallord William Turner. In Turner’s work, Crary finds “a direct confrontation with the sun.” It is so overwhelming that the paintings obliterate the structures and regulations normally imposed by optical technology. The earliest cameras, Crary argues, were Cartesian instruments invested in securing “a defense against the madness and unreason of dazzlement.” In contrast, Turner’s sun-blasted canvases, beckon down a chaotic, swirling array of
the visible spectrum. They welcome an “engulfing illumination,” a contingent exteriorty. Turner summons a nearly uncontrollable interactivity from light. Such a compositional practice is antithetical to the archival spectatorship Stiegler finds in digital image objects or Manovich in cultural analytics or Hayles in machine reading or Agamben in the smartphone’s dissemination. Turner’s images evoke a world teeming with materiality and new agency. This comes to a crescendo in Turner’s painting *Light & Colour (Goethe’s Theory): Morning After the Deluge*. A fragile outline of Noah hovers in a golden orb, with half-materialized figures of a coming community arching up from a single streak of blackness below—a world taking form in the light of an eye. In reviewing the painting, Crary declares that “the sun that had dominated so many of Turner’s previous images now becomes a fusion of eye and sun.” Although Turner’s images of these other agencies and materialities undeniably is grounded in his own human body, it is not a narcissistic cloning or an uncanny erasure; these other “things” in his vision are not estranged doubles or alien others; they are interactive and consubstantial—sun and eye, people and pupil.

Even though Crary emphasizes that the practices of the artist-observer contest the regulatory drive of empirical vision, they also share with the sciences a view *through* the apparatus onto other materialities. Both the sciences and arts welcome what Sara Ahmed terms an “orientation to matter”—an openness to the
“proximity” of other beings and things. Ahmed’s orientation participates, for one, in feminism’s history of recognizing nonhuman bodies. This “new materialism” or “agential realism,” draws from the work of Gilles Deleuze, Félix Guattari, Gaston Bachelard, Bruno Latour, and Haraway. If we apply Ahmed’s orientation to visual practices, the human body’s interchange with light opens new avenues for interactivity. Light itself becomes un-ready-at-hand, and we can understand it outside of a subject-object relationship. Michel Serres and Latour define this kind of being as a “quasi-object, quasi-subject.” As a quasi-object, light is acted upon although never completely determined by another agent. As a quasi-subject, it assumes an agency although it never becomes the sole orchestrator of activity. Light thwarts the dualism and works as a collaborative agent in the production of visual media.

Haraway describes a similar interplay in her description of a “material-semiotic actor.” Rather than seeing nonhuman bodies as the “‘object’ of knowledge” or a “passive, inert thing,” they become actors that make “boundaries materialize.” For an example of light’s connection to these boundaries, one need look no further than a desk. On surfaces like it, architectural designers Mark Major, Jonathan Speirs and Anthony Tischhauser find all the “essential visual information about the very nature of materiality.” Light reveals and conceals the boundaries of surface, “the very edge of matter” and
its “interface with space.”

Close the angle of a desk lamp, pull its shade nearer the surface of the workspace, and suddenly a history of scratches and nicks appears. Or lower the angle of the look; leave the lamp angled above and crouch down low, the bridge of your nose almost bumping the table, and a new terrain, a different “skin,” sweeps into view.

This tripartite relationship among light, other bodies and observers is not based in dominance or mastery. As Bolt explains, it should not be understood as the “shedding light on” something, a phrase that encourages the fixing of things as objects. Instead Bolt proposes “shedding light for” something. Shedding light for things recognizes the limitations of our vision and its reliance on other material bodies. Bolt associates its practice with “methexis”—a Platonic word signifying the participation of specific members in a unified form, which Bolt associates with indigenous Australian societies who use participatory performances to “enlighten” their relationships with the land.

Her personal methexis—like Turner’s—comes from painting landscapes. In the Australian desert she comes across an interactivity beyond the boundaries of her vision and her canvas: the sun has left marks on her skin. In a band of “freckles” and “suspicious sunspots,” she recognizes the agency of light. Her skin, the land, and light’s UV rays, distinguish themselves while at the same time joining together in the practice of painting.
This is the invitation of the FotoMan: to discover through the camera the boundaries of other bodies and agents. It means picking up the camera as a co-involved mediator—an apparatus, as Karen Barad explains, “productive of, and part of” its own “material configurations or reconfigurations of the world.” It is an invitation to unearth an “intra-activity” which includes human beings, nonhuman bodies, and the camera itself. Barad explains this as the “constitutive nature of practices.” Each agent, including the apparatus, is brought into being through the other.

It is worth noting that the FotoMan and digital cameras are not the anointed gatekeeper of this “intra-activity.” As Turner and Bolt remind us, artist-observers have been exploring the agency of light throughout the history of visual practices. No matter if it is an analog device (a 35 mm camera), analogico-digital (a camera phone) or even fully digital (the virtual cam of a video game), any camera invites us to extend into the activity of light, and participate more in its mediating of our perception. The FotoMan and its descendants—with their speed and economy and ubiquity in daily life—have only made this invitation all the more urgent and essential.

Likewise, images are not inconsequential. Perhaps it is helpful to understand them as being fashioned through the camera’s trope of light in time. Cameras twist to the surface the boundaries of an interactivity that we perceive
but do not see. In this way, images make light’s interplay discursive as long as they stay connected to practice and are allowed to remain broken artifacts of mediation. If limited to human thinking or an inner-face with the apparatus, they will become unproductively fixed. They will hide their mediations. They will forget their testimony of multiple exchanges, their history of being coaxed and propositioned and imperfectly recorded by the camera.

Photographs by Abelardo Morell demonstrate these deceptive negotiations among operator, camera, light, and landscape. By blocking the windows of various rooms and leaving a pinhole aperture, Morell returns the camera to its etymological room and fabricates a *camera obscura*. A view of the outside world projects against the surface of a wall. Exterior and interior milieus do not transcribe each other; they are entangled. A Florentine olive tree fills one side of the room, houseplants twist into a garden, tables collide with grass, and a picture frame struggles to hold the bend of a branch against vivid swatches of red paint. Boundaries come to the surface only to show that they are overwritten by others. Agents and objects are overlain in a series of interfaces blown-up past their usual enclosures. The sign-making of the apparatus takes place.

Much of Morell’s work relies on what might be called the “trick” of the camera. His images show that surfaces shed a plurality of lights. Projected rays are confused with the reflected light of actual objects in the room. It all promotes
a kind of virtuality. Major, Speirs, and Tischhauser again recall the illusions of surface in the Narcissus myth. Instead of declaring that this “trick” is an uncanny amputation, they suggest we recognize the illusion as a fundamental property of visual communication. The relationship between the human mind and visible spectrum of energy is rife with metamorphoses. Certainly, we would assert that some objects are physically present in the room and others are not. More interesting responses to this “trick” would challenge the informational quality of the light in the room (How is the “object” of the end table, transformed in light?), or would examine the channel of light between objects and observers (As an observer, what reflections have I grown accustomed to?), or would explore the ways in which Morell is composing and performing along with them (As an operator, how might I intervene?).

Pushed to their limits, these questions demand an investigation of virtuality’s boundaries and the ethics of the trick itself. I take up both issues in later chapters (the former through navigation in video games and the latter through a pedagogy of “cheating”). For now, the value of tricks can be clarified by a glance back at the stereoscope. An apparatus of the mid-nineteenth century, it achieved a rudimentary 3D illusion by presenting the right eye and the left eye with similar 2D images. If the sight lines were controlled effectively, a foreground image would seem to separate and distance itself from its background. The device
enjoyed a short run of popularity in wealthy Victorian homes before the early cinema captured the public’s imagination. Unlike the ticket-holder at a modern 3D feature, Crary relates that the stereoscope’s observers would be conscious of the contraption’s limitations; they would assume a constitutive role with its mirrors and planes and perform the “trick” with the apparatus. The image changed according to the observer’s embodied negotiation with technology; there was no authorized, objective stance. The viewer would have to work with the device to cheat the image into existence.\textsuperscript{100}

The stereograph serves as an analogy for the embodied tricks of vision. Our eyes are tireless performers, constantly focusing for depth, compensating for blind spots, and tracking movement so that the brain might construct a view of the world. Haraway uses the language of discourse and accountability to explain the apparatus’s value in modeling this physiological activity and transcribing it to the surface: “it is in these visualization technologies in which we are embedded that we will find metaphors and means for understanding and intervening in the patterns of objectification in the world—that is, the patterns of reality for which we must be accountable.”\textsuperscript{101} The metaphors of our making, which we trick through cameras, are themselves snatched from the body’s ongoing negotiations with light. Herein we find reference back to a doubling, back to the uncanny, back to the erasure of a transcription. Rather than leading to abstractions from
the real, these camera practices are, in fact, willful attempts to engage the concealed construction of perception. In daily life we move about largely unaware of the play of vision; yet as Haraway reminds us, this does not free us from taking responsibility. By cheating it to a surface—transcribing, personifying, and making it un-ready-at-hand—we confront its memories of entanglements and become conscientious of the relationality from which the image was captured.

Having started with the FotoMan, we then continue with the camera in hand, its uncanny inner-face and binary code no longer threatening. Its vision is comfortably distinct from our own, only momentarily wed when the FotoMan is held up to our eyes, pressed there like a Venetian mask. It gives a lopsided look onto the world—turned and twisted, revealing and concealing—but a view nonetheless. It shows boundaries and surfaces in a dance that has already begun. We join with the FotoMan, turning and twisting through the crowded floor, winking at other bodies as we capture their light.
NOTES

1 The first fully digital consumer-grade camera was the 1990 DYCAM Model 1. As an Apple

2 Some reviewers complained that the FotoMan unexpectedly cropped shots, severing subjects’ heads or arms. The quirk was due to an offset angle between viewfinder and aperture. See John Walkenbach, “Logitech’s Fotoman Comes to the Rescue of PC: Using Photo Buffs,” InfoWorld, January 6, 1992, 75.


4 In less than a decade, the two popular consumer markets would largely overlap and graft themselves onto telecommunications. The importance of the snow white color in the computer market of the 1980s and 1990s is explained in Paul Kunkel and Rick English, AppleDesign: The Work of the Apple Industrial Design Group (New York: Graphis, 1997).


9 Both Elkins and Stafford (student and teacher) are trained as art historians. See James Elkins, Visual Practices Across the University (Wilhelm Fink Verlag, 2007); see also Barbara Maria Stafford, Artful Science: Enlightenment, Entertainment, and the Eclipse of Visual Education (Cambridge: MIT Press, 1994).

10 “Two economies” references (although does not endorse) C.P. Snow’s infamously lecture on the “Two Cultures” of science and the humanities. A critique of his demand for “scientific literacy” can be found in James Elkins, Six Stories from the End of Representation: Images in Painting, Photography, Astronomy, Microscopy, Particle Physics, and Quantum Mechanics, 1980-2000 (Stanford: Stanford University Press, 2008), 2–4.


15 It should be noted that this loop is not relegated to the visual plane in McLuhan’s work. Although sight is its primary driver, extensions and amputations are material, creating and closing off different physical interactions with the environment. Technology maintains a weight and a body, even though for McLuhan it is mainly our own human weight and body.


18 Ibid, 74.


24 An example of ostracism due to this kind of uncanny difference is recorded in Jean-Daniel Pollet’s film documenting the remaining members of a leprosy colony near Crete. See *L’ordre*, directed by Jean-Daniel Pollet (1973).


26 Friedrich Kittler, *Gramophone, Film, Typewriter* trans. by Geoffrey Winthrop-Young and Michael Wutz (Stanford: Stanford University Press, 1999), 22. McLuhan also envisions technology as an “extended nervous system” but sees it leading also to mental numbness. See *Understanding Media*, 32.


28 It is important to note that Haraway’s later work is committed to making room for other bodies within our own—material agents with which we interact discursively. I address this at the end of the chapter. See Donna Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” *Feminist Studies* 14, no. 3 (October 1, 1988): 575-599.


35 Stewart, *Framed*, 130.

36 Derrida, *Of Grammatology*, 10-18, 149.


53 Ibid., 325.

54 Ibid., 322.


56 Ibid., 29.


59 Ibid., 22–23.


62 Katherine Hayles, “How We Read: Close, Hyper, Machine” (Clemson University, April 14, 2011).


64 There is a fourth enclosure, collage and post-pedagogy, which I take up in the final chapter of this book.


67 Ibid., 320.


73 James Elkins, *Why Art Cannot Be Taught: A Handbook for Art Students* (Champaign: University of Illinois Press, 2001), 26. He claims the reluctance is due to a variety of reasons, one of them being technique’s demagogic role in Baroque academies.


76 For more of these “others” see Bolt’s anthology, *Practice as Research: Context, Method, Knowledge*, ed. Estelle Barrett and Barbara Bolt (London: I.B. Tauris, 2009).


78 Ibid., 60–61.

79 The discussion of handiness can be found in Division One of Martin Heidegger, *Being and Time* (1927; reprint, New York: Harper Perennial Modern Classics, 2008). The tension between ready-to-hand equipment and Heidegger’s thinking on enframing is in part due to the years separating
Being and Time and “The Question Concerning Technology” (1954). Bolt recognizes these intervening years as affecting Heidegger’s treatment of techne.

Ibid., 103. See also Bolt, Art, 67.

See Langdon Winner, “Upon Opening the Black Box and Finding It Empty: Social Constructivism and the Philosophy of Technology,” Science, Technology, & Human Values 18, no. 3 (July 1, 1993). Winner critiques social constructivists like Wiebe Bijker and Trevor Pinch, who reject determinism in favor of technological histories dedicated to documenting innovation arising from a network of influences. Although he praises the intention, Winner claims that constructivists rarely illustrate the conflicting meanings technology assumes for different social classes and cultural groups. Moreover, they often avoid interrogating the politics surrounding technology’s integration into society (or lack thereof). See also Wiebe Bijker, Thomas Parke Hughes, and T. J. Pinch, eds., The Social Construction of Technological Systems New Directions in the Sociology and History of Technology (Cambridge: MIT Press, 1987).


Ibid., 288-289.


It should be noted there that as an electromagnetic field, light is not matter, although it is quantum material.

Latour, We Have Never, 51; see also Michel Serres, Five Senses: A Philosophy of Mingled Bodies, trans. Peter Cowley and Margaret Sankey (London: Continuum, 2009).

Ibid., 591.

91 Ibid., 595. Emphasis Haraway’s.


93 Bolt, Art, 146.

94 Ibid., 130.


96 Ibid., 57.

97 Ibid., 175-176.

98 Major et. al, Made of Light, 82. They refer specifically to Caravaggio’s Narcissus. See figure above.

99 Here I am making use of Haraway’s notion of “intervention.” See below.

100 Crary, Techniques, 124-136.

CHAPTER 2

PHOTONIC RHETORICS
STAGING COMPOSITIONS WITH LIGHT

The previous chapter describes three enclosures inhibiting engagement with the camera’s mediation of perception. When we cast the camera as an uncanny prosthetic, when we focus too much on the differences of the analog and digital media, and when we continue to pursue image artifacts over camera practices, we narrow our view of visual composition. These enclosures, I argue, block us from recognizing the alterity of light in mediating our experience.

An awareness of these enclosures, however, creates the possibility of re-opening them. To do so—to open again the shutter of the camera—I invite into the room someone who is long-practiced in the influence and effects of light. Richard Kelley easily wears the mantle of the most accomplished lighting architects of the last century. His commissions include landmarks as famous as the Lincoln Center in New York City and the Christ the Redeemer statue in Rio de Janeiro. In the 1950s his “luminous ceiling” designs conferred a sense of twenty-four hour transparency to the Seagram Building and the IBM corporate offices.
The style, in which light seemed capable of illuminating any surface, would later become an aesthetic hallmark of our own information age.¹

Concurrent with this work, Kelly wrote and lectured about “three elemental kinds of light effect.” I would like to employ them now to begin drawing a rhetorics of light—modes through which light inescapably mediates how we compose our world, both to ourselves and to others. Kelly’s three types of light effect are “focal glow,” “ambient luminescence,” and the “play of brilliance.”² These effects—under various guises—have long been familiar to theater companies and cinematographers. Yet Kelly’s particular labeling and description of them deserves attention. They highlight, for one, how popular conceptions of light tend to rally around only one rhetorical mode of light, namely “focal glow.” This favored cast corresponds to the enclosures of the last chapter, spotlighting a human actor, and a logocentric conveyance of truth.

By putting this dominant cast on equal ground alongside its siblings, I do not intend to pit them against each other or strike a compromise. Instead, I aim to demonstrate ways in which they form a diverse ensemble. This nebulous network of agency is what Gilles Deleuze and Félix Guattari would call an “assemblage.” In such an ensemble (or assemblage), there is no single protagonist. To take their example (which they take from Freud): when a boy witnesses the beating of a horse, the main character is not the boy, the abuser, or the horse, but,
rather, “a list of active and passive affects.” The list includes the horse having “blinders...a bit and a bridle, being proud, having a big pee-pee maker, pulling heavy loads, being whipped, falling, making a din with its legs, biting, etc.”3 Even the street itself and the surrounding buildings become actors in this assemblage, swept together in a time that is both synchronous and indeterminate.

What follows, then, is a description of effects (Kelly’s three casts) to illustrate light’s “active and passive affects.” Again, these effects/affects of light are not the primary players of visual composition. They share the stage with apparatuses, operators and countless subjects and surfaces. Exploring them, moving beyond the darkened enclosures, leads to a more flexible understanding of how visual composition and perception are intra-actively mediated. It returns us to a stage on which light reveals forgotten players and exposes our visual repertoire to new movements and acts.

**Focal Glow: Light as Division**

It would not be entirely absurd to say that light has been typecast. It is routinely deployed in our idioms and myths as “focal glow”—a spotlight that divides the light from the darkness.

Kelly describes the effect as “the pool of light at your favorite reading chair. It is the shaft of sunshine that warms the end of the valley. It is candlelight
on the face, and a flashlight on the stair.”  To find a common example one need only look at the downlights or track lighting in residential homes. Downlights are usually recessed, installed in narrow encasements to cup light and produce a more distinctive, illuminated arc. Track lighting produces similar effects but with more mobility—a favorite fixture for museums wishing to draw attention to a piece of art. The focal glow they create is the light of distinction. It is the actor’s pool, framing the performer in sharp relief against the dark background of the stage.

Downlights were a favorite tool for Kelly; he installed them, for example, around the edge of Philip Johnson’s Glass House, creating small reservoirs of light on the grass perimeter. At night, the interior radiates an ambient glow, surrounded by these miniature spots. One might say the whole home is an exercise in focal glow. It could be likened to what Kelly calls “the campfire of all time.” It shines there, in a glen of New Canaan, Connecticut, like an alien craft that has just descended in the darkest of woods.

The central mechanism of focal glow is division and contrast. Johnson’s house is striking for this reason: the angles of its parapets, the mercilessly straight lines of its columns, the rectangles of its horizontal length, they all issue a challenge. The house refuses to conform to its surroundings. If it was set in the city—even when its design was more novel in 1949—it’s architecture would have failed to separate itself as boldly as it does in New Canaan. In the woods, it defies
its setting and declares itself present because it is not crooked like the tree limbs, because it is not softly textured like the grass, because it does not grow up but instead juts out.

The lighting of focal glow reinforces these architectural divisions. Kelly writes, “Focal glow draws attention, pulls together diverse parts, sells merchandise, separates the important from the unimportant, helps people see.” Focal glow declares that these pieces matter; these others do not. This is where you should look; over there, you should not. It is where you find value, where you find what you need, where you find what is true and good.

Roland Barthes refers to this logic as a “marking” of the “binary.” Its persuasive effects function by appealing to an authority, which signals that a given term is acceptable (marked) or waste (unmarked). The comment is prompted by Barthes’ reading of Ignatius of Loyola’s *Spiritual Exercises*—the founding text of the Jesuit order. Because the logic of the binary rests on the supposition that authority exists and has the credentials to direct towards the greater good, Barthes sees the deference to a godhead as unavoidable. His term for this divine mark is the “ancient noumen” or “the nod by which the Divinity says yes or no to what is set before it.” This is “the Divinity’s role...to mark one of the two terms of the binary.”
Intrinsic in this marking is a rational order, the signal of intelligent design and the advancement of meaning. Such a system, according to Barthes, “is the fundamental mechanism of every linguistic apparatus: a paradigm of two equal terms is given, one of the terms is marked against the other, which is not marked, and the meaning emerges, the message is uttered.” A transmission is secured. A rational, authorial intention takes hold. Focal glow produces a similar effect. The downlights around the perimeter of the glass house insinuate that lines in a composition, particular textures—in their contrast with their surroundings—are intended to carry meaning. Those trees above the house matter because they have been captured in the arc of Kelly’s focal glow. Those in the distance beyond the house, beyond the boundaries of light, are excluded from the order of the artistic project. In that sense, the focal glow urges meaning to vacate that darkened space, collecting it instead around Johnson’s rooms. The artistic “message” (says the contours of light) lies not there but here, in the light.

Focal glow’s effect of differentiation implies an origin story. Its visual associations and grammar are based on creation through authoritarian separation. Something is divided from nothing—house from woods, lit from unlit, day from night, order from chaos. The refrains are familiar from the book of Genesis, which opens, in Robert Alter’s translation, when all of existence “was nothing but welter and waste and darkness.” Everything was unmarked. It is then that God
issues one of his most famous proclamations, “Let there be light. And there was light. And God saw the light, that it was good, and God divided the light from the darkness. And God called the light Day, and the darkness He called Night.” If creation is to begin, if beings are to take form, then the abyss must be partitioned. The darkness must be opposed to differentiate a space unto which life might be arranged. It must be pierced, the whole divided into parts to establish a logic that allows figures to come into being, to distinguish their forms. Only then might they be named: Light/Darkness, Day/Night, Being/Nonbeing, Order/Waste. This is the first decision of creation—a composition from cutting. Light becomes both the original mark and the ancestor of all second terms.

The event of this first cut, which creates all proceeding cuts, is what the Egyptians referred to as the “First Occasion,” a primary split, with which all future decisions will reiterate. An incantation to the Egyptian sun-god Re, dating after the writing of Genesis, depicts a similar coming to order. He initiates a primordial partitioning in/of light: “Opening his two eyes, he illumined the Two Lands, he separated night from day. The gods came forth from his mouth and mankind from his eyes.” The occasion is recalled each morning when the sun rises in the East and imposes a new unit of time in the break from day to night. Once the order is established and the lines are drawn, the order can be repeated and subdivisions can be made, but the original order is never displaced or
superseded. The ancestral second term continues to both mark and regulate the legacy it propagates.

Pushed to its extreme, this cast of focal glow creates a salvific space, a messianic order which functions as a living, redeeming mark on creation. The decision, the cut, the event from which all things were composed becomes the idealized state—made manifest in the world—to which all things should return. The creator’s originary intentions thereby reach their fruition with the enfleshed return of the ancestral mark. This is the eternal word and divine light found in the Prologue to the Gospel of John. Its author reworks the first utterance in Genesis, using the same words that open the Greek translation of the Hebrew Scriptures. Creation is thus rebooted to assert Jesus’ credentials as the fully living Christ:

In the beginning was the Word [Logos], and the Word was with God, and the Word was God. He was in the beginning with God. All things came to be through him, and without him nothing came into being.

What came into being in him was life, and this life was the light of all people. The light shines in the darkness and the darkness did not overcome it.\(^\text{12}\)

Christ becomes for believers both a “Divine Light” and the “Light of the World,” illuminating the kingdom of heaven within the earthly lives of human beings.\(^\text{13}\)
All those who will be find eternal life—the gospel goes on to assert—will do so by recalling themselves to the order of that light. Unlike the other gospels, John, begins not with human origins but with a high Christology. The good news originates with God, is articulated in the Word, or *logos*, and then brings into being all of creation. This news, its meaning as the incarnate *logos*, remakes a community. Human beings are set against the expanse of darkness; though the *logos* they too participate in the installment of a divine artistic order. Christ is this divine mark—the original nod, or *noumen* itself, which walks the earth and will ultimately become the final mark on creation. The imagery is similar to the personification of Wisdom in the Hebrew Scriptures which enforced on earth adherence to Mosaic Law.\textsuperscript{14} Outside of the light of Christ or the law of Wisdom, lies welter and waste.

Together the figures of light, *logos*, and Wisdom in John’s Prologue demonstrate the effects of focal glow. They proclaim a logocentrism, declaring intentionality and meaning do not decay in creation. Light projects from a single source (a creator), boldly divides the darkness (into matter and non matter), and inscribes upon creation a master plan (the salvific mark). We might then follow this living but stable logos which organizes all being. Anyone reaching into its light will be installed with the proper order. The meaning will be legible and clear.
In this way, focal glow posits truth-values in a manner similar to the discursive dialectic method. Barthes describes it as a questioning between a master and a student, as in Plato’s dialogues. It is “a progressing in the discourse by a series of alternatives, the interlocutor being requested to mark one of the terms: it is the concession of the respondent, linked to the master by an amorous relationship, which removes the alternative from the impasse and permits preceding to the next alternative, thereby coming ever closer to the essence of the thing.” For it to work, an original creator must be able to mark, that mark must capture the meaning, and that meaning must be tenable by human beings. All that is not marked can be cast into the darkness. For this reason, Socrates in Plato’s *Phaedrus*, rejects a rhetoric capable of making the “just” “unjust” and entertaining a multiplicity of trivialities. Instead he seeks a dialectic concerned with pinpointing truth through clear contrasts.

Such strong contrasts, however, hold obvious problems. To maintain an order of division, purgation is required—the casting aside of alternatives until the “original” meaning is secure. Victor Vitanza has argued that this mode of dialectic reasoning is built on the “logic of difference by negation.” It leads to what he calls “species-genus analytics.” These are practices of grouping and labeling. They require dissection, the kind of activity executed under the pathologist’s lamp. Focal glow provides the clarity to distinguish nested
categories of difference. Vitanza recounts the procedure for properly identifying a specimen:

A *species* has meaning by virtue of its placement in a *genus*. This species is *in* this genus because it is not like, or is different from, those things that cannot be placed in this genus. Moreover, this species differs from all other species in this genus by virtue of a long list of *differentiae*. The logic of identification is the logic of negations: We can never say what some thing is, but can say what it is not.\(^{17}\)

All of these negations, which note class, type, and individual differences, assume that the perceptual field is well ordered and delivers an indisputable view. For instance, Kelly’s downlights, which circle Johnson’s glass house, inform visitors what is considered part of the installation and what is unclaimed woods. Once the general area of looking is identified, visitors can then observe differences between exterior moldings and interior design. Even further, the interior can be scrutinized according to its various rooms and substructures. The yield is a composition of differences. In brings “species-genus analytics” to bear on the Johannine light, Christians are separated from non-Christians. Types are classified—Presbyterian, Catholic, Eastern Orthodox, Mormon. In turn, those types (or species) are broken down to individual applications of living out the good news. As much as these categories are useful for communal identity, their
histories of persecution and segregation are well known and continue to inform local and global conflicts.

The logic of difference through negation is unavoidable. This project, for example, uses it simply by organizing itself around Kelly’s three effects of light. Moreover, I am sure that if I undergo surgery I will hope for a doctor well trained in “species-genus analytics.” In the end, rejecting dialectic entirely only participates in its logic. However, awareness of its predominance and effects could certainly use more attention. To be more specific regarding the topic of light, we might become more sensitive to how approaches to visual composition linger too long in focal glow, are drawn to its analytics of differentiation, and often through them (whether consciously or not) overlook the complex mediation of perception and reinforce the infallibility of visual information.

Part and parcel of this neglect is the centrality we award ourselves as the composers of our experience. Human beings become the focal point for focal glow, both as its authors and interpreters. Light as focal glow, in other words, uses species-genus analytics to organize a very rigid hierarchy, with human authors frequently awarded elite status. Just as the First Occasion is replayed with each sunrise, so is the hierarchy of creator and creation recast in the relationship of human beings to other genera and species. This can be read in the Hebrew Scriptures when the duties of naming are conferred to Adam after the primal
divisions have been made: Night/Day, Earth/Sky, Sea/Land, Animal/Man.

Readings of the Gospel of John do the same when *logos*, conflated with light, is interpreted as the Word, or the foundation of language for human beings.

A cosmology from Plato makes even more apparent the heritage between focal glow and human exceptionality. In the *Timaeus*, he directly connects a cerebral, divine light with human vision. The human head, he claims, is made round, "copying the revolving shape of the universe." Here the “correct” order of the cosmic plan is repeated—or used as a template—to shape the human mind.

For human beings, therefore, the mental capacity becomes “the most divine part of us and master of all our other parts.” Plato also describes an eternal fire that is bestowed upon the head, and it projects its light out through the eyes, enabling vision through the commingling of its own light and the similarly constituted "daylight." This is possible because the “pure fire which is within us”—the light of divine reason—flows through the blackened pupil which acts as a filtration system. Plato speculates that the shape of the eyes has been crafted with a small hole at the center “to enable them to keep out all the other, coarser stuff, and let that kind of fire pass through pure by itself.”

Importantly in Plato’s origin story, vision’s natural order is to purge. Sight is “the source of supreme benefit.” It is the sense that provides “ability to make correct calculations according to nature.” It can “stabilize the straying revolutions
within ourselves by imitating the completely unstraying revolutions” of the divine, of the eternal. Vision works as a calibration tool, like a carpenter’s level. Its adjustments help maintain the correct order, or the precise focal glow.

Vision, light, and perception are not mediated in this cosmology. They are calculated. The vision that is well calibrated occupies itself with activities of accountancy and time-telling. Those visual practices produce “right” answers and encourage “correct” ways of seeing the proper count. As a result, a clear cause-and-effect relationship develops between visual perception and truth. It is there in the dialogue with Timaeus, when Socrates claims “our ability to see the periods of day-and-night, of months and of years, of equinoxes and solstices, has led to the invention of number, and has given us the idea of time and opened the path to inquiry into the nature of the universe.” Vision’s ability to parcel materials into units and categories makes possible one’s knowledge of the divine order. Light becomes the basis for the empirical sciences and mathematics, but also as Plato later asserts, for philosophy itself. Sight is the great “gift from the gods,” defined thus as the rational search for the proper cosmic order, the correct calibration. It is worthwhile to note in Plato that the definition is built negatively—vision it is not emotional, it is not coarse, it is not received from objects. Rather, it is rational. It is divinely ordained. It is projected from an enfleshed subject. And as such, it is uniquely human.
Focal glow makes a similar argument: light is calibrated, it is authoritative, and it is intentioned, like the spotlight of the stage that calls to order an exceptional actor, a main performer. It sets the actor apart, silences the crowd, draws eyes away from the rest of the darkened stage. The spot declares that the monologue is what matters, the actor’s speech will bear the artistic mark, or the divine nod. The audience is made passive.

Katherine Weiss makes the argument that the spot acting in this way (as focal glow’s emblematic light) functions as a “prosthetic eye.” The term is commonly used in cinema studies, often applying to the camera and its direction of the audience’s gaze. Katherine Weiss, however, uses it to demonstrate Samuel Beckett’s estrangement of the visual rhetoric traditionally employed by theater companies. Becket, she writes, calls the authority of the spot into question. In *Play*, he personifies it, forcing his audience to confront their deference to its power. As the spot flits among the unnamed characters, Becket indicates in the stage directions that their speech is to be “provoked by a spotlight.” So important is the spot to this play, that Weiss imagines it as a “fourth player.” When one of the female characters screams, “Get off me! Get off me!” we are reminded that this authoritarian light is more conventionally male than female—a light that dissects and objectifies as it announces its designer’s control.
Beckett wrote the play thirty years after advancements in lighting technology had given birth to “the spotlight era.” Powerful arc lights—the same technology used in searchlights—had driven new techniques for highlighting the movements of a production’s main cast members. Given the correspondences these techniques in focal glow share with dialectic reasoning, it is not surprising that the 1930s spotlight era coincided with higher education’s first theatrical lighting course. The authoritative divisions in lighting were clear enough to be systematized and institutionalized. 22

The characters in Play wonder what all this spotlighting (and focal glowing) is getting after. One character suspects that the light is tormenting her because she has not yet spoken the truth, or spoken it yet in the way the light wants to hear. And what might that light want? the audience must ask itself. What is asking to be said?

When the spot goes black, the characters speak together for the first time. They are undivided in the darkness. “Yes, peace,” one character says. The authoritative ordering of focal glow is extinguished. The division and labeling has ended. Peace returns. 23
Ambient Luminescence: Light as Sameness

Darkness constitutes a different cast of light. This may seem contradictory, only if the contrast that keeps the terms apart is not dispelled. Consider a darkness that is not antithetical to the light but constituent of it. That means withdrawing from difference, distinction, and clarity and being more welcoming of dispersion.

As the light changes so does a conception of logos. In rhetorical theory, this shift comes in Luce Irigaray’s ideas of “sameness.” Vitanza advocates it as an alternative to the genus-species analytics. We have seen how the spotlight of focal glow projects a logic of masculine rationality. Irigaray’s work challenges this origin story by rewriting Plato’s cave metaphor as a darkened womb. She rewrites the story of prisoners escaping from a shadow puppet show as the flight of dialectic method from female hysteria. These prisoners, chained to each other and forced to become spectators in a primitive cinema, imagine themselves cut off from the order of divine composition. In the cave, they are hungry for any kind of spotlight or designer’s signal, which would make sense of the reiterating shadows. Irigaray believes the anxiety derives from an inability to mark the binary. She explains that the prisoner’s central problem is that “nothing can be named as ‘beings’ except those same things which all the same men see in the same way.” There was no authority, or hierarchy of composition, and things were being
improperly named “on the basis of the conversation between them.” No authority could be appealed to. Without the divine nod to divide the shadows appropriately, dialectic processes were interrupted. The order was lost. All this comes to pass in Plato’s cave because the light is inadequate. Order is restored with the emergence into the sun. Irigaray concludes that the injunction is against indistinction: “whichever way up you turn these premises, you always come back to sameness.” 24 The womblike cave fails to separate/distinguish/spotlight the two terms of the binary. For Plato this sameness is “hysteria,” a madness that confuses focal glow’s divisions, its projection of a domineering masculine order, its purgation of disorder and indecisiveness.

To reground logos in this hysterical darkness, Irigaray needs to tell a new origin story that does not reuse the cuts of day and night. Rather than a series of iterations of a First Occasion, Irigaray wants to make corporeal a relationality. Playing against the logic of Genesis, she notes, “the feminine is experienced as space, but often with connotations of the abyss and night (God being space and light?), while the masculine is experienced as time.” 25 A feminine sameness draws back from the progression of change, the march of time that builds with units and “congregation through segregation.” It disturbs the primacy of chronology by existing “before and after...the light of day.” 26 Yet, this space outside of time is not a negation: “The sameness is not abyss; it neither devours nor engulfs. It is an
availability so available that for one who lives for utility, for mastery...this assumption of availability—which proceeds any position that can be discerned—arouses anxiety and hence efforts to name and designate causes.” Her “incarnation” is predicated on darkness and togetherness, “which has been assimilated before any perception of difference.” 27 It is “maternal” in that it is a part of being long before the individuation of birth and yet continues after the child has left the womb. A uterine sameness persists.

The rhetoric of this “maternal-feminine” sameness is invoked in Kelly’s second cast of light, “ambient luminescence.” More commonly, it is referred to as indirect or diffuse light. An example can be found the dimness of a rainy morning when the rays of the sun are refracted by thick cloud cover. People tend to oversleep (or, at least, want to) because the grayness of these days fails to signal the cut of a new chronological unit. The sky does not declare that Wednesday has arrived. Night has not broken but, instead, has gradually dissolved. The “weight” of a new occasion is not so clearly transmitted. Kelly adds to this example “the uninterrupted light of a snowy morning in the open country...foglight at sea in a small boat...twilight haze on a wide river where shore and water and sky are indistinguishable.” 28 Ambiences blur horizons. Binaries drift. Day/Night becomes Day~~~Night. Land~~~Sea. Sky~~~Earth.
Photographers usually favor ambient luminescence because it does not paint with stark contrasts. When exposure levels are too disparate in a composition, two (often unfavorable) consequences result. The first is that strong shadows from focal glow tend to disguise details. They accent only the most prominent features—an effect that can often be unflattering in a traditional portrait or a commercial product shoot. Second, most cameras cannot compensate for an extreme range of values (very bright highlights and very dark shadows), such as when a picture is taken of a person standing in front of a window on a sunny day. The separation of light values is too disparate to balance. Either the brightly light area will be overexposed (blown out) or the underlit area will be underexposed (too dark). The human eye tends to accomplish this balancing-act better than most cameras, a biological advantage that unfortunately continues to ruin many a snapshot.

To help battle some of these harsh effects of focal glow, many early film studios built structures much like Johnson’s glass house. Without advanced electrical lighting equipment and before the development of more sensitive film emulsions, cinematographers often had to rely on the power of the sun. This created the problem of waiting for overcast weather to avoid undesirable contrasts. However, beginning around 1906, pebbled glass was used to build studios that prismatically broke up the sun’s rays. This diffusion produced a
sameness in light that revealed finer textures in costuming, subtler details in
expressions, and slighter gestures in performances. All this would have all been
lost had the film had a more differentiated range of exposures.

Although glass studios maximized the diffusion of the sun, Kelly includes
all outdoor performance spaces as examples of ambient luminescence.
Amphitheaters and open-air stages, he reminds us, cannot employ the logic of the
spotlight; they cannot turn the house lights down and hush an audience. They
cannot separate an actor from the rest of the cast with a simple turn of the arc-
light. This is not to claim that outdoor spaces are disadvantaged in the theatrical
arts. On the contrary, Kelly enumerates the advantages of ambient luminescence:
it “minimizes form and bulk. It minimizes the importance of all things and
people. It suggests the freedom of space and can suggest infinity. It is usually
reassuring. It quiets the nerves and is restful.”30 Within its equilibrium, there
arises possibility. Without the clear mark of where or to whom the specter should
look, the boundaries of center stage begin to bleed.

Under skies of habitual diffusion, England’s outdoor venues are a
paradigm of ambient luminesce. On the Shakespearean stage, for example,
groundling, hero, and bit player were lit alike. Robert Graves finds that “the lack
of strong contrasts in brightness mean that the audience’s attention could not be
directed to specific actors or properties by means of conveniently placed pools of
light.” Instead, the actors had to call the audience’s attention with verbal flourishes, gestures, or entrances. Although these conventions might be deemed too dramatic for modern audiences, Graves points to one advantage: “By never employing our sort of illusion in their lighting, Elizabethan dramatists were free to direct the audience’s attention to some telling stage business or to catch their imaginations by the language.”

The ambience provoked adaptations of the voice and spoken word, but even modified how an actor’s agency was felt on stage. In the sameness of light, players could more easily influence when the “spot” of the spectator’s eye turned to them and when it left. A more interactive and relational rhetoric shaped the narratives that played before audiences in these open-air spaces.

Of course, with these advantages comes a loss of differentiae. Diffusion does not allow for the piercing gaze that can identify the most minuscule divisions. For that view, the focal glow of the arc light or a dentist’s ceiling light is needed. However, the breakdown of this clarity is what interests Irigaray. Without it, the definitive cuts of Platonic dialectic are impossible, and subjects and objects drift from their roles. On the Elizabethan stage without clear guidelines and optical queues, not only do supporting players suddenly draw the audience’s attention, but the audience itself is also more a performer in the construction of the play.
This interactivity should not be confused with a literal discursivity, at least not for Irigaray. For her, verbal and written structures are still too invested in the roles of sender and receiver. She declares that “we must go back to a prediscursive experience, recommence everything, all the categories by which we understand things, the world, subject object divisions, recommence everything.” Forget even the division between actor and audience. Only then will we be able to re-conceive of old divisions through the expanded agency and relationality of sameness. Only then, Irigaray claims, will we be able to “bring the maternal-feminine into language.” This means cultivating an awareness of the presence of other “actors,” in the broadest of senses, including our own involvement with them. We must attune to a light that does separate to distinguish—“a light that remains in obscurity.”

Irigaray’s language of obscurity and sameness, despite their visual metaphors, is difficult to define with concrete images. In fact, it leads Martin Jay to conclude that Irigaray exemplifies the “anti-ocular” bias in modern French theorists. Her materiality is discovered outside the visual plane—in the womb.

Cathryn Vasseleu disputes this charge and, in doing so, offers a reading that helps illustrate how Irigaray imbues visual perception and light with material life. While obscurity and darkness are important, Vasseleu calls attention to the “texture of light” in Irigaray, and how that texture is material, imagining it
connecting with other bodies. Sight forms a “touch of light on the eye.” It is corporeal and yet uncontainable. In this sense, light is “neither visible nor invisible, neither metaphoric nor metaphysical. It is both the language and the material of visual practices.” Light is both medium and material, and it transmits change through “the invisible interweaving of differences which form the fabric of the visible.” But the difference required for one body to touch another does not solidify into firm boundaries. The trap of subject/object divisions is avoided. Light pays heed to the physical separations of, say, spectator from player, but, as Vasseleu claims, it “stands as a challenge to the representation of sight as a sense which guarantees the subject of vision an independence, or sense in which the seer is distanced from an object.” With the touch and texture of light, seer and seen commingle. A network emerges of materialities and mediations across which images are not composed or observed but shared and felt.

Far from being merely an intuitive exchange, Vasseleu’s touch of light welcomes the empirical sciences into artistic practice and theoretical discussion. Her formulation of visible/invisible exchanges actually complements optical psychics. Both the logos of ambience and the quantum theories of light outline effects of the not-entirely-visible, or a medium dealing in the rhetorics of the unclear.
Models of the Big Bang, for example, issue challenges to how visual composition and bodies of information are understood. Although current theories of the event are meticulously wrought in units of time, broken down to a trillionth of a second, scientists admit that Zero Time, or the first moment of the “First Occasion,” remains entirely a mystery. A crude general description of the primordial Before would point to the existence of a state of sameness, an unfathomably dense singularity. This singularity comprised everything—gravity, electromagnetism (the genus of light), and largely any notion of space or time. The universe exploded from this singularity into an unfathomably hot multiplicity, expanding faster than the current physical laws would allow (rendering questions about what was “visible” during these early moments even more problematic). Estimates are that the first photon particles (quanta of light) spread throughout the universe a fraction of a second \((10^{-43} \text{ to } 10^{-35})\) after gravity separated from the other fundamental forces. Yet before even a second of time had elapsed, the rapid inflation ceased, and the radiant plasma of new matter began to cool. The photons cast off by these early fluctuations remain in the universe today, their wavelengths stretched alongside billions of years of growth. These same primitive photons are red-shifted, meaning they are charted on the less energetic end of the electromagnetic spectrum, settling deep within range of microwaves. They are the afterglow of the Big Bang, or the embers of what the
pioneering astronomers who first discovered them memorably described as the "primeval fireball." Diffuse and uniform, these particle embers comprise the background of the universe. Their energy is all but invisible except to the most powerful radio telescopes. To human eyes, the glow of the universe’s birth is blackness between stars; it is the darkness.

But the darkness is legible. For the first decade of the twenty-first century, a NASA spacecraft—the Wilkinson Microwave Anisotropy Probe, or WMAP—has been gathering traces of this energy expelled by the Big Bang, referred to as the cosmic microwave background. The data maps a thirteen-billion-year-old light pattern. Spherical with clumps of mostly blue and green color, representing cooler temperature fluctuations, the map of the nascent universe can easily be mistaken as a pixilated rendering of the earth. WMAP’s visualizations, in other words, are synecdoche on a cosmic scale. The blue-green quantum fluctuations are like the topographies of a schoolroom geography poster: oceans and continents are speckled around a flattened globe in a design that seems to have been rendered by the brush of George Seurat. It is difficult to believe that this layout was accidental. Colorizing one of the most popularly contested and misunderstood scientific theories so that it resembles the earth shrewdly associates the Big Bang with a visual figure the public is routinely asked to conserve, protect and “save.”
To reinforce these linkages, the texts that accompany WMAP’s images deploy the commonplaces of mythic narratives. The map’s color patterns are explained as “the seeds that grew to become the galaxies,” a metaphor used by numerous creation myths, like those that tell of a cosmic garden; or the Egyptian and Navajo stories of a Deity who masturbates the universe into light; or even those from Hawaii and Greece, whose celestial gods copulate in the heavens and spray their “seeds” across the cosmos.39 Perhaps even more cheekily, WMAP lifts rhythms from Genesis to answer a FAQ about the initial catalyst for the Big Bang. What started the Big Bang? “There was matter [morning] and there was antimatter [evening].” Slyly revising Yahweh’s first command, WMAP adds, “When they met, they annihilated each other and created light.”40 Rather than a creator separating the abyss, the darkness itself divides and showers the universe with light.

This is no slight on WMAP’s information design, nor is it an attempt to homogenize data collection with creation narratives. Rather, WMAP deserves credit for recognizing what astrophysicists sometimes neglect: the preoccupation human beings have with finding their own face in the universe. Carl Sagan, for one, realized the power of this appeal. In his famous 1974 multi-part documentary for PBS, he asserted “We’re made of star-stuff.”41 Literally, Sagan is referring to atoms, like carbon, in the human body. Since the early universe was
comprised primarily of helium and hydrogen, most other elements derive from lifecycles of stars, particularly their stunning deaths, when they supernova, explode and shower space with an array of atomic particles. Most theories point to this process as the most likely candidate for the germination of earth’s primitive crust. The inevitable conclusion is that all carbon-based beings are made of raw stellar material. Sagan, however, pushes this well-known cosmochemical fact further. He mines its imaginative potential and turns over new ground for psychology, epistemology, and phenomenology: “Some part of our being knows this is where we came from. We long to return. And we can. Because the cosmos is also within us.” The suggestion is nothing less than an interstellar eternal return—from (star) dust to (star) dust. It is a call, borne in the atomic ancestry of human beings, a lineage as inscrutable as it is compelling. Hidden in the body’s own darkened cosmic background, there is an invitation to a reunion. All are invited; one and the same. Come, our bodies beckon, our flesh and bone are host of a communion across the galaxy. We can return to it through the common touch of the photon.

Sagan ends with the most radical of his claims, one that separates his alpha and omega from the logocentric one: “We are a way for the cosmos to know itself.” He ironically projects his audience’s own epistemological anxiety into celestial bodies. They too are seeking answers to where they come from. As
Ptolemy gazed at the stars seeking a mathematic pattern for their seemingly erratic orbits around the earth (a look that would de-center the Earth from its privileged position in the universe), the stars in turn were gazing down at him, hoping to find their end, their own telos for billions of years of nuclear syntheses and cataclysmic deaths.

At its best, Sagan’s statement might be read as a multidisciplinary inroad, an attempt to cross scientific studies and humanistic theories, a way to think of the rhetoric of light on a extraterrestrial and more interactive stage. A less charitable reading could call it yet another personification: the universe has been made to serve an astronomer’s anthropocentric celebration of the human spirit. For the time being, it seems more valuable to tease out the implications of the former.

**Play of Brilliance: Light as Chance Assemblage**

To return to the conceit of the stage, let us assume for a moment that all bodies in the theater are irradiated with Vasseleu’s visible and invisible fabric of light. Let us also grant that this fabric is material, in that it touches vision, whether the players and spectators sense it or not. Furthermore, we have explored possibilities for conceiving of light as compositional, in that it bears information, modifies forms, and constitutes a body of its own. We must then acknowledge that light
itself is a player, with a presence and relativity all its own. Yet this player is not an “actor” in any of the traditional senses of the world. For one, light exists outside of space and time. It is both instantly present and absent. Since it has no mass and travels at the speed of light, the photon carries its own frame of reference, one that must not be compared to the observer’s own. Simply put, photons do not conform to chronology. When a young girl in Kansas gazes up at Sirius, the brightest star in our sky, the journey a photon makes from that point nine light years away to her retina is instantaneous. There is no before and after. Of course, if the photon could be tracked by earthly clocks, the journey would seem to last for 8.6 light years. But to the proper time of the photon, it would be more accurate to say that it exists in both places at once—Sirius and in the eye of the little girl. This phenomenon, related to what in physics is called nonlocality, prompts David Grandy to speculate that the experience of vision projects a view through time and space. In regards to sight, he says:

To be sure, we may back away from the experience [of vision] and posit various processes, all of which take time, whereby photons transfer their images to the eye or brain, but in the moment of experience, we see things at a distance without feeling that we are visually processing them. They are immediately available and we, visually, speaking, are widely present in the world.42
By “widely present,” Grandy is suggesting that in the touch of the photon against our stargazer’s eye, she participates in a different experience of spacetime, one in which entities are not separated by geographies or durations. They are instead connected corporeally in a dimension beyond the confines of the girl’s perception. To emphasize this point, Grandy refers to Maurice Merleau-Ponty, who is similarly important to Irigaray’s notion of sameness and Vasseleu’s description of the fabric of light. With Merleau-Ponty we see how these casts of difference and sameness might congregate the actors on stage without tactics of segregations or erasures of their individuality.

Merleau-Ponty’s work resonates in part because of his efforts to describe an act of seeing outside of the Cartesian tradition. That tradition is predicated on a subject-object relationship, where the world is taken up and processed in the black box of the observer’s rational mind. In his essay “Eye and Mind,” Merleau-Ponty counters this structure of perception with an enfleshed reflexivity. In looking, the body is connected to a network of other bodies and materialities, while never losing its own singularity. The perceiver can never completely escape reflexivity. As much as I recognize that I am a part of an assembly of actors, that “my body is a thing among things,” that “it is caught in the fabric of the world,” I cannot fully escape that subjective point-of-view. My looking “sees itself seeing; it
touches itself touching.” I can never escape my vision. It is forever mediated by photons.

This is the lesson of perception, what we find in the nature of the photon by looking at the casts of focal glow and ambient luminescence. On the one hand, light constructs us as a subject/object; on the other hand, the nature of perception forever differentiates us in a mobile assembly outside of our own frame of spacetime. “Vision alone teaches us,” Merleau-Ponty claims, “that beings that are different, ‘exterior,’ foreign to one another, are yet absolutely together, are ‘simultaneity.’” This is a “mystery,” he concludes, that “psychologists handle the way a child handles explosives.”

Although I do not pretend to handle the mystery any better, I am interested in the rhetorical questions it begs. With this view of perception, how do we compose with the camera? How do we relate to light? How are we to think of rhetorical acts with the photon?

For one, the photon calls into question Kenneth Burke’s definition of man as the “symbol-using animal.” For Burke, non-symbolic motion persists continually in the world in the pull of the tides, the rotation of the earth, the crackle of fire. The drama of the rhetorical situation is staged when humans inscribe this motion into language, or symbols, to be deployed and decoded. Debra Hawhee points out that many scholars are too quick to draw a division
between these terms. They portray Burke as a humanist, who finds symbol-use the only activity of note. Hawhee, however, sees Burke’s notion of language and motion not as a binary terms but as a pair in that they “overlap and intersect as often as they pull apart.”\textsuperscript{46} From this, she argues that language has a motion of its own. While her project is important to the field of written composition and linguistics, I wonder if the photon is not drawing us closer to the indistinct line between motion and discursivity, the very edge on which she sees Burke playing.

If we allow for the simultaneous possibility of individuation and ensemble motion in visual perception, there seems to enough ground to discuss the rhetoric of the photon. Its persuasive force would begin in pre-discursive sameness that Irigaray describes. This would move the center of the rhetorical scene outside of language and into the obscurity George Kennedy describes in his provocative essay “A Hoot in the Dark.” Rhetoric there is a “deep” and “universal” field that extends between all beings, animate and inanimate, plant, rock, and animal—“the energy of all physics as known from subatomic particles.” On this stage, “marking is, perhaps, a kind of metaphor, that is, something transferred to the condition of life from the inanimate world where there is also a kind of marking.”\textsuperscript{47} The marks might be found in the turning of a plant on the forest floor to reach the rays of the afternoon sun, or the coloration of insects as they search for a mate. These
compositions would be both non-verbal motion and symbolic action outside of the realm of language—exchanges that are “purposive though not purposive.”

Another way to think of the marking is as an excitation. Excitation better captures the non-linguistic discursivity of the photon—the mode in which it transmits its force, exchanges its energy, makes its mark. It is a commingled and embodied action. Technically speaking, excitation occurs when an electron absorbs the energy of a photon. The electron jumps to a higher, more active orbit. Eventually it relaxes back to its former state. In doing so it emits the same amount of energy it absorbed, not as waste, but, as another photon.

If a logos were to emerge from this particle activity, it would be one that is constantly in flux, transmitting, absorbing, entangling, and emitting. In her reading of Kennedy, Diane Davis claims that this kind of activity constitutes a touch beyond logos. Using Emanuel Levinas and Jacques Derrida, she emphasizes a responsiveness to other bodies. This notion of responsiveness to the Other cannot be understated, and I will return to it in a moment, but for now I would like to propose that this responsiveness does not necessarily go beyond logos. In Heraclitus’s descriptions of fire, we find a logos that sparks and flits to life, ever-present and ever-the-same, yet never fixed, never consistently the same. It is a force and a motion that relies on distinctions and separations, only to work from between them and crackle with life. The logos, or force, of his divine mark is “day
and night, winter and summer, war and peace, surfeit and hunger;” it “takes various shapes, just as fire, when it is mingled with spices, is named according to the savour of each.”

Like the activity in an Deleuzean assemblage, the movement of logos becomes symbolic only when it takes on the qualities of that which it passes through. It might be like the ray of sun, refracted and green through stain glass, visible in the dust wafting in the air above a pew. Or it is the shapes of a toddler’s glow-in-the-dark pajamas, when the phosphorescent miniature spaceships twirl through a house at night. Circumstance and chance bring these forms into our perception, and in that moment, in that looking, we too become composed though it—both physically as the photons touch our retina and subjectively, as we cast ourselves into the assemblage.

This is the light of Kelly’s third and final effect of light—the “play of brilliants.” It is a cast reliant on twinkling and chance, interruption and fluctuation, like the many lights one might see at “Times Square at night,” always changing, always moving. Other examples are “a cache of diamonds in an opened cave....night automobiles at a busy cloverleaf, a night city from the air.” Kelly continues with examples of car headlights casting shadows of trees in a bedroom. Even more simply: “it is a sparkling cabinet of fine glassware.”

Even though this light is remarkable and distinct like focal glow, it is also commingled and diffuse like ambient luminesce. It still necessitates the
entanglement of bodies, the motion of networks, the ensemble activity that draws attention inadvertently and suddenly to a particular member. Like photonic collisions with electrons, it works by excitation. According to Kelly, it “excites the optic nerves, and in turn stimulates the body and spirit, quickens the appetite, awakens curiosity, sharpens the wit.” Like meeting of photon and electron, it produces fleeting transformations. At the same time, this transformation is not a call to an eternal order, or a creator’s nod indicating that the essential message is to be found here or now. Quite the contrary, the play of brilliants can be “distracting or entertaining.” It might be absorbed or ignored; re-emitted or discarded. Either way, it will change, reshaping itself to be observed in another moment, in another form.

If the play of brilliants were to be captured in an edifice, it would not be in the focal glow of Johnson’s glass house or in the ambience of cinema’s early glass studios. Rather the play of brilliants might best be witnessed in a ruined greenhouse. Its windows would be missing and broken, jagged shards hanging in their frames. The panes would be stained with many seasons of weather patterns. And the plant life below would be nothing but a wild mess. Specimens would spill from their rows and trellises, creep over the floor and up architectural structures. Exotic species and local varieties would entwine with each other to reach the patterns of light sweeping daily through the space. New buds would constantly
emerge. Sprouts would twist into errant reflections. Visitors might find it at one moment incomprehensible and in the next moment beautiful.

A problem arises, though, when we want to think about practices in this space. It is an important one for education and general considerations of these photonic rhetorics. Amidst such a transformative assemblage, how is an individual supposed to begin composing? How might the camera and its operator open themselves to the light of this space? These questions revolve around light’s *tending*. By *tending*, I do not mean a reconstruction, but rather an intentional practice that is performed with care for the system of entities and activities, recognizing that the practitioner—inescapably—is part and parcel of that system.

Re-beginning with John’s Prologue provides a way to understand what this practice might entail. We have seen how the prologue is often read in terms of focal glow. Its famous line—that the light of the *Logos* has not been “overcome” by the darkness—bespeaks of the divisions and separations necessary for the clarity and permanency of a divine order. However, the Greek word that is so often translated as “overcome” also shares etymologies with the words “comprehend” and “apprehend.” Thinking of the lines in terms of an apprehension creates a dramatic shift in the reading of Eternal Light, from a clear assertion of that which cannot be refuted or conquered, to something that cannot be quite understood. It is a temporary seizure, in the sense that an odd idea seizes
its thinker, never fully coming into possession, and then fleeing as quickly as it appears. It is remembered only incompletely and brokenly. It excites and fades.

Logos conceived in this way correlates with Irigaray’s sameness, Heraclitus’ fire, Kennedy’s universal “purposive-though-not-purposive” force, or even more explicitly with Heidegger’s formulation of truth as a concealing/unconcealing—an indeterminacy that never fully comes to light. Deleuze, if we might add one more voice to our ensemble, uses the figure of a body without organs. The assemblage of the greenhouse is much greater than its actual pieces; its life, paradoxically is in the “inorganic” correspondences between organisms. This virtual body, present between and among the many entities, is the assemblage that is most fully alive. Whenever it takes a definitive form, that virtual life recedes from view.

Applying this to physics, Darby relates the virtual assemblage to the unstable properties of light, which as a photon is both wave and particle, but never both at the same moment. He explains, “We cannot, even in principle, recover light as an intermediate, separate (and therefore separating) entity between perceiver and perceived. That is, it cannot be snatched out of the context of the visual experience and held up for independent scrutiny.” Sameness, fire, shadows, a body without organs, a photon—these things cannot be possessed. They seize us.
This certainty about indeterminacy, only returns to the questions: how might we perform with and respond to such a logos? How might we use photonic rhetorics.

Derrida, by way of Levinas and Maurice Blanchot, advocates a responsibility. For Derrida this means the recognition that any response is not an autonomous cut but, instead, “a passive decision,” or an unconscious response, to a radical, material other. It is passive in that it does not try to impose a normative framework on the other, or subject that alterity to an oppositional relationship. Moreover, it unfolds in time, which renders the decision beyond mastery. For Derrida, this passivity is the essence of hospitality. Davis finds in Derrida’s responsibility a rhetorical position of exposure, one which responds, like Kennedy, to the force that is “enfleshed” in other organic life. Yet she still sees Kennedy as too anthropocentric, and defends a rhetoric “not first of all an essence or property in the speaker (a natural function of biology) but an underivable obligation to respond that issues from an irreducible relationality.” Passive response, thus, situates logos beyond the material touch of these alterities. Davis re-begins with rhetoric neither as “art or science but an undeliverable provocation, an imperative to respond.”

Other writers, particularly those who discuss the visual arts, like Merleau-Ponty, Bolt, and Crary, try to give to the artist or the composer the powers to
deliver as well as to respond.\textsuperscript{58} This implies a pre-discursive logos that might itself be temporarily seized by the artist and tended. For Crary these are the practices of the artist-observer. For Bolt it is the act of \textit{shedding light for} other entities instead of \textit{on} them. For Merleau-Ponty it is the painter who, yes, feels the imperative to respond to exposures but is able to feel that condition more profoundly in the act of responding itself. He writes:

There is that which reaches the eye head on, the frontal properties of the visible; but there is also that which reaches it from below—the profound postural latency whereby the body raises itself to see—and that which reaches vision from above like the phenomena of flight, of swimming, of movement, where it participates no longer in the heaviness of origins but in free accomplishment. Through vision, then, the painter touches both extremities. In the immemorial depth of the visible, something has moved, caught fire, which engulfs his body; everything he paints is in answer to this incitement... Vision is the meeting, as at a crossroads, of all the aspects of\textsuperscript{59}

In Merleau-Ponty’s version of inspiration, which opens itself to the sciences and visual arts, the psychological and the neurological enter the assemblage. The “imperative to respond” and the “undeliverable provocation” are, in fact, most felt the act of delivery. Here, the seizures of photonic rhetoric might be put into
practice. Memories new and old, humors, moods and fevers are projected into the radical alterities and indeterminate assemblages that come into view during artistic composition. In these “extremities” the sensibilities of the artist observer are more singularly plural, aware of their mediated view and, at the same time, stretching back to deliver forward a broken piece of that mediation in light.

Camera media are not discussed at length by any of the above theorists interested in a prediscursive, sizeable logos. In fact, Merleau-Ponty explicitly denies photographic media the capability of reaching into these assemblages of vision. By the photograph’s freezing of motion, access to what Deleuze would call the virtual realm is shut off. The aperture opens, and a multidimensional assemblage is warped onto a two-dimensional surface.

Admitting that we can never make explicit the assemblage of light, we can still use the camera to investigate our apprehensions of the assemblage. The camera can tend to the clarity of focal glow, the sameness of ambient luminesces, and the contingency of brilliants. As in Plato, Irigaray or Merleau-Ponty, each approach to light situates a mode of seeing and being in the world—a different way to conceive of our relationship to logos. Kelly contends that the most “beautiful” compositions are produced through “an interplay of all three kinds of light, though one is usually dominant.” Not only am I suggesting that cameras
are particularly given to studying these three casts of light, but they also offer a means of assessing perhaps which is more dominant in our lives.

I turn now to three emergent technologies of the camera, and the possibilities they offer in tending to the mediated compositions of the photon.

NOTES


2 Kelly’s elemental types were first articulate in lecture at an industry conference in 1952. For their first appearance in print, see Richard Kelly, “Lighting as an Integral Part of Architecture,” College Art Journal 12.1 (1952), 24-30.

3 This notion of assemblage is drawn from Gilles Deleuze and Félix Guattari, A Thousand Plateaus, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987) 257-8. There the role of agency and assemblage is neatly connected through the original French in which assemblage is written as agencement. For a discussion of the term’s translation see Charles Stivale, Gilles Deleuze: Key Concepts (Québec: McGill-Queen’s Press, 2005), 77.


5 Ibid.

6 For a collection of photographs of the home throughout the seasons and light levels, see Toshio Nakamura, ed., Glass House (New York: Monacelli Press, 2007).


19 Ibid., 47a–d.


23 Ibid., 160.


25 Ibid., 5.

27 Ibid., 98.


36 A theory of the universe’s rapid expansion in the first seconds of time was first elaborated by Alan H Guth, *The Inflationary Universe: The Quest for a New Theory of Cosmic Origins* (Cambridge, Mass: Perseus, 1997). For his conjectures about the inflationary cool-down, see 89-94.


44 Merleau-Ponty, “Eye and Mind,” 146.


48 Ibid., 10.


56 Davis, “Creaturely,” 89.

57 Ibid., 90.
58 See Chapter 1.

59 Maurice, Merleau-Ponty, “Eye and Mind,” 147.


Digitalization and miniaturization have rendered the snapshot camera relatively obsolete. Most cameras now come ‘prepackaged’ with mobile phones or tablet devices. The integrated technology has opened a number of secondary markets, the biggest being the downloadable ‘app.’ Popular software add-ons like Hipstamatic, Instagram, and Camera+ for the iPhone, enhance the functions of built-in camera phones. These newfangled apps have engendered a host of photographic practices, many of which have provoked debates concerning the photograph’s claim to objectivity.

Nowhere is this more obvious than on the front lines of photojournalism. Recently, professional photographers have used mobile phones and, more controversially, photo apps like the Hipstamatic to document scenes of war. As a style inseparable from its apparatus, these photo apps unsettle the camera’s journalistic credentials as a fact-based observer. In place of objectivism, they bring forward photonic rhetorics—the persuasive effects of light, the digital transformations of the camera, and the impossibility of bearing witness to those transformations. In short, they bring forward a machine
subjectivity, which highlights the mediation of perception while making it, paradoxically, more personalized.

**Machine Vision**

To understand how the Hipstamatic is stirring up controversy among photojournalists, it is helpful to recognize its threat to “mechanical objectivity.” For years the camera has been the standard-bearer for an ideology that maintains that machines, when unimpeded, yield direct evidence of the material world.

Importantly, this brand of objectivity has not always been the dominant approach. Lorraine Daston and Peter Galison describe the more interpretive method that preceded it. Atlas makers and scientific illustrators would often try to norm different samples into an averaged or characteristic “type.” With these interpretive practices, “the exercise of judgment in the selection of these ‘typical’ images” was thought to be “not only inevitable but laudable.”

By the nineteenth century, with advances in optical technology, a paradigm shift was underway. Photography established itself within a longer tradition of imaging technologies that allowed greater precision in visual representation. Like the camera obscura, which had centuries before made possible greater realism in scientific illustration, the photographic camera quickly asserted itself as an authoritative source of empirical observation. The automation it provided mitigated the influence of its operators. It established “mechanical or procedural safeguards” against the “temptation”
of overactive interpretation. As Daston and Galison put it, the still camera, even more than the camera obscura, could be trusted to “eliminate the mediating presence of the observer.” Inevitably, this approach resulted in a radical negation of perceptual subjectivity.

The great riddle that mechanical objectivity solved was devising a method of “accurately” representing reality without any guesswork about its characteristic type. The solution, according to Daston and Galison, involved collecting a representative sample—a “scatter of individual phenomena that would stake out the range of the normal.” We now associate this school of objective study, almost inseparably, with good empirical practice.

In the history of photography’s transition to cinema, one can witness the close association of the camera with this drive for representative samples. Late nineteenth-century pioneers, Étienne-Jules Marey and Eadweard Muybridge invented separate technologies for this very purpose. Both were scholars dedicated to fashioning a model of locomotion from a range of samples. Their photographic novelties would serve as the forerunners of motion pictures, but the apparatuses were originally conceived not to entertain but quite literally to picture motion.

Marey’s experiments in particular demonstrate his dedication to unlocking the mysteries of movement and his belief that photographic technology was the key to doing so. His invention of chronophotography captured multiple exposures on a single negative, gathering bursts of human movement—the trajectories of walking jumping,
fencing, running, wrestling. The technique evolved when Marey devised ways to mask the figure and isolate its movement. He attached illuminated rods and bulbs to his subject’s joints to demarcate the position and angle of the body. The substitution removed distracting details from the flow of movement: it hid muscle tone, facial features, clothing, etc. The data that the prints provided, with their representative samples, could then be mathematically processed into calculations for gait analysis. From these observations, one could determine, seemingly without interpretation, the common parameters of movement.

Marey’s early motion studies have been linked as the inspiration for strands of Taylorism and Russian machinism. Films such as the “biomechanics” of Sergei Eisenstein and the chisel and hammer experiments of Aleksej Gastev were dedicated to discovering the most efficient movements through machine observation. Siegfried Zielinski explains how early movement studies seemed to offer “an ideology-free method for increasing productivity and...for radically reforming individuals.” Their pioneers believed in the power of the camera to illuminate pathways to the most effective gait, the most profitable swing of the hammer, or the most graceful exit from the stage.

Marey’s practices were founded on clarity across discrete instances of phenomena, whether he was photographing birds or multiple positions of an illuminated stick in a darkened room. This is a tenet of mechanical objectivity. To collect a “scatter of individual phenomena,” the scientist must ensure that each of the variations is individual enough to properly demonstrate their difference from others in the set. Marey’s
chronophotography, therefore, was notable for its ability to capture multiple
instantiations of a single movement, divided only by fractions of a second, each fraction
rendered in sharp focus against its predecessors and successors. For instance, in one of
Marey’s experiments, a single long jumper appears as multiple athletes, some more
transparent (ghostlike) than others, but each presenting its own distinct boundaries. A
machine capable of processing visible phenomena in this kind of high definition is a boon
to the pursuit of mechanical objectivity. The “cult of individuating detail,” as Daston and
Galison call it, embraced the accuracy of the camera obscura, but it was the photograph
that guaranteed an almost “effortless accuracy.” Jonathan Crary agrees, noting that the
camera obscura engendered a Cartesian relationship with light, with the observer
detached, almost disembodied, in a controlled darkened setting, analyzing a well-defined
plane of light, as a cartographer might calibrate a map. But again, it is photography, and
the technologies that follow it, that Crary holds responsible for accelerating the desire to
translate sensory experience into quantifiable data.

Opposing Marey’s aesthetic and its attendant theories of visual objectivity was
Anton Giulio Bragaglia. As Italian Futurist of the early twentieth century, Bragaglia
developed a technique to resist the segmentation and quantifying drive of Marey’s
images. Both men shared the goal of expressing motion, only Bragaglia was much more
taken with the fluidity of an action. In Bragaglia’s “photodynamism,” the stroke of a
musician’s bow blurs into vapor over the strings of a cello. Bragaglia adamantly tried to
distinguish himself from his French predecessor: “I deny that I analyze action and I deny
that I make the equivalent of one hundred instantaneities.” Instead Bragaglia wanted a “synthesis of the action, which, because it is pure movement...is completely different from...stasis and completely different from an analytic scientific reconstruction.”¹¹ Mary Braun, who reviews the relationship between Marey and Bragaglia, finds more similarities between the two than they or their respective circles admitted (they both, after all, believed they were revealing something essential about human movement).¹² Still, Bragaglia and Marey could not have differed more about properly depicting the “action” that so fascinated them. For Marey, the camera could divide and distinguish temporal intervals of motion. For Bragaglia, the camera was a step closer to an a-chronological theory of time.¹³

Marey’s vision and notational system of picturing time has been much more successfully aligned with ‘truth” than Bragaglia’s durational blurs. Surveys and control groups continue to tabulate norms with the logic of the representative sample. Perhaps, though, the most popular offspring of Marey’s legacy is the demand for high resolution. HD has become the clarion call of the “cult of individuating detail.” It sets the primary standard against which most visual technologies are judged. Screens and cameras are marketed on the basis of how minutely they can render differences in the spectrum of light. The resolution sold is both literal, as in the number of pixels on a screen—the granularity of the image—and also figurative, as in how definitively the apparatus has solved the problem of quantifying the complex system of sensory perception. In the case of recent displays, the problem seems to be entirely closed: the screen can detail an image
at a pixel resolution beyond the perceptual limits of the human retina. The question of accuracy has been seemingly ‘resolved.’

Machine vision continues to be valued for its insight into otherwise obscure phenomena. Using methodologies much like Marey’s own, researchers at MIT have photographed the “propagation of light.” One of the videos released to the public appears to demonstrate a continuous stream of light moving across an apple. It is actually a composite, rendered through a series of still samples, shot in intervals over the course of several minutes. Essentially, the technique reworks Marey’s and Muybridge’s early experiments. The technology obviously has advanced. The shutter speed of each exposure is two trillionths of a second. The project team speculates that this camera could be used to develop new medical procedures for visualizing interior areas of the body, much like conducting “ultrasounds with light.”

As hinted in these predictions, the prominence of mechanical vision today cannot be properly appreciated without recognizing its importance to military and medical science. Paul Virilio and Kittler both draw parallels between advancements in optics and the importance of visualizing bodies in higher definition. For Virilio, the camera’s optical power has replaced material bodies with fields of intensities. Addressing the dominance of high resolutions in medicine, law, and the military, he concludes that beings are processed into data, into a “telepresence” that can be counted, measured, and, if desired, manipulated. He calls it the “merciless more light,” a “hyper-realism” that extends perception onto a more controllable plane. Kittler, referencing Oliver Wendell Holmes
and Virilio himself, pushes the theory even further, depicting photography as a negation of physical matter. What previous media could not capture, photography delivers: “the possibility of storing, transmitting, and finally processing data without matter and without the loss of accuracy.” In Kittler’s estimation, the result is “chemically pure information,” produced from “chemically pure destruction” of sensory material. In other words, to transcribe vision and turn it into legible information, perception must be stripped from its material body. This can only happen “perfectly” through the interventions of a machine. Kittler compares the camera flash to that of a “bomb” or “an annihilation.” They deliver Virilio’s more light: sensory perception blown up onto a hyper-real plane. The “flash” and “annihilation” of material makes possible perception’s ‘upgrade’ and resolution into higher definition—the pristine output of information.

So pervasive is the authority of photographic information, that it has been invested with a morality all its own. For example, Daston and Galison admit that it takes vigilance to gather multiple samples of phenomena. Observers must be diligent and patient in gathering information. They must likewise restrain themselves from interfering with the apparatus, exercising a kind of visual temperance. Infused with this puritan work ethic, the practices of mechanical objectivity occupy an almost unassailable position alongside values of truth and integrity.

Some might object to extending these ethics and the evidentiary truth of value of photographic information into our own age. Photoshop and all its offshoots have made us much more cynical regarding the image’s objectivity. Jennifer Tucker speculates that
today’s generation of camera-users, with their bevy of digital tools, might be more willing to see images as “having a life independent of material culture.” Editing applications might be shaking images free of their connections to the empirical world.

Tucker cautions, however, against a false contrast between the savvy of modern digital editors and the presumed guilelessness of previous generations. She revisits many public disputes in the Victorian era over the ‘truthfulness’ of images and the legitimacy of mechanical objectivity. On many occasions, the scientific community struggled against popular opinion in the aftermath of infamous photographic hoaxes, such as the scandals surrounding spirit photography in the nineteenth century and the dubiousness of photographs that “proved” the existence of fairies and canals on Mars. These doubts called into question the camera’s mechanical objectivity. They tested the limits of its reliability and fidelity to the material world, probing how much accuracy its automatized procedures guaranteed.¹⁸

The Victorian disputes are, in fact, quite comparable to current skepticism surrounding digital editing. In both, I would argue, mechanical objectivity wins out. Despite many cases of botched magazine covers and careless hoaxes, there remains strong allegiance to the evidentiary power of the photograph. Often I will hear that photographs, unlike texts or illustrations, give evidence of how the world is. Just as frequently, though, come complaints that digital images are rife with manipulation. The coexistence of these competing attitudes, one of credulity and one of cynicism, finds its footing in a binary judgment. It declares that images must either maintain the
“ineradicable glow of veracity” or be judged fake.19 True or false. Touched or untouched. Virgin or sullen. The binary can be observed holding sway on social news websites like Reddit, where images are often promoted by communal voting. As images ascend to the “front page” of the site, they draw more scrutiny. Comments inevitably pepper the more striking compositions with suggestions that they are “fake” or “shopped.” The criticisms imply that a modified image does not deserve front-page status. One post appeared titled “The people in this photo thought they were alone...”. It included a picture of two women and a young girl crouching down to examine the foliage aside a forest path. Behind them, creeping up the trail, is a brawny black wolf, its eyes glowing yellow in the camera’s flash. Users quickly expressed their suspicions about the authenticity of the image. Comments ranged from lengthy denunciations, with explanations of pixel contours and flash angles, to more concise statements, like “BULLSHIT.”20 The original poster of the image followed up with another link entitled “To all the photo experts on Reddit who claimed this incredible photo of people unaware of a wolf behind them was fake, here’s the full-size original [pic].” The debate continued onto the new thread.21 The precise language used on Reddit to evaluate the photograph is an encouraging sign for anyone concerned about the future of visual literacy. Also, photographic skepticism has proven valuable time and again when policing false advertising or abuses of power, such as British Petroleum’s (BP) management of its public image during the 2009 oil spill when it was caught releasing doctored photographs of its control rooms.22 Still, I cannot help sympathizing with the exasperation apparent in the original poster’s second title. The
factuality of Reddit’s big, bad wolf almost completely dictated the terms under which the image was received by the online community. It won attention almost solely in terms of its ‘truthfulness.’ The fate of the hikers, the reaction of the photographer taking the photo, the gender of the three potential victims (all female), its re-imagining of fairy tale conventions—these were topics that were mentioned only in relation to the defense or the debunking of the image as evidence of a material, historical event. One of the two terms of the binary had to be marked: “true” or “false.”

It is this binary judgment along with the authority of mechanical objectivity that the Hipstamatic has begun to disrupt. Nowhere is this disruption more sensitively felt than in the field of photojournalism. Because photojournalism relies on trained visual artists who uphold standards of integrity, it provides a unique window into the struggle to assert the truth-value of digital imaging technology. On the one hand, photojournalists have been willing to experiment with novel technologies, like the Hipstamatic. Recent marketplace pressures on print journalism have created incentives to innovate and find new styles for distinctive news reporting.23 On the other, the blending of editorial and news content on many blogs and cable news shows has drawn attention to partisan-politics and biases in reporting. While some outlets like to define themselves as either editorially based or empirically based, most balance their reporting between these two approaches.24 Within the murky middle ground, an original photograph becomes an important visual sign of a news agency’s resources and dedication to reporting events as they have unfolded. Therefore, any technology that would call into question the camera’s
link to material reality or undermine its reliability as an unprejudiced witness, is sure to
draw fire, particularly from those who subscribe to journalism’s empirical model.

**Hipstamatic at War**

In 2011 these very objections arose when a photograph taken by Damon Winter for the
New York Times was awarded third place by Pictures of the Year International (POYi).
The point of contention was not the subject of the image: a U.S. soldier walking on patrol
through a sparse copse of trees. Rather, some photographers, journalists, and readers
were upset with the technology he used to capture it. He took the photo with a
Hipstamatic app running on an iPhone. 25

The Hipstamatic and its relatives (e.g., Instagram and Camera+) impose visual
effects on images captured with the iPhone’s built-in camera. Most of the effects are
modeled after toy camera formats from the 1960s and 1970s, such as the Diana and the
Holga. The kitschy aesthetic is reinforced by the Hipstamatic’s interface. When users
download and open the app, their screen simulates the back of an inexpensive snapshot
camera from 1984.

Its designers joke on their website that the camera is “precision molded with
gator-skin plastic.” But the casing, along with most of the camera’s virtual parts, can be
customized. Touch the negative loader, and new film stocks can be chosen. Turn the
camera “around” (again, this is all simulated on screen), and the Hipstamatic’s lenses or
flashes can be exchanged for others. Depending on the combination of choices, the
photos produced take on a distinctive style through shifts in color-tone, sharpness, and contrast with additions like lighting flares, film grain, and vignetting. No matter what the combination, all the styles share some features: each image is visibly matted on virtual paper, square in format, and undeniably effected.

Some photojournalists, like Winter, have used the Hipstamatic as a primary camera to capture events of the war in Afghanistan. The decision to use automated processes to compose images documenting traditional subjects of “hard news,” like a military engagement, has aroused concern, even outrage. Chip Litherland, one of Winter’s colleagues at the New York Times writes that “the fact that Damon Winter’s ‘Grunt’s Life’ was just awarded a third place at POYi is a game changer. The fact it was shot on a phone isn’t relevant at all and fair game, but what is relevant is the fact it was processed through an app that changes what was there when he shot them.” Litherland sees the Hipstamatic as nothing less than a threat to the integrity of the entire field: “photojournalism at it’s purest form is over and POYi just killed it.”

Although the mention of “purity” certainly harkens back to Kittler’s comments on the photograph’s chemical purification of information, Litherland’s rationale for denouncing the Hipstamatic articulates a more indirect defense of the image as evidence. As a photographer, he subscribes, as one would expect, to the importance of the artist’s “hands” on the apparatus. It is the Hipstamatic’s automatism and inaccessible processing which troubles him. They bar the techniques of the artist from composing the final image. This appeal to the virtuosity of the artist replays the fairly well regulated binary
discussed earlier: the image is either a virtuoso fabrication or a piece of empirical evidence. In a studio, the artist manipulates images, transforming them into projections of an individual imagination. In a lab, the scientist uses the image to certify observations, capturing stills with the camera’s mechanical, unbiased operations. Both types are directly connected to assertions of the image’s objectivity—one through subverting the camera’s automated procedures, the other through letting the camera execute its operations unmolested. Litherland seems to compound these two types, suggesting that professional intervention is needed to discover the empirical content in a photograph.

A CNN column by Nick Stern returns to Litherland’s critique by calling attention to the Hipstamatic’s problematic handling of empirical information. According to Stern, the app betrays the trust we have invested in mechanical vision:

Every time a news organization uses a Hipstamatic or Instagram-style picture in a news report, they are cheating us all. It’s not the photographer who has communicated the emotion into the images. It’s not the pain, the suffering or the horror that is showing through. It’s the work of an app designer in Palo Alto who decided that a nice shallow focus and dark faded border would bring out the best in the image.27

Stern’s defense of journalism’s objectivity and the evidence of the camera stems from his desire to see real “pain” and “suffering.” The problem with these apps is that they end up only delivering a simulated pain and suffering. Whereas regular photography captures the material world, the apps turn their lenses on themselves. Audiences are left with
pictures of a machine’s mind. For a scapegoat Stern’s blame falls on an unqualified human intercessor—the Palo Alto programmer, who has warped the parameters of the camera’s mechanical objectivity.

Stern and Litherland both received a good deal of attention for their comments. Most of the responses objected to their dismissal of the photo apps. The criticism inspired Litherland to give the technology a second chance. He posted a follow-up to his blog admitting that applications like the Hipstamatic did have their value as entertaining devices. He made it clear, though, that he was still nervous about its impact on photojournalism:

> What I haven’t changed my mind on its role in photojournalism [sic]. I think it’s a slippery slope of ethics to be masking and changing content for news stories. For feature stories, illustrations, and work not labeled as news? Sure and please do. I think there is one last holdout of truthiness out there, though, and that is documentary photojournalism. It is a field that should adhere to its own set of rules and ethics, no matter how the world changes around it. I’ll preach that until it dies (don’t worry, I’m not going there).

Litherland feels that the Hipstamatic is too inconsistent to serve as an appropriate tool when hard facts are needed. Even Winter agrees with this sentiment. His response to Litherland in the New York Times photography blog, rationalizes his use of the Hipstamatic by explaining the story that accompanied the picture was an “essay not a news story.” Thus, the photojournalists reach common ground: certain news stories
require the mechanical objectivity of the camera, and the filters of the Hipstamatic, they conclude, can obscure a more authentic means of reporting the facts.

Not all photojournalists are in agreement. Ted Kuwayama exclusively used the Hipstamatic to document the daily lives of U.S. Marines stationed in Afghanistan. The effort was part of the Basetrack Project—Kuwayama’s non-profit initiative to bring portraits of the war to social media platforms. Speaking about his choice of the Hipstamatic, Kuwayama argues that mainstream journalism is more concerned with an “aesthetic...not an ethic.” Objectivism has calcified into a visual style that has little to do with the larger mission of reporting. His selection of the app, therefore, was meant to issue a challenge to the field. He recognizes that the Hipstamatic’s images represent a populist, accessible medium and hopes they “demystify this whole process of photojournalism.”

Part of that demystification involves refashioning the photographer’s relationship to subjects, particularly through more mobile and accessible cameras. Kuwayama and other Basetrack photojournalists, for example, enjoyed the portability of the iPhone. They argue that its subtle and familiar presence allowed them to capture more intimate glimpses of their subjects than if they had been aiming a large DSLR camera. Winter describes a similar experience: “Using the phone is discreet and casual and unintimidating....[The soldiers] would have scattered the moment I raised my 5D with a big 24-70 lens attached. But with the phone, the men were very comfortable. They always laughed when they saw me shooting with it while professional cameras hung from my
shoulders.” The mobile phone, for most people, is an everyday camera. It is the same instrument used to take pictures of pets, children, friends, lovers. The sight of a professional photographer wielding an iPhone is like catching a dentist using a toothbrush. Both instruments give the impression of a domestic procedure; its ordained operator is laicized, and the object of the procedure is allowed a vicarious agency—this is something I do. When Basetrack photographer Balazs Gardi was photographing with his iPhone, soldiers, airline pilots and Afghans would even ask him to play with the app themselves, taking their own pictures with the Hipstamatic (fig. 1 & 2).  

Figure 1. Photograph by Balazs Gardi. The image is of an Afghan dog fight. Gardi feared that a police officer in attendance might prevent him from taking pictures, but, instead, the official was too busy taking pictures with his own mobile phone. (from “The Mazari Tiger,” Basetrack, February 18, 2011, http://basetrack.org/2011/02/18/the-mazari-tiger/) (CC BY-NC-ND).

Figure 2. Photograph by Safi, a flight attendant for Emerites airline. Safi took the picture after Balazs Gardi leant him his phone. It was the first image Safi had taken with the Hipstamatic. (from “Vienna-Dubai Flight,” Basetrack, October 10, 2010, http://basetrack.org/2010/10/12/vienna-dubai-flight/) (CC BY-NC-ND).
Kuwayama explains, fits with the group’s overall commitment to using technology that is accessible to anyone, like its Facebook page and custom WordPress site. Each piece of technology reassures viewers of accessibility—even a war on the other side of the world. In fact, so intimate and revealing were the Basetrack daily dispatches that they ultimately doomed the project: six months after its inception, in February of 2011, the US military judged the project too much of a security liability and shut the embed down.

Besides accessibility, three other points illustrate the Hipstamatic’s threat to mechanical objectivity. The first is the collection of representative samples. Again, as Daston and Galison emphasize, the drive of mechanical objectivity is to collect individual phenomena, replete with differences that describe the range of the normal. If a camera is incapable of distinguishing differences between shots, then it would certainly lose this tie to objectivism. The Hipstamatic, according to its critics, exhibits this very incapacity. It has a consistent gloss. Litherland writes, “I have a Photoshop action on my desktop that is titled “POYi filter” I made it as a joke. It rotates an image 20 degrees, adds a heavy vignette, throws in a bit of grain, and converts to grayscale.” In mocking the Hipstamatic’s programming scripts, Litherland is taking issue with an automation that endangers the camera’s sensitivity to individualizing detail. Its filters impede it from making visual phenomena discrete.

A second threat is distance. The Hipstamatic estranges its operator from the scene of the photographic event. Although Daston & Galison maintain that this is a goal of mechanical objectivity, they also stress the importance of researchers monitoring the
photographing of specimens: “once so policed, and presumably only then, could the photographic process be elevated to a special epistemic status.” The claim resonates with Litherland’s frustration over not being more involved with the processes of development. The Hipstamatic bars any such oversight. In fact, it flaunts this obstruction. The app digitally “clouds” the camera’s viewfinder to recreate the smudges and faulty transparency of plastic windows in toy cameras. And the Hipstamatic provides no preview of how its final image will be rendered.

Damon Winter, in defending his third-place image, contends that there is no difference between the Hipstamatic’s automations and the material restrictions of analog cameras. He offers the example of POYi’s first place photograph. It was shot in black and white and focuses on a Hmong man clutching a child against a blurred background. Winter proposes that its focal length, film stock, and processing predetermined much of its final visual style. Ultimately, he argues, there is little difference between these selections and the Hipstamatic’s “choices.”

One has to admit, though, that KC Ortiz, the photographer of the first-place image, was able to control the development of the final print. Whether it was made in a darkroom or scanned into editing software, Ortiz had an opportunity to “correct” the final look. Winter subtly acknowledges this distinction with his qualifications that his photo was not used for a hard news piece and that he wished he could have used “a program that applied less of an effect.”
A third and even more direct threat to mechanical objectivity is the Hipstamatic’s destructive editing: it permanently marks the image with its modifications. In doing so, it strips away resolution from the original photo. Most famously, it crops pictures to a square format, discarding anything captured in an iPhone’s native 4:3 aspect ratio. Depending on the ‘roll’ or ‘lens’ selected, the app might also digitally matte an image, scratch an image, add noise, add grain, add flares, decrease the midlevel values, decrease the depth of field, decrease color levels, desaturate, speckle, gloss, blur, and burn. In total, its effects conceal information. Its additions are always subtractions.

Photographer and sociologist Nathan Jurgenson and Gizmodo commentator Matt Buchanan have suggested that the Hipstamatic’s destructive filters capitalize on the camera phone’s origin as a low-resolution format. A cell phone camera from 2004, for example, could boast only a single megapixel of resolution and reacted rather bluntly in all but the best lighting situations. Still, the conveniences they offered, including the ability to send images to other phones over MMS networks, made them wildly popular. They were mobile, miniature toy cameras that defined a generation’s first foray into photography. The Hipstamatic, with its destructive additions, nostalgically harkens back to this low-tech aesthetic.

In fact, Jurgenson finds the Hipstamatic’s nostalgia running even deeper. He contends that its filters attempt to recapture procedures of yesteryear, while remaining conveniently free of their material history. He sees the standardized formulas that drive these outcomes not only diminishing the range of photographic expression, but also
dangerously glossing present-day scenes of war. The Hipstamatic drapes these scenes with visual queues associated with battles safely fought and ended, conflicts that have been archived and contextualized in the historical record. The visual mimicry imposes nostalgic meaning on a modern landscape, which would otherwise remain troublingly indeterminate. Jurgenson terms the Hipstamatic images “faux-vintage photographs.”

They are like new t-shirts at a department store that reprints a design from the 1980s only distressing it to imitate years of weather-beaten wear. They sell the comfort of the familiar with the authenticity of aged cultural commodities.

I do not wish to refute any of these criticisms of the Hipstamatic, but I would like to re-contextualize them through a discussion of photonic rhetorics. As we have seen, photo apps create challenges to mechanical objectivity. Those same challenges, however, also indicate strategies emerging in visual communication, modes of sense-making which are more entangled with the persuasive effects of light. In the automation of these photo apps, we ironically find structures of a more subjective mode of perception. As much as the Hipstamatic’s inaccessible scripts would seem to lead to a standardized, even universalized style, they inevitably yield more personalized images.

**Machine Tricks**

A way to investigate this concept of personalized automation is through a disagreement between the aesthetic philosopher Nelson Goodman and art historian E.H. Gombrich. Goodman, in *Languages of Art*, criticizes Gombrich’s belief in perspective as an a-
historical construct. In Goodman’s estimation, any claim of an objective, non-interpretive representation of a material object is absurd. He uses the description of train tracks running into the distant background: “the artist who wants to produce a spatial representation that the present-day Western eye will accept as faithful must defy the ‘laws of geometry.’” Physically speaking, train tracks never converge; yet we represent them this way on a two-dimensional plane. They are a sign that signifies to those who can read it that these things are continuously parallel. Perspective, Goodman believes, must be learned. Even when it is, differences will still arise because of the conditions of its viewing. The angle of light will change from one position to the next. He adds, "even where light rays and the momentary external conditions are the same, the preceding train of visual experience, together with information gathered from all sources, can make a vast difference in what is seen." Learned convention, physical properties of light, and the unique experience of the individual erode any idea of universal perspective or a machine that might reliably and faithfully reproduce it.

Goodman might very well have enjoyed the Hipstamatic. It brings to the surface assumptions that regularly remain hidden in the photographic act of communication. The filters foreground visual conventions, the play of light, and historical experience as conditions for the legibility of an image. Elements that might otherwise have been assumed to be inherent to the image’s “truth” suddenly become optional. By simply changing the aspect ratio and color balance of default iPhone photos, the Hipstamatic
depicts all other photos as not-having-been-customized. Photographic vision becomes (again) a much broader spectrum of decisions.

It must be admitted that although the Hipstamatic allows one to intervene in some of the conventions of photographic vision, it makes these processes largely impenetrable. Little access is given to the filters beyond ‘selected’ or ‘not selected,’ turned on or turned off. The scripts are numbered and closed. Each automated sensibility reveals its presence while concealing its trick.

In his response to Goodman’s criticism, Gombrich provides an interesting way to interpret this closed trick. He argues that even though some conventions of perspective might be learned, optical illusions demonstrate that there exist some commonalities in subjective responses to visual phenomena. He recalls a study by Robert Thouless in which a coin on a table always appeared to be more inclined toward the viewer than it should given the rules of geometry. From this, Gombrich posits, “there is indeed something compelling in the trick”—there is consistency to the inconsistency in the transformations of the real into the sensory. What interests him is the “perspective renderings,” or optical disturbances that “unsettle our perceptions” and wake us up to the trick. But he adds, “pictures constructed on a tightly knit system of perspective (which is imitated by the camera) tend to resist this process. It takes a special effort and much unlearning of reactions to see them merely as things. The very way they dissolve and transform themselves approximates them to that elusive experience we describe as the phenomenal world.”39 A photograph is constructed with conventions so similar to the
tricks of human vision that the viewing experience layers seamlessly onto assumptions and habits learned from eyesight. The default settings of an iPhone, or of any digital camera for that matter, reconstruct this “tightly knit” system of ocular perception. Perspective, white balance, focus—it has all been calculated to ‘replay’ the tricks of vision. The Hipstamatic, on the other hand, resists being dictated to by the conventions of vision. It unravels the system and (re)exposes the image as a thing unto itself, another mode of seeing, comparable but unlike our own. In doing so, it begs us to evaluate how an image is seen. How is the machine accomplishing the seeing? What tricks has it played with light? And how are they related our own?

These questions necessitate attention to the properties of light. The Hipstamatic testifies, in shot after shot—despite its scripts—that the properties of light are by no means fixed quantities nor do they operate by way of restrictive formulas. Rather, they are contingent and wily agencies, revealing as much as they conceal. With each ‘print,’ the app corroborates Goodman’s claim that “the behavior of light,” despite its consistent physical properties, “sanctions neither our usual nor any other way of rendering space.” Instead, the Hipstamatic capitalizes on the persuasive effects of light and readily admits its peculiar method of interpreting them. Change the filter to change the method. The effects are tenuous modes of invention within fluctuating assemblages of light. They are styles that flaunt their idiosyncrasies. No mode ever becomes the mode, no hierarchy of settings or a combination more authoritative than the last. They are filters meant to be changed.
With its tricks visible and their secrets disguised, the Hipstamatic invites users to try to perform them. To do so, the user must accept that some transformations and agencies lie beyond the operator’s control. Basetrack photographer Rita Leistner compares this trade-off to trashing “all your training” and “all your experience” and substituting it “with a Green Lantern Magic Power Ring that anyone could use.” Although overstated, Leistner’s comparison emphasizes the Hipstamatic’s investment in occult metamorphoses. Like a superhero’s intergalactic power ring, its “skills” and “powers” transform the behaviors of light into dazzling displays. Every image “developed” by the Hipstamatic entails some degree of surprise, a pleasant or unpleasant disturbance between expectations and output, similar to the unpredictability that was common in the development of Polaroids, or prints picked-up at the pharmacy, when an instant captured by the camera resolves itself far beyond the reach of expectations and memory. The only difference with the Hipstamatic is that it has been engineered to dramatize this subversion of photographic intentionality. Its delivery caricatures our efforts to make vision legible. It distorts what we hope to preserve of our perception of light. This effect can never be de-selected. Its spell is cast no matter what filter we choose.

As much as the transformations are meant to startle, the operator is invited to wield the ring and imagine what metamorphosis it might work next. This is its game: play and be played. The rules require a kind of pattern recognition: what are the persuasive tendencies of light? After all, the app is not an unlimited wonder-worker. It
performs its tricks by exaggerating several persistent rhetorical effects of light—certain conditions that affect perception in fairly reliable ways. I am referring again to Richard Kelly’s casts of light, described in the previous chapter as a way of approaching photonic rhetorics. Awareness of these patterns will not unlock the code to the game nor will it unmask the alterity of light, but it will expand the interactions available through the app and deepen strategies for harnessing the persuasive possibilities of light.

First, it should be noted that the Basetrack photographers often shot with a consistent set of Hipstamatic filters. Ina’s 69 film was usually paired with the John S lens. Leistner claimed this duo produced the least “radical” of effects. The combination tends to boost areas of clarity against areas of obscurity. It narrows the depth of field, focusing some areas of the image, blurring others. It also increases the contrast, deepening the black values of an image and elevating its highlights. The ultimate composite of these filters inevitably leads to strong distinctions—the effect of “focal glow.” When a helicopter flies over a forward operating base, the craft is transformed into a prehistoric bird (fig. 3). The behemoth seems to carry a light all its own. It is backlit by the sun, and the camera’s sensors compensate by casting the land and Marines below into darkness. Only the brightest highlights on their helmets and jackets read in the image. Whereas most cameras would overexpose the sky, blowing it out to intense whites, the Hipstamatic paints the sky in circles of yellow, green, blue, and finally black at the edge of the photo where it has been vignetted into a night sky. The lighting ensures that the background object will take the foreground; all eyes will regard the passing of this creature.


Figure 5. Photograph by Teru Kuwayama (from “SSgt Gonzales & Alpha Co,” Basetrack, October 15, 2010, http://basetrack.org/2010/10/15/ssgt-gonzales-alpha-co/) (CC BY-NC-ND).
A similar style is used when a helicopter is photographed in the distance, airlifting civilians to safety from a bombed airbase (fig. 4). Here the Hipstamatic accents the rotorcraft by illuminating a phosphorescent draft of air in an otherwise navy horizon. The smoke flickers to life through the filter. The helicopter’s descent to the bottom of a plume of light suggests both destruction and salvation. The divisions of light form a vigil candle around the wick of the helicopter.

In yet another scene, a staff sergeant stands before his company and gestures toward the horizon (fig. 5). The contrast of sunlight on his profile against the shadows across his audience cut his figure from his surroundings. He has been made into a mythic hero: a baroque bronze statue or a die-cut action figure model. The disparity of values and the limited color palette announce that this man must be reckoned with, simply for his ability to so authoritatively distinguish himself from the landscape. Kuwayama’s framing combined with the Hipstamatic’s reading of focal glow demands we listen to him. He is the protagonist of the image, the one who will speak for the composition.

As much as the filters can accent the effect of focal glow, they can also cover the world in a pervasive sameness, harmonizing even the most diverse elements. The effect is best observed in the Hipstamatic’s Kaimal Mark II lens, which washes images in a uniform haze of magenta, what Kelly would identify as “ambient luminescence.” The preferred filters of the Basetrack project achieve a similar effect with hues of blue and green. Because of the wartime setting, the consequences of this rhetorical cast are even more profound. When an Afghan and U.S soldier grasp each other’s hand, their fingers


Figure 8. From Basetrack: One-Eight, open source publication, May 30 2011, http://basetrack.org/2011/05/30/basetrack-one-eight/ (CC BY-NC-ND).
interwine with identical swatches of green peppered throughout their skin and sleeves. Their agreement is sealed in a sameness of color (fig. 6).

The logic of ambient luminescence carries over to images that might otherwise be construed as confrontational or oppositional, like a soldier patting down an Afghan man (fig. 7). The Hipstamatic camouflages the soldier’s camouflage, overlaying the uniform, the landscape, and the Afghan’s civilian clothes with a palette of mint and jaundice yellow. The pat-down alludes to an embrace. Or when a marine (tan) escorts a bound Afghan prisoner (bluish-gray), the dense blacks and desaturated highlights are dispersed enough to point to an equilibrium, to a momentary middle ground. Perhaps the two have gone out for an evening stroll (fig. 8).

The Hipstamatic is perhaps best known for maximizing the impact of Kelly’s third cast, the “play of brilliants.” It is the chance flicker of light, the fleeting sparkle that owes its life to a particular angle, a particular movement, a happenstance arrangement of an assemblage. With this perceptual trick, Basetrack photographers are able to execute their most arresting images with the Hipstamatic. Sunlight on a soldier’s helmet, for example, becomes so radiant it appears like a Pentecostal visitation. So often the faces of children are also caught in this contingent flash. In many of the photos they appear like specters, lurching into the foreground or hidden in the background. In either position, the light differentiates them as evanescent beings—rare creatures seldom glimpsed in a landscape overrun with men and guns (fig. 9 & 10).


Figure 11. From Basetrack: One-Eight, open source publication, May 30 2011, http://basetrack.org/2011/05/30/basetrack-one-eight/ (CC BY-NC-ND).
The paradigmatic Basetrack child stands against a tree while two US soldiers walk past, their rifles readied for battle. From the photographer’s angle and through the iPhone’s sensor, the sun explodes in a tree above the child. Beams of its light shoot down, shielding the child from whatever mission or danger drives the soldier forward (fig. 11).

This play of brilliants aligns with the Hipstamatic’s central directive. It is configured to remind us of fortune in any photographic event. The contingency does not reveal individuating detail. Quite the opposite: it takes place in the erasure of detail—blinding flares, smudges of grain, signs of distress, inconsistencies of color fields. Marks like these in early photographs would often be left as signs of a machine’s impartiality, testament to an untampered image. Yet the Hipstamatic’s digital marks simulate commonplace flaws. With every artificial click of its shutter, the app reminds its users that the image will be remarkable as much for what it reveals as for what it conceals. An aesthetic built on this maxim could potentially be a consolation or a threat for a photojournalist facing the problem of depicting the horror of war. No matter how technologically advanced the apparatus, no matter how many pixels, or how high the definition, the Hipstamatic provides the indelible digital mark of something that has been left out. It avows that all things have not been captured by the machine. The facts within have been utterly distorted. Additionally, these digital marks carry consequences for photography at large. They hint that their distortion might never be shut off. They tease every machine, every image—they tease vision itself—that in each there is a mark.
One Basetrack image encapsulates this re-scripted photography. A Marine wears an improvised plastic mask to protect himself from the sand and wind (fig. 12). Through the Hipstamatic’s filters, he takes on the appearance of a post-apocalyptic figure crudely disguised and slouching across a beaten landscape. The image featured prominently when the Basetrack photographs were exhibited at the New York Photo Festival. Its resonance is clear: aesthetic and subject have combined. The image declares that this is a new face of the war. This is a different vision of the campaign in Afghanistan. This is the news as you have never seen it before. At the same time, the image conceals itself. It has no face. The winds have literally occluded its individuating details. Yet it remains personal, an aesthetic willfully outside the confines of journalistic objectivity. This is a subjectivity without a fixed, discernable subject.

With the Hipstamatic, digital stills become mysteriously more scripted and more

contingent—a flirtation among operator, apparatus, and light. It is easy to dismiss this as nostalgia, or as a longing for authenticity that analog formats captured long ago. The apps themselves encourage this comparison in their marketing campaigns (Camera+ actually names one of its filters “nostalgia”; it belongs to the “I [heart] analog” package). Most effects are specifically designed to simulate old processes and technologies. Nevertheless, it would be an oversight to dismiss the apps as simply another form of mimesis—a desire to reproduce and reclaim an old cultural cache. Arguments that the Hipstamatic elevates style over substance need to be contextualized within this history of the photograph as evidence. The resistance of these photo apps to the dominant application of mechanical objectivity provides opportunities to re-evaluate our own preconceptions about the camera’s relationship to truth.

Furthermore, by using its self-referential style to exaggerate the structures of light, these photo apps sell the pleasure and possibilities of using digital instruments to explore the rhetoric of visual perception—an approach to the alterity of light that has long been confined to the province of artists or bracketed by science. In this way, the Hipstamatic’s ‘degradation’ of the image is not a strict erasure. Its simulation of old styles betrays much more than simply a yearning to make the present past. Rather, we might think of the authenticity as that which comes from resisting a particular brand of mediation, namely the “objective” style of translation into high definition. By tagging the clarity of photos, the Hipstamatic gestures to a subjectivity of perception, which is mediated by a much more inaccessible and multiform script. Its images are not so easily resolved.
NOTES


3 Ibid., 98.

4 Ibid., 82.

5 Ibid., 117.


10 Crary, Practices, 147.


12 Braun, Picturing Time, 301.

13 For this alternative to chronological time, Bragaglia owed a large debt to Henri Bergson. In lambasting an approach to time like Marey’s, which isolates it into increments, Bergson called for a return to a notion of “flux of time”—durations that are continually in motion, passages which are never static or divisible. . Bergson believed a science of time misleads humanity into thinking the world can be fixed and studied objectively. It upholds the illusion that the past can be examined and recalled, when, in fact, the past is always with us in the present. For Bergson, the past never expires. See Henri Bergson, Matter and Memory, trans. Nancy Margaret Paul and W.S. Palmer (London: G. Allen & Unwin, 1912), 246; Time and Free Will, trans. F.L. Pogson (London: G. Allen & Unwin, 1910), 198


20 Adrian,” “The people in this Photo thought they were alone...,” Reddit, March 13, 2008, http://www.reddit.com/comments/6bxac/the_people_in_this_photo_thought_they_were_alone.

21 Adrian, “To all the photo experts on Reddit who claimed this incredible photo of people unaware of a wolf behind them was fake, here's the full-size original,” Reddit, March 13, 2008, http://www.reddit.com/r/reddit.com/comments/6byul/to_all_the_photo_experts_on_reddit_who_clai med.


31 Litherland, “there’s an app.”


38 Goodman, Languages, 16.


40 Goodman, Languages, 19.

41 One might argue that the effects included in the starter kit are given some sense of privilege above the others, which must be purchased as additional add-ons, but those digital downloads would not be profitable if they did not offer an attractive alternative. The Hipstamatic is in the business of keeping its options ever-changing.


43 See Chapter 2 for a more detailed discussion of Kelly’s lighting effects.

Pier Paolo Pasolini requests that we “consider the short sixteen-millimeter film of Kennedy’s death. Shot by a spectator in the crowd, it is a long take, the most typical long take imaginable.”

The twenty-six second sequence of President John F. Kennedy’s death, filmed by Abraham Zapruder, serves as a touchstone for Pasolini’s reflections on uncut cinema. The long take is noteworthy for its unbroken continuity and its reproduction of the “present tense.” It is a personal form, Pasolini argues, which instantiates singular experiences of time and “coincides with human action.” The Zapruder film highlights not only this individualism of the long take, but also its connections to death and the struggle for meaning.¹

The Zapruder film is also a paradigm of the contemporary digital video clip.

As much as we tend to think of digital imagemaking in terms of fragmentation and short attention spans, the long take that Pasolini describes has
become the default style of communicating with moving images. It is the form of video chat and many video games, not to mention citizen journalism, video diaries, skateboarding videos, surveillance footage, family movies, and clips of pet tricks. The long take’s rise in popularity is due partly to convenience. It is simply easier to shoot and upload an unedited video than to cut together a compilation. The other reason is digital accessibility. Since tape has been replaced by disk space, the cost of keeping a camera running is largely negligible, apart from demands on memory.

Despite these changes, montage—the long take’s editorial foil—continues to be the primary style of cinema and television. Short clips and quick cuts are also frequently used online in remixes, mashups and compilation videos. Still, in daily practice, montage has been largely relegated to a boutique role—a luxury, if one has the time and resources. Indeed, it is the long take, or the sequence shot, that has come to define our contemporary relationship with the moving image.

In this chapter I argue that the long take offers its users the ability to compose with two rhythms: one that archives a present pattern, and another that distorts it. This phasing of time fascinatingly corresponds to our own biological responses to light, our own circadian rhythms, and the struggle to entrain ourselves to the indeterminate events that comprise lived experience. But to explore these inventive rhetorics and rhythms, we must first treat the compulsion
to cut, which since the 1980s, has steered discussions away from longer performances with light.

Montage Fever

“The substance of cinema is therefore an endless long take, as is reality to our senses for as long as we are able to see and feel (a long take that ends with the end of our lives); and this long take is nothing but the reproduction of the language of reality. In other words it is the reproduction of the present.”

— Pasolini

The long take is rarely discussed as a new media practice. For one, the form is often associated with the “auteurs” of Hollywood, not everyday camera-wielding consumers. As an expression, "the long take," and especially its more professional-sounding cousin, the “sequence shot,” conjures associations of expertise and cinematic marvel. “The long take” evokes memories of Martin Scorcese’s steadicam in Goodfellas—the tracking shot that follows Henry Hill (Ray Liotta) and Karen (Loraine Brocco) through the Copacabana nightclub.3 “The long take” also seems to carry art house credentials, appropriate for films like Andy Warhol’s Sleep (a five-hour shot of a man sleeping) and Empire (an eight-hour shot of the Empire State building…standing). Long sequence shots also seem to go hand-in-hand with big budgets, like the money Alfonso Cuarón spent
to build a car capable of housing a camera rig that could travel from back seat to
front for a dazzling sequence in *Children of Men*. "The long take" seems like it
needs talented performers, like Chaplin, Keaton, or Jacques Tati, whose comedic
acrobatics can keep a sequence brimming with life. One would have to
extensively plan, like Andrea Sokurov, who filmed an entire feature in one
unbroken take through the Russian Hermitage Museum, 96 minutes of
continuous shooting culminating in an enormous ensemble waltz. Dances need
to be choreographed, fights need to be blocked, like those in Park Chan-wook’s
*Oldboy*, whose protagonist uses a hammer to beat and maim his way down a
seemingly endless corridor of adversaries, while the camera refuses to cut. Those
sequences come to life with a Bruce Lee. A Gene Kelly. Altman’s irony. Leone’s
vistas. Kubrick’s detail. Ozu’s observational eye. In sum, the long take requires
company that does not seem to come cheaply. Certainly, it is not the stuff of
smartphone shooting.

Another reason for the lack of attention to long sequence shooting might
be the prestige afforded to montage theory in cinema studies. Since the seminal
work of Lev Kuleshov and Sergei Eisenstein, the art of filmic technique has often
been associated with pictorial juxtaposition. For these early Russian innovators,
meaning and emotional resonance was shaped in the difference between two
images. For example, Eisenstein in the famous Odessa Steps scene of *Battleship*
Potemkin intercuts among czarist troop movements, rifle shots, and peasant faces to convey the terror of a massacre.

Likewise, his contemporary, Kuleshov, tested montage albeit on a smaller scale. He wanted to demonstrate the difference of effects between cutting from a famous actor to bowl of soup and cutting from the same actor to a coffin. Kuleshov’s experiment was memorably re-enacted by Alfred Hitchcock for a Canadian television show in 1964. The episode centered on Hitchcock’s demonstration of what he calls “pure cinematics,” which for him meant “the assembly of film,” or montage. The show itself cuts between an interview with Hitchcock and Hitchcock’s own version of Kuleshov’s experiment. His version opens with Hitchcock filling a medium close-up. That shot is paired with his point-of-view of a woman playing with a young child on the grass. The film cuts back to the close-up of Hitchcock smiling. Hitchcock explains in a voice over that the edit constructs a character that “is a kindly man. He is sympathetic.” The same close-up and reaction shot are then paired with a girl in a bikini. “What is he now?” Hitchcock asks about his own image. “A dirty old man. He’s no longer the benign gentleman who loves babies....That’s what film can do for you.” The “you” in this last comment is telling. The pronoun refers to us, his audience, explaining that montage is the unique service the filmmaker can offer us. It is the conduit for his ideas. The point is emphasized by Hitchcock casting himself in the
role of the onlooker. It all suggests that the filmmaker is the performer and author of an idea; the audience is its recipient.\textsuperscript{6}

This authoritative relationship between filmmaker and audience is central to Eisenstein’s theory of montage. Whereas Kuleshov speaks of montage as the “brick-by-brick” building of cinematic experience—the assemblage of a formal structure for spectators—Eisenstein is much more forceful. Montage, he claims, grants the filmmaker a godlike, violent power, arranging shots as a series of collisions. Eisenstein’s descriptions are overrun with images of war. He writes that the “phalanx of montage pieces, of shots, should be compared to the series of explosions of an internal combustion engine.” Its force “bursts” and “shatters” and “splashes.” These “dynamics of montage serve as impulses driving forward the total film.” He does admit that the single frame, or solitary shot (like a long take), can replicate this conflict, but only on a much lesser scale. He feels it is better to drive singular ideas into one another so that their “cage” might be destroyed.\textsuperscript{7} Through this volatile and staccato rhythm, the sensibilities of the filmmaker and the art of the medium rupture into light. As with Hitchcock, the drive is unidirectional: filmmaker to spectator.

Far from being an outdated theory of early cinema, montage continues to be retrofitted to apply to visual practices. In the 1980s its seemingly bellicose style was closely linked with the pop culture phenomenon of MTV. Echoing
Eisenstein’s descriptions of phalanxes, John Caldwell portrays MTV as a general, who in the 1980s “marshaled many of the looks and tactics of the avant-garde.” It disciplined them into a more palpable format—the music video. The new genre championed rapid-cutting and fragmentation over longer durations and continuity, capitalizing on montage’s rhythmic flexibility. Some critics like Carol Vernallis celebrate this development, claiming MTV’s montage-style “exceeds the functions of film editing largely through its responsiveness to musical features—rhythmic, timbral, melodic and formal.” Others, like Wheeler Winston Dixon, have not been so optimistic. His comments reflect many of the more cynical opinions of the MTV style. He calls it “MTV hyperedited ‘shot fragment’ editing.” According to him, it yields little more than the “hysterical blenderization of visuals.” It jumps. It is disjointed. It is impatient.

For Mark Le Fanu, the style produces “cheap thrills,” which threaten a more informed spectatorship. They erode “the patience to look— that is, to linger, to explore, to risk boredom in the search of epiphany.” Already that practice seems a distant memory, a value “that so long ago was part and parcel of the serious cinema-going experience.”

Many of these laments conveniently scapegoat a cable network for a range of historical developments. Recounting a litany of similar objections to MTV, Marco Calavita argues that the “‘MTV’ in the MTV aesthetic trope serves a
It gathers together a host of influences—from international cinema styles like the Hong Kong action film to technological developments, including the rise of nonlinear editing systems. It is this latter association that is particularly important to theories of the long take. The MTV trope sets up a pervasive assumption that montage is allied with technological innovation and the long take indicates a more organic, “analog” experience of vision.

The association holds firm years after MTV’s peak as a cultural icon, and continues to assert that quick cutting is the archetypal style of digital media. It seems to make sense, given the inherent fragmentation in pixel-based resolutions and hyperactivity of code-based processing speeds. David Rodowick, for example, contends that the very nature of “digital cinema” is “code,” whose discrete units breakdown analog’s “continuity in space and movement,” replacing it with “montage or combination.”

Expanding on Rodowick’s work, David Shaviro in Post Cinematic Affect links the deconstructive and recombinative features of digital cinema to video games—the most likely candidate to assume MTV’s scapegoat status of aesthetic provocateur. Electronic gaming in Shaviro’s argument feeds the “hyperbolic, hyperactive A.D.D.-style montage” of post-cinema.
These comparisons feel right. Given the anxieties of digital culture—its speed, its standardizations, its presumed impact on human imagination—hyperbolic montage seems like the perfect postmodern practice. But this assumption brings a few problems. To start, its historical perspective is somewhat restricted. In looking at a broad sample of films and measuring their Average Shot Length (ASL), David Bordwell debunks the conventional wisdom that fast-cutting and quick takes constitute a recent phenomenon coinciding with the rise of MTV. Bordwell shows that the ASL of many contemporary movies is comparable to that of the ASL of many films from the silent era. Cutting was much quicker before bulkier equipment needed to record dialogue confined the mobility of the camera. His conclusion echoes Calavita’s argument about the complexity of forces behind the MTV trope, many of them technological in nature. Of course, non-linear editing systems, which freed editors to cut without scissors and to manipulate footage in a variety of novel ways, motivated the return to a faster, more attenuated ASL in the 1980s. But other camera technologies had a role in the change too. Better lenses, for example, influenced ASL. Bordwell explains that their enhanced optics provided a more expansive and affordable coverage model. Shooting tight with a shallow depth of field from multiple set-ups saved labor hours and gave directors more control over performances. As a
result, backgrounds and full-body shots were more seldom seen in popular cinema at the turn of the millennium.

Just as changes in the material constraints of filmmaking influenced the reconfiguration of cinematic production and spectatorship in the 1980s, digital camera technology has again reconfigured ASL. The convenience and accessibility of cameras in networked phones, tablets, and laptops along with the affordances of video sharing services have conspired to stage a renaissance for the long take.

**Rhythms of the Long Take**

One of the most recurring criticisms of Eisenstein’s montage theory of cinema is nicely (dis)embodied in Eric Cameron’s “Keeping Marlene Out of the Picture.” Most of the video is a static framing of a forgettable lobby. We hear the high heels of a woman about to enter the frame, and just as her body is going to cross into view, the camera cuts. These “cut-outs” are alternated with extreme close-ups of a nude female figure—one which never *entirely* takes the stage. Lived continuities are sacrificed in favor of the filmmaker’s editorial decisions. All the audience can collect are fractured pieces.16

Cameron’s film nicely illustrates Andrei Tarkovsky’s main complaint with montage cinema and Eisensteinian conceptions of technique. He asserts,
“Eisenstein makes thought into a despot: it leaves no ‘air.’” For Tarkovsky, montage is too concerned with the communication of the filmmaker’s ideas. Tarkovsky would rather let the world breathe into his shots. He would rather let the lens linger with characters, explore spaces, or simply be still and observe. He writes, “I am convinced that it is rhythm, and not editing, as people tend to think, that is the main formative element of cinema.”

His film Solaris provides one of numerous examples of this “rhythm” in his work. Solaris tells the story of a man’s fleeting visions of his wife who has been dead some seven years. The narrative, which is mostly set in outer space, is framed by matching long takes of thin grasses undulating underwater. The reeds ripple and sway. The camera watches them long enough that the motion becomes an alien undertow, foreshadowing and concluding the protagonist’s otherworldly encounters with his wife. These shots are more meditative than explosive. Haunting, not startling. They flow; they do not collide.

But these words are all too abstract to helpfully describe the rhythms Tarkovsky is referring to in the long take. Bazin suggests, “duration” could still serve as an operative term. Any film, no matter how long its “take”—even in the case of Sokurov’s or Warhol’s work—cannot escape the alpha and the omega. There will always be a cut-in and cut-out. Long takes must start and they must finish. Brian Henderson’s term for these first and final points are “intersequence
cuts.”\textsuperscript{20} Vida T. Johnson and Graham Petrie actually counted them in Tarkovsky’s films to measure his pacing. They note that the ASL in \textit{Ivan’s Childhood} often hovers between two and three minutes—“brief by Tarkovsky’s later standards, yet long enough to impose a measured and studied rhythm on the film.”\textsuperscript{21}

That is one way to measure the rhythm of the long take. However, Tarkovsky suggests that these intersequence cuts are not the beats that interest him. “Rhythm,” he says quite bluntly, “is not the metrical sequence of pieces.”\textsuperscript{22} Another alternative is to study the camera’s movement. Johnson and Petrie claim that this too can establish a sense of pacing. With pans and tracking shots, Tarkovsky avoids “visual monotony because of the constant movement of the camera.”\textsuperscript{23} Still, the bookend shots of \textit{Solaris}’s grasses are mostly static, and many long takes in cinema do not move the camera at all.

Tarkovsky offers yet another term to solve the riddle: “what makes \textit{[rhythm]} is the time-thrust within the frames.” This “thrust” reaches beyond the movement of the grass or any other filmed object. It is the unique fluctuations of our own response to a visual take of light over time. To illustrate this point, Tarkovsky contrasts film to music. While music can be arranged in a prefabricated schema, producing an “abstract” effect from the tightly controlled exertions of musicians, “cinema, on the other hand, is able to record time in outward and visible signs, recognizable to the feelings.”\textsuperscript{24} Tarkovsky is gesturing to
the indexicality of the camera—it’s ability to make legible the visible phenomena of the world. It all becomes “recognizable to the feelings” because we are naturally responsive, at a physiological level, to these fluctuations of unscripted visual stimuli.

Bazin mostly agrees with this conclusion. For him, the long take’s openness to space-time allows it to put on display alterities from the visible world. This openness to continuous durations is particularly important for the realism of documentary films like *Nanook of the North* and *Where Vultures Fly*. The long take’s “respect” for “spatial unity” is what creates correspondence. He explains, “realism here resides in the homogeneity of the space;” it produces a mimetic “spatial flow of the action” in real time.  

Of course, there are problems when asserting that a technology is able to capture reality. It builds on assumptions of the camera’s mechanical objectivity and overlooks the differential scripts of apparatuses. It also carries troubling ramifications for art and aesthetics. Brian Henderson scrutinizes these points in his criticism of Bazin. In Henderson’s view, the spatial unity that Bazin promotes ultimately equates the aesthetic with the real and therefore transforms everything that exists into art.  

A more phenomenological problem with Bazin’s realism is framed in Heidegger’s “On the Essence of Truth” in which he attacks the assumptions of correspondence theory. His objects to reducing truth to a double
for that which is made visible. The problem, as he sees it, is that anything which resists making itself clearly and empirically present—anything which refuses to correspond to that which can be known—must be excluded from the domain of truth. Heidegger proposes instead to clear a space for “nonaccord” as a pathway to truth.27

That being said, Bazin’s (and Tarkovsky’s) notion of the real is much more nuanced than Henderson suggests. Bazin does suggest pathways through non-correspondence. He speaks of the fluctuations between stylization and realism, indicating that power is produced in the irresolution between the two. When Bazin discusses Robert Bresson’s The Diary of a Country Priest, he claims, “It would be in vain to look for its devastating beauty simply in what is explicit.” With its long sequence shots, it functions rather by an “accretion of effectiveness,” which is “not due to the editing” but builds up instead as a kind of “static energy.”28 For Bazin, the fluctuation between the concrete and the abstract constructs a film’s inquiry into indeterminate reality.

Similarly, Tarkovsky’s “outward and visible signs” are not a straightforward index of time. The flowing grasses do not merely make explicit the activity of underwater plant life. They are not simply documents of grass’s movements, its colors, its lengths and widths. They point to something more elusive. They thrust in time towards something that does not correspond.
An Important Aside on Embodied Long Takes

The effects of rhythmic accord and nonaccord are inscribed in our own daily exchanges with light. If the long take creates, as Bazin says, a “spatial unity” and “concrete duration,” in reaction to the passage of light, then our eyes themselves can also be said to be constantly responding the rhythms of long takes. Recent studies in the science of circadian rhythms have demonstrated that photoreceptors in our eyes respond to different wavelengths of light. Photosensitive cells in the retina receive visible light and, based on its frequency, relay signals through to the hypothalamus to adjust circadian rhythms. What these adjustments mean depends on the structure of light received. Blue-shifted light, common when the sun in brightest, triggers the body to produce, for one, more dopamine, helping our biological systems rouse themselves from slumber and provide us the energy we need to begin our day. On the other hand, red-shifted light or the absence of light in general, will in turn compel the body to raise its melatonin levels, signaling the same systems to begin relaxing for sleep.

So powerful are the regulatory functions of light that night-shift workers have been shown have suppressed melatonin levels. Because their bodies are constantly exposed to high-frequency visible light (the same that can be found in fluorescent lights and even television screens, or seeping through the curtains of
the bedrooms in which they sleep during the day), their circadian clocks never properly correspond or “entrain” to their schedule. The lack of melatonin has been shown to put them at a higher risk of, among other things, breast cancer. Fortunately, darkening their bedrooms can help phase their circadian clocks back to a healthy rhythm.\footnote{31}

Light, as well as social cues, constantly phases our circadian clocks ahead or behind in time. The production of sleep-inducing melatonin, for example, will be delayed if a person is in an illuminated room, chatting with friends. Of important note, though, is that the hypothalamus seems to have an internal default to which it will constantly defer.\footnote{32} Phase it as much as we like, and still our body will recoil back to a set rhythm, which measures just over twenty-four hours.

Although watching long takes in a darkened room at night can phase-delay the production of melatonin, I am not suggesting that sequence shooting will alter our endocrine levels.\footnote{33} But the agency of light in phasing circadian rhythms serves as an apt model for the rhetorical effects of this style of visual composition. Just as our bodies have a set rhythm which we daily replay, so too do our perceptual habits have a standard rhythm to which they will usually default. Yet we can be phased. We can be shocked. Contingency and nonaccord in the long take, like the wave patterns of light in our optical field, can phase us into new patterns.
Pregnant Spiders

Bazin’s static energy and Tarkovsky’s time thrust come to the screen not through the mere indexing or transcription of familiar signs, but in their alienation. This rhythmic fluctuation between concreteness and abstraction, correspondence and non-correspondence, is strongly tied to the technique of the long take. Siegfried Kracauer articulates a similar rhythm of filmmaking when he discusses Italian Neorealists like Vittorio De Sica who best exhibit the camera’s “miracle of movement.” The miracle occurs when the unexpected and unfamiliar suddenly appear in the “blind spots of our mind.” By exposing the “transient,” the “refuse,” the “invisible relationships” which are ordinarily not seen, Neorealist filmmakers and their long takes reveal the flow of life.

Kracauer calls this flow the street life of film. He believes that “the affinity of film for haphazard contingencies is most strikingly demonstrated by its unwavering susceptibility to the ‘street’—a term designed to cover not only the street, particularly the city street, but also its various extensions.” Parks, shops, any assemblage replete with the patterns and accidents of everyday life are places where the long take can thrive in a network of spatial and temporal continuities. Because it avoids rhythms that the filmmaker imposes, the long take can bring to a surface, in Kracauer’s words, “a kind of life which is still connected, as if by
umbilical cord, with the material phenomenon from which its emotional and intellectual contents emerge.”

The long take, therefore, does not blandly record daily interactions. Nor does it exalt its material to an idyllic form. It would be counter-productive to imagine Tarkovsky’s long takes as Nariman Skakov describes them, “where every movement is a memento of a transcendental quality.” Rather, the intensities fluctuate. The long take wanders into the banal only to retrieve images that Kracauer describes as overflowing with “glittering, allusive, infinite life.” The eruptions are striking because they emerge from familiar patterns. Habitual sights flicker into uncommon instants. Miriam Hansen finds this oscillation in Kracauer’s understanding of the camera: “the same indexicality that allows photographic film to record and figure the world also inscribes the image with moments of temporality and contingency that disfigure the representation.” The realism of the long take grabs hold, or thrusts, because of the promise of correspondence followed by the sudden phasal event of non-accord. Street life, in other words, flows from familiarity that continuously deforms itself. Below are a few contemporary examples of these phasal events:
“Victim Fights Back”

The familiar: A bully threatens another boy. He jabs; he taunts.

Then: his victim lifts him off the ground and body slams him into the cement.

“Charlie bit my finger - again!”

The familiar: two young boys sit together in a chair. The elder puts his finger in this younger’s mouth.

Then: the elder’s cry of pain—“Chaaaaaarlie!”—and the younger’s knowing smile. It is the singsong tone, the timing of the smile, the creases of the pained elder’s face that awakens an uncommon accord within the scene.

“Kill it with Violence!”

The familiar: A portly spider waddles across a cement floor. A bottle appears above the frame; sounds of youthful encouragement, hints of malice. Someone says, “Kill it with violence.” The bottle smashes down into the spider’s thorax.

Then: its young scatter from the carnage, hundreds of premature offspring blanketing the floor. Screams. Shouts. Life has erupted.
Virtuosity

Each of these video clips—all of them long takes—accentuates Kracauer’s notion of street life. In fact, in some ways they play these rhythms more immediately than their Hollywood counterparts. Unlike De Sica, Tarkovsky, and Bresson, these clips are not exhibits of their shooter’s skill. Le Fanu reminds us that the long take has traditionally been a sign of its maker’s “virtuosity.” It requires a skill in choreography and execution that only the most skillful crews can orchestrate. A sequence shot can be a stand-in for the quality of a film’s technical expertise, such as in Hitchcock’s *Rope*, or Sokurov’s *Russian Ark*, or the single-take Uruguayan horror feature, *The Silent House*. Each of these films were marketed and reviewed largely on the basis of their talented applications of the long take.

In most digital clips, shot on phones and uploaded to video servers, virtuosity and technical expertise are not a factor of success. The prestige that these videos provide is measured instead by the significance of the events that unfold and the impact they have on the community with which they are shared. Cachet is granted on the basis of “being there” and capturing the remarkable.

Perhaps the best evidence of virtuosity’s diminished role is the fact that it is so often disguised by professionals to make shots appear more “authentic.” In a Gillette commercial with Roger Federer, the tennis star is shown chatting with a
crewmember backstage before a commercial film shoot. They stand just outside the confines of the set. Federer tells one crewmember to place a water bottle on his head. Federer backs up, raises his racket, and fires a tennis ball straight at it. The bottle shoots from the crewmember’s head to the ground, much to the delight and surprise of all the backstage onlookers.

Although staged, the clip appears to be amateurly shot, shrewdly setting up Gillette for a viral marketing campaign. Audiences are encouraged to ask: Was it real? The clip attests to its own realism first and foremost through use of the long take. A cut would diminish the seemingly impromptu transition from a backstage chat into Federer’s trick (which, interestingly, he performs after backing up onto the professional set). Second, the virtuosity of the camera operator is downplayed to sell the scene as being haphazardly captured. The same tactic is used in movies like The Blair Witch Project and Cloverfield, which affect an amateur, hand-held style to blur the line between realism and their fictions. Everything that appears onscreen seems to have been unchoreographed. The camera jostles around, not confident about what exactly it should be shooting. Federer actually says to the “amateur” camera crew, “You guys want to maybe get out of the way a bit.” The line emphasizes the continuous physical dimensions of the space. It also indicates that the operators have no idea what will unfold next—as if to say to them and the audience, “Get ready, the contingent is about to happen!” The Gillette ad even
shows professional technical equipment in the background to verify this is not the camera package that the operator is using to shoot the scene. So expertly naive is the shot that the camera barely pans in time to catch Federer’s serve hitting the bottle. He performs the trick again so that the camera can better position itself now that the operator supposedly knows what will happen. That way everyone can better see the “true virtuosity” on display, namely Federer’s serve.45

The rhythm of these clips is equally important. The pacing must be slack at times. There must be lulls in the movement between the arresting feats r surprises. Federer, for example, prattles at a table before deciding to perform his trick. The bully prods his prey before the slam. Charlie considers putting his finger in his brother’s mouth. The hand above the spider tries to work up enough courage to crush it. There is excess and surplus and refuse in the pacing of these takes, and for that, they are sometimes more shocking than their Hollywood counterparts. The slack allows them to perform more of an Aristotelian peripety, establishing a secure pattern only to overturn it with a sudden jolt.46

Not only are the subjects of long takes caught in this rise and fall, but so often also are the operators. The camera operators of the Gillette ad and the “Kill it” clip both exclaim and gasp in surprise at the scene they capture. The shooter of the “Victim” video eggs the fight on. It is not uncommon to see operators questioning, laughing, or taunting the subjects themselves. They enact the role of
both spectator and shooter, encouraging viewers to project themselves into their position. This is not the restricted art of the auteur. This is not Hitchcock crafting a message for his audience. The video take, rather, is constructed around interchangeable roles. Operator stands in for audience and the audience is invited to conceive of themselves in the place of the operator. The only thing separating the two is the singularity of the event itself.

**Crises in Time**

Kracauer suggests that film’s “miracle of movement” speaks to a particularly modern crisis. There exists a “hunger for life.” It has been created, first, by a “disintegration of beliefs and cultural traditions which had established a set of norms, affinities, and values for the individual to live by.” Furthermore, he finds society overly analytical, “which means among other things that with modern man abstract thought tends to get the better of concrete experience.” Finally, he believes there is:

> an increasing difficulty for the individual to account for the forces, mechanisms, and processes that shape the modern world, including his own destiny. The world has grown so complex, politically and otherwise, that it can no longer be simplified. Any effect seems separated from its manifold possible causes....So we look for compensations. And film, it
appears, is apt to afford temporary relief....There the frustrated may turn into the kings of creation. 47

In her reading of Kracauer, Mary Ann Doane adds a fourth cause: “the negation of unorganized, unstructured time.” 48 She argues that with the rise of industrial society, time has been made scientific, broken down to be measured, arranged, evaluated—much like the logic of Marey’s and Muybridge’s earliest experiments.

The camera both replays and responds to the conditions of this crisis. It captures the “contradictory desire,” on the one hand, “of archiving the present,” to ensure its security and legibility, and, on the other, of seeing contingency destroy that same dominant order. 49 These dueling “times” are related to Hansen’s description of the camera’s oppositional activities: its ability to index material figures and its susceptibility to erratic disfigurement. The camera is both salt and salve, it “embalms time”—as Bazin has said— and, simultaneously, it phases to life this deadened state of stasis. It does so with the promise of the next moment, or a suggestion that a surprise potentially awaits in the next frame. It turns on the coming attraction. 50 Thus, Doane concludes that “contingency is both lure and threat....The embarrassment of contingency is that it is everywhere and that it everywhere poses the threat of an evacuation of meaning.” 51

We can see this in the long take video clips referenced above. They all follow through on their threat—they deliver their mutinies of standardized time.
The exploding spider also explodes our expectations and pre-formed meanings (that the spider will be flattened and die). We can see the lure and the threat even in videos that don’t include exploding spiders or unexpected body slams. In many clips a phasal event never arrives, the rebellion never forms, and the status quo of the archive persists. A child runs in circles on the grass. There is nothing remarkable about his gait, about his persistence, about his speed, or sounds, or route. He runs as hundreds of other children have run—forgettable in his play. Still the dual rhythm takes hold. Still there is the threat of the contingent even if it never arrives. What will he do next? Will he fall? Will he giggle?

The rhythms of the lure and the threat even apply to the long takes that are streamed but never recorded, like video chats with friends, family members, and lovers. Webcams still index the present moment, even if it can no longer be retrieved. In coming to the screen, the moment has been transcribed. The camera has represented it for viewing. The surface of the image is its insurance of indexicality—of being preserved for another’s gaze. A colleague, a girlfriend, a grandmother has been written and delivered. Our presence has as well, in a little box on the corner of the screen which relays our own video feed back to us. Our mutual transformations into each successive moment have been witnessed and recorded. Together both parties, facing their separate cameras can say, “Yes! We have been alive.”
Deathways

“I must now tell you my thoughts about death (and I leave my skeptical readers free to wonder what this has to do with cinema).” —Pasolini

As Pasolini suggests with his choice of the Zapruder film, the long take itself—as a rhythm and visual style—is intimately bound to intimations of life and death. Pasolini sees this in the intersequence cuts that begin and end a take. Punning on the word *obiettivo*—which denotes simultaneously the camera’s “lens,” its “object,” and its “aim”—Pasolini declares that the final cut of a clip brings meaning to a sequence, much like death brings meaning to a life. Before the cut, multiplicities can still accumulate. Only the finality of a break can quiet the threat of contingency. Only in the end might we look back at what was made and attempt to interpret it, make it re-inhabitable for meaning. For Pasolini, the cut as a death ratifies the index of the archive.

Doane contrasts Pasolini’s handling of death with Charles Pierce’s conclusion that death is the “domination of chance.” Pierce believes death is the ultimate mark of contingency—there can be nothing more untamable than its annihilative cut. She concludes that the camera “embodies both” of these views. However she sides more with Pierce, arguing that “death and the contingent have something in common insofar as both are often situated as that which is
unassimilable to meaning. Death would seem to mark the insistence and intractability of the real in representation.” Death serves as the mark that disfigures the archival mechanism of the camera. It destroys ultimately the standardizations of industrial time.

Long take videos of “fails” and “feats” demonstrate this well. In a “fail” take a skateboarder would slide down the handrail of an outdoor staircase and topple over midway onto his spine. In a “feat” take he would slide down the rail fully and land squarely on his skateboard. Fail takes mean that cars crash, people trip, jumps are missed, or things explode. Feat takes celebrate animals that do tricks, people who work wonders, jumps that are stuck, and bottles that are knocked off heads with tennis balls. The videos above of the bully, Charlie, and the spider are all fail videos. Things do not go according to plan. On the other hand, “The Evolution of Dance,” the video that once had the honor of being YouTube’s most-watched video, is a feat: a comedian combines dozens of different dance styles into a single continuous routine. In the former contingency strikes. In the latter it is mastered. Both are related to death.

When we capture feats and failures with the long take, we are phasing rhythms between the archive and chance, the familiar and the unfamiliar, the living and the dead. It is not so bizarre to claim that we might be thinking about death in such a mediated and indirect fashion. Many have made the connection
between the camera and the grave, and David Sudnow reminds us that the best way to examine our attitudes towards mortality is not always the study our reactions to death itself. There are other “deathways”—a term anthropologists Richard Huntington and Peter Metcalf use to describe the many rituals surrounding the dead, of which the mortuary and the funeral are only small, relatively standardized pieces of a more unwieldy range of practices. In many cultures, death is not instantaneous. It lingers. It returns. It is represented and re-represented in rituals. Death is interactive.

The long takes of digital videos certainly do not interact with death as explicitly as Huntington and Metcalf have found in other cultures. However, that does not preclude the long take from being a practice through which a deathway is performed and shared. The camera becomes a way, not so much to mourn, as to probe at Kracauer’s “hunger for life.” In Doane’s words, the camera’s “art emerges as a somewhat anomalous category...it mediates between structure and event, design and accident.” Disassociating and re-associating us to time, the long take mediates our encounters with contingency—and with it, the emergence and evacuation of meaning, death being the most traumatic.

By mediating these different rhythms, the camera enables its users to become like the Neapolitans in Italo Pardo’s study of mourning in the Mediterranean city. Neapolitans, Pardo claims, maintain a “flexible negotiation
rather than sharp opposition” between life and death, opening ambiguous spaces in which to communally recast meanings of death. Similarly, camera practices with the long take fashion ways to re-compose expectations and habits of living. By either showcasing masterful feats or exposing random failures, the long take affords a more plastic view of the present tense. Whether shooting or viewing them, we participate more in the mediation of our time.

NOTES


2 Ibid., 5.

3 Martin Scorsese, Goodfellas (Burbank, CA: Warner Bros., 1990), DVD. One of many homages to the steadicam shot can be seen in Doug Liman, Swingers (New York: Miramax, 1997), DVD.


5 Here, even in these earliest experiment, death and the camera are closely aligned.


7 Sergei Eisenstein, Film Form: Essays in Film Theory (1949 reprint; Orlando: Harcourt, 1969), 37–38.


Marco Calavita, “‘MTV Aesthetics’ at the Movies: Interrogating a Film Criticism Fallacy,” *Journal of Film and Video* 59, no. 3 (October 1, 2007): 15.


Another of Bordwell’s conclusions from this data has been much more controversial. He has been pilloried by Slavoj Žižek for claiming that ASL and techniques like the “shot/reverse shot” indicate the influence of “contingent universals,” or evolving global capabilities in how an image is viewed. Contingent Universals is laid out in David Bordwell, *Post-Theory: Reconstructing Film Studies* (Univ of Wisconsin Press, 1996), 94. For the counterargument see Slavoj Zizek, ed., *The Fright of Real Tears: Krzysztof Kieslowski Between Theory and Post-theory* (British Film Institute, 2001). Bordwell’s rebuttal was issued online as “Slavoj Žižek: Say Anything,” David Bordwell’s Website on Cinema,” April 2005, http://www.davidbordwell.net/essays/zizek.php.


Andrey Tarkovsky, *Solaris* (Criterion, 1972), DVD.

Brian Henderson, "The Long Take," *Film Comment*, vol. 7, no. 2 (Summer 1971), 11.


26 Brian Henderson, “Two Types of Film Theory,” *Film Quarterly* 24, no. 3 (Spring 1971): 33–42.


29 Ibid., 49-50.


33 Stevens, “Light-at-Night.”


36 Ibid., 71.


38 Kracauer, *Theory of Film*, 170.


Le Fanu, “Metaphysics.”


Ibid., 168–170. Interestingly, Kracauer anoints us—the spectators—as the “kings of creation” before we even had picked up the camera for ourselves. He writes before the long take’s virtuosity had been replaced by an amateur operator, before our video clips re-embodied spectators as operators themselves.

Mary Ann Doane, The Emergence of Cinematic Time: Modernity, Contingency, the Archive (Cambridge: Harvard University Press, 2002), 162.

Ibid., 82.

Bazin, What Is, 14.

Doane, Emergence, 144.


Ibid., 106–7.

Ibid., 145.


CHAPTER 5

VIRTUAL CAMS
SURROGATE VISION AND THIRD NATURE

The virtual cam is often not considered a camera at all. As the optical eye that orientates a three-dimensional perspective in a video game, it is designed to be unobtrusive. Its “black box” cannot be viewed or held. It fuses itself entirely with its rendering of a graphical landscape. Game designers and players are certainly aware of its importance, but those who approach digital environments as procedural systems tend to miss the virtual cam’s use as a performative tool. The result is that the agency of the virtual cam’s operators—the players themselves—is often overlooked along with it.

My contention is that the virtual cam is a crucial apparatus in shaping the future of spatial interactivity because of its construction of a “surrogate vision.” This surrogate vision mediates players’ identification with their avatar, their understanding of game mechanics, and their engagement with both digital and physical landscapes. Surrogate vision is critical to understanding how players are simultaneously trapped and set free in natures not entirely of their own making.
Shooters

Although the long take has been the primary style of video games since Pac-Man began gobbling up power pellets without a cut or an edit, the virtual cam only began to play a role in orchestrating these sequences with the advent of three-dimensional graphics. The first-person shooter, *Doom*, for example, gave players control of a virtual camera to guide an avatar through corridors of monsters. The camera acted all the while as the player’s “eyes.”¹ The long take and virtual cam are also married in third-person perspectives, such as in the “sandbox” games of the *Grand Theft Auto* series or the virtual “worlds” of massive multiplayer online games (MMOs) like *Star Wars: Old Republic.*²

In fact, Alexander Galloway claims that it is video games’ negation of montage that gives them their sense of unrestricted movement. He explains that “traditional filmmaking almost never requires the construction of full spaces.” Games, on the other hand, leverage the opportunities of space and make it “actionable.”³ The long take of the virtual cam is essential to providing both this sense of fullness (a player can literally look in any direction) and actionable space (the continuity of perspective allows players to maintain an easy sense of direction with which to navigate). Galloway uses the label “subjective shot” to categorize
the type of long take that first-person shooters employ. As opposed to the POV shot in cinema that approximates a person’s vision, the subjective shot applies “when the camera shows what the actual eyes of a character would see.”4 Galloway provides many examples, such as the Terminator’s red-tinged augmented vision, or even the gauze that covers the camera in the opening sequences of The Insider, replicating Al Pacino’s blindfolded vision.5 Games accelerate this subjective effect with visual and auditory queues, such as when the HUD, or heads-up-display, will turn red to indicate that a character is wounded. Virtual subjective shots simulate not only physical vision but also a psychological state of the avatar.

Although Galloway only addresses first-person games, the trailing cameras of third-person perspectives similarly invite the player to identify with the avatar. Instead of being subjective shots of vision, they orchestrate a subjective shot of the body. The camera beckons the player to attend to details like the avatar’s feet placement. For example, when Nathan Drake, the protagonist of the Uncharted series, prepares to jump across a ravine, players have to account for the position of his boots in relation to the cliff edge. The same applies to the jut of his shoulders and knees behind a crate when he takes cover from gunfire.6 Additionally, third-person subjective shots also render psychological effects: whenever Drake takes damage the colors of the screen desaturate. Color loses its vibrancy, just as we are
meant to take notice of Drake’s depleting energy. The response is intended to be one of empathy—Drake is like us and we are like Drake.

With this effect of self-identification, the subjective shot of video games departs from cinematic convention. Galloway lays out how the subjective shot is so often used in slasher films to represent the perspective of the killer, the monster, or whatever antagonist is pursuing the hero. The cinematic convention is to put viewers in the role of the most threatening character—like, Jason, from the *Friday the 13th* series, the uncontrollable force of destruction and bringer of death. Thus, it suspends the audience in a state of anxiety because of their impotence to intervene. They are entrapped in a horrific mask of vision.

The virtual cam, however, inverts this logic. Its subjective shot yields control. It embodies the player’s agency in the landscape. This is the last critical component distinguishing the subjective shot of the film camera from the virtual cam: the players become the operator-observers of vision. The terminology Roland Barthes employs in *Camera Lucida* might be of help in describing this notion. He classifies three activities involved in the production of images. There is: the *operator*, the person handling the instrument of the camera; the *spectrum*, the subject of the shot (or, to put it in Lacanian terms, the object of the camera’s gaze); and the *spectator*, the person who views the image produced. Video games illustrate the manner in which these roles merge into a hybrid activity. The player
is operator, manipulating the camera through a given interface (often a game controller or keyboard). At the same time, the player is spectator, observing and processing the images composed on the screen. And yet still, the player, as on-screen avatar becomes a kind of spectrum, a locus of the camera’s gaze.

In virtual environments, hybrid re-embodiment produces a fourth category—the surrogate. It dissolves the boundaries among artists, audiences, and actors. What results is a level of agency and complicity in optical media that has no “analog.”

Surrogacy in video games is controlled through the operation of the virtual cam. Whereas the cinema restricts its spectator from handling the camera, video games employ operation as a primary activity. Players, positioning the eye of the camera, assume control of the subjective shot. In so doing, they modify the way their avatars and their gameworlds visually come to presence. This is one of the reasons the activity of “shooting” has become so important to video games. Guns, crosshairs, and targets incentivize the virtual cam’s operation. Shooting shifts focus from the avatar to a secondary spectrum in the landscape. As the player-operator directs the virtual cam from one object to the next, the space of the game becomes actionable. The player’s object becomes the surrogate’s object. It also becomes the object of any other spectator watching the game. This alignment of
*spectra* constructs a surrogate vision. It is the mechanic and mediator for interactivity between player and digital environment.

Many games are aware of the camera’s pivotal role in orchestrating these activities. While the “shooting” of surrogate vision is often masked with metaphors of guns and ammo, it can just as easily be replaced by a more literal representation—namely, a photographic camera. Rockstar’s *Bully* enrolls the avatar in a photography class and structures progression around the player completing class assignments. Subjective shots through the in-game camera snap and make prints of various activities around campus. In * Bioshock* avatars are given a virtual knockoff of Kodak’s vintage Brownie camera. With it they take research photographs of various adversaries, earning power-ups for identifying enemy weaknesses. Even more literally, *Beyond Good & Evil* casts players as the photojournalist Jade, who must gather photographic evidence of monstrous activities and deliver layouts of an alien invasion. Last but not least, there is the main weapon of *Fatal Frame*’s protagonist—a portable device called the Camera Obscura. In this survival-horror game, only through the Camera Obscura can players view the specters that threaten them. And in a clever allusion to spiritualist photography, it is the Camera Obscura that “shoots” and traps these spirits.⁹
By bringing surrogate vision to the foreground and letting players photograph their environment with still images, these games remediate the indexicality of the mechanical camera. They create an archive in a digital environment. They capture contingent encounters instigated by the player’s interactions with virtual objects. But this raises the question: What is being called into being by these virtual cams?

**Procedural Places**

Whether it is a rifle or a camera—no matter how photorealistic the gun fights seem in *Call of Duty,* or no matter how gripping the battlescene footage appears in a game like *Warco* (in which players take up the video camera of an embedded photojournalist)—all of these targets and objects remain scripted. They are rule-based, arising from a tightly controlled notational system.

Some theorists, mainly working from film studies, use this fact to dispute any connection between the rhythms of the virtual cam’s surrogate vision and the long takes of more conventional cameras. David Rodowick calls our attention to the fundamental distinction of “code.” According to him, the virtual long take, because it is built algorithmically, is composed from “a combination of logically discrete elements.” The parts are autonomous; the lines of programming script form digital elements that can be individually manipulated. They function as
independent objects. The dust that an avatar’s foot kicks up, the weapon that an enemy drops, the clouds that track in the sky are each individuated in the game world. These objects, Rodowick claims, are exclusive bits of data that appear conglomerated but are no more connected to each other than they are to the player’s physical hand. It would be improper, under such terms, to speak of the archive or contingency of the long take because there is no continuity or materiality being referenced or threatened. Rodowick states, “What looks photographically ‘real’ has actually shed its indexical or casual qualities....When photography becomes simulation, it yields to a new imaginary that is unconstrained by causal processes; creation from physical reality gives way to the composition of ‘elastic’ reality.” Virtual objects are pliable bits of light because they have shed their reference to physical matter. And while this flexibility might sound appealing, Rodowick sees in it a great loss: with the virtual cam, there is “no longer continuity of space and movement.” In fact, Rodowick believes “nothing moves, nothing endures in a digitally composed world. The impression of movement is really just an impression—the numerical rotation and transformation of geometrical elements.” The illusion that is created, therefore, constructs itself through “montage and combination”— incessantly fast juxtapositions in disguise as the long take.
Steven Shaviro agrees with Rodowick’s ontology for the virtual cam, contends that the virtual long takes in video games have influenced the non-continuity of modern action films by making “visceral involvement” a goal of cinema. The two media achieve those ends in a completely different fashion: games through “processual and combinatorial” interactions, films through “A.D.D. style montage.”

Objections could be raised to Rodowick’s comments on multiple levels, not the least of which is the assumption that movement in physical formats is in any way more “real” than that of virtual environments. Nothing in either format actually “moves.” But in many ways Rodowick and Shaviro are justified in drawing attention to the discreteness of these virtual objects, reminding us of their separateness, their autonomy. Still, to deny any kind of emergent coherence to these parts—to claim that their assemblages have no cumulative effect as a virtual setting for our activities—would be to underestimate the power of surrogate vision and the agency of the player.

One can think of this interchange operating at the levels of surfaces and rules. Jesper Juul explains that while the idea of total immersion in the fictions of virtual settings has largely been discarded as a myth of game design, one cannot simply explain away a game’s interactivity as an execution of a program. Juul’s answer lies in a “half-real,” two-level partition between visual representation and
the rules—the “half-real” being the player’s mediation between the two. Espen Aarseth injects into this conversation the importance of space. He proposes a “classification of computer games...based on how they represent—or perhaps, implement—space.” Representation, again, constitutes one level on a dyadic structure, the other level being “rule-based.” There are procedures, and there are representations that come to a surface through those procedures. Aarseth advises this these forms technically do not constitute a “space” but rather a “place,” which reductively fuses rules and surfaces as “a means to achieve the object of gameplay.” This corroborates Rodowick’s definition of games as “teleological,” and essentially numerical transformations. Code provides the impression of movement through virtual space in order to achieve objectives. The rules, in this configuration, take precedence over visual representation.

The trend continues with Georgia McGregor, who adds onto Aarseth’s space/place. She claims that video games discard most of what they mimic in the real world and, in doing so, are entirely architectural. Even those landscapes that attempt to mimic wilderness she sees divided into rooms in which different categories of activities are arranged. Her reading is immediately apparent in one of the games she discusses, World of Warcraft (WoW), which separates its lands into clearly demarcated zones for different levels of play, zones which themselves are subdivided into smaller sections for particular types of quests, searches, and...
purchases. In similar ways the rooms of our homes compartmentalize and bracket our activities: if we are fortunate enough to afford the separation, we will eat in one room, sleep in other, and relieve ourselves in yet a third. According to McGregor, these procedural scripts override any superficial representation (interior design) with which the rooms might be decorated.

The predominance of architectural rules in the governance of digital landscapes comes to a head in Ian Bogost’s procedural rhetorics. As a designer and theorist, he is particularly attuned to notational systems of games, concluding that their persuasive power essentially lies within their blueprint. Bogost takes up Janet Murray’s subordination of “procedurality” to narrative, only to flip the value signs. In his estimation, “procedural expression must entail symbol manipulation.” The rules oversee “the construction and interpretation of a symbolic system that governs human thought and action.”23 Procedurality “constructs,” “interprets,” and “manipulates,” both at the level of representation and at the level of player interactions with the representation. Procedurality’s power largely lies in choosing which representations to render when. In this way, it consumes interactivity and marginalizes a player’s agency. Bogost states as much when he writes that “the total number and credibility of user actions is not necessarily important; rather, the relevance of the interaction in the context of the representational goals of the system is paramount.”24 The essence of interactivity
lies not within players’ actions, but in the framing of those actions according to
the markers for success built by the procedures.

The rhetoric of procedurality can be conceived as a razor-thin isosceles
triangle. Power is stretched between the designer and the design (the design being
understood here as the procedures which model symbolic representations). The
role of the audience, to whom all of the messages are directed, remains below the
surface, with very little agency, barely registering as a point on the triangle at all.
The important questions do not lie in the way forms are rendered, projected or
used by players. Any agency or activity in the land lies in its schematics.

Juul somewhat undermines these assertions about games as architecture
and procedural systems when he points out the ability of space to conflate the
authority of rules and representation. Spaces are where games are at their least
“themable”—when the representations of the rules are unique and resist
replacement. An example might be an early scene in *Uncharted 2* when Drake is
cought at the base of a train that is dangling off a cliff. In a classic set piece of
action films, he must ward off an attacker while climbing to safety before the
entire train plummets to an explosive end. As the player struggles to escape the
deathtrap, it would be difficult to imagine these rules recast in a different space.
Of course, the train could be a different color. Perhaps it could be bus or a sinking
ship, but at some point it must be granted that these rules are rather specifically
defined by their fictional setting. Therefore, in Juul’s estimation, the experience of a game world is better conceived as architecture overlapping interior design. One can separate the rules from the representations, but there would be little value in doing so. A merger occurs across the lines of code and the symbols of visual surfaces.

**Birth Circles**

A step away from the teleology of rules is a step back to the surrogate interactivity of the player. It helps explain the myriad of ways in which the virtual cam as a tool invites us to construct divergent meanings from the digital bits and scripts of light that come into view.

Bonnie Nardi addresses these mixed realities in her ethnographic study of *WOW, My Life as a Night Elf Priest*. She claims that game applications make compelling appeals for the investment of human activity in virtual artifacts, in her case, her avatar, in which she invested numerous hours and substantial resources of emotional energy. According to Nardi, visual performativity is a necessary component of space.²⁶ Players’ own direction of a game’s surrogate vision—their own passage through an architectural world—creates an autographic experience, giving birth to individually resonate meanings unique to a particular digital time and space.
The starting zones of WoW prove a fertile testing ground of these limits. If Juul is correct in believing that spaces most closely unite the rules to their representations, and if the virtual cam coordinates a surrogate vision, then starting zones where characters are “born” is the best place to see how all three interact.

In WoW after choosing a race and customizing an avatar, players log into a server. There they are introduced to the landscape through a virtual cam flyover—a separate one for each racial starting zone. The accompanying narration relates a snippet history of the player’s chosen race and plants vague objectives through a tale of defending or reclaiming a homeland from or against other races. All the while, the flyover camera twists and turns through minarets and trees, across grasslands and gorges, until it tracks up to the back of the player’s avatar, who is standing in an open clearing, facing another figure—a quest-giver, marked with a bright yellow exclamation point over his or her head. There is a short fade-to-black as the virtual cam shifts from flyover to subjective shot, an attempt to smooth over the otherwise jolting handing-over of authorship, from designer to player. Galloway describes a similar scene in Metroid Prime:

...the transition from the third person to first person is accomplished not with an edit but with a swooping fly-through shot where the camera, in third person, curves around to the rear of the player character and then
tracks forward, swiftly passing through the back of the cranium to fuse instantly the first-person optics of the character with the first-person optics of the player.27

Yet as Galloway suggests, there is more to this than the mere avoidance of a cut. Indeed, each racial starting zone in WoW is an opportunity for game designers to cast rules and fiction alike into the landscape. The opening of the game is meant to reinforce this point—the story will be told in large part through the characters’ relationship to the land. The flyover of the prologue joins landscape (the visual model) to a history (the oral voice over) to a body (the soon-to-be surrogate avatar). When we touch the keys, motion with the mouse, we are puppeteers, taking up a new body in the opening movements of a performance. The curtain is drawn. The screen goes black for only a moment. When the lights come up again, spirit and body have joined. Our avatar is our own.

To heighten this effect, the game bars control of the virtual cam in the character creation and customization screen. There is no surrogate vision. A player may only rotate the figure and zoom, like a three-dimensional product for sale. Only when the avatar arrives in the landscape, where targets may be found among the rocks and trees, only then does surrogate vision take hold.

Moreover, it is no mistake that the virtual cam’s surrogacy is first bestowed upon the player within a circle. The physical point of arrival for every race in
every starting zone conforms to this shape—some are drawn in the dirt, others in a clearing of snow or grass. It is a literal and figurative magic circle, separating the playworld from the “real world.” The effect on the player is meant to be profound—a uterine passage, with the flyover being the forceful contraction into a new world. There is even a helpful quest-giver, like a midwife, beckoning every newborn avatar out of still birth.

The wide-eyed awakening of each character brings with it a unique receptivity to the landscape. Newcomers need some degree of guidance concerning the rules of their surrogate vision. Here the persuasiveness of procedurality must be simultaneously at its strongest and its most subtle. When design becomes too intrusive—with tooltips, onscreen menus, excessively helpful non-player characters, or splash screens of instructions—the initial wonder of being transplanted into a foreign landscape and being able to explore it in a remediated body quickly evaporates.

Luckily, the nuance of designing for usability has evolved over the years: the thick gaming manuals of the 1980s were followed by the mandatory in-game tutorial of the 1990s, which in turn gave way to orientations driven by clever narrative hooks and spatial queues. WoW uses the logic of pens and pastures. The starting zones are usually enclosed, allowing only the feeblest of beasts to roam. Helpful non-player characters (NPCs) are plainly obvious, and the land
divides neatly between wilderness—in which monsters can be slain—and dwellings, where trade and training can be found. In contrast, at higher levels this distinction is not always so easy to make: NPCs are tucked high atop mountains and villages are populated with foreign races whose allegiances are uncertain.

Other open-world systems use narrative events along with pen and pasture logic to mask early exercises in surrogate vision. Usually this begins with a “trying-on” of a subjective shot—an initial period of simply looking at the landscape through a new avatar body. Interactive features—including mobility itself—are restricted to let the player focus on relationality within a new world. *Fallout III* accomplishes this orientation by beginning literally at the avatar’s birth. As an infant, the avatar is passed around a hospital room; all the player can do is redirect the baby’s gaze—left and right, up and down. Similarly, in the medieval fantasy *Skyrim*, avatars begin as prisoners on a wagon ride to their own execution. In this first scene, the player can only pivot the surrogate’s view to take in the passing countryside and the conversations of the other prisoners in the cart.

*Batman: Arkham City* opens almost identically, with Bruce Wayne bound and under escort through a dystopian prison-setting. Wayne is restrained not only by manacles but also by the absence of his famous batsuit. He is allowed to move forward and to look around. Each of these scenarios uses narrative events and an emphasis of surrogate vision to gently corral players into a relationship with
their avatar and the game world. Surfaces and surrogacy in the world come first. Then, the player is introduced to rulesets.

Eventually these games expose core mechanics as they expand to ever-broader and more open vistas. After *Fallout 3* constricts its open world to the easily mappable and confined corridors of an underground bunker, it stages a breakout and lets its players wander into the charred wasteland of the D.C. metro area. Bruce Wayne, likewise, breaks his shackles and fights his way to the Gotham’s skyline where he finds his famous utility belt. The rest of the game is all gliding and bat-cabling over city blocks.

Even in non-open-world systems, in which the entire landscape cannot be explored, surrogate vision is corralled from chutes to more open pens. *Uncharted 2*, for example, uses its “train” sequence to construct a very narrow route through game content (there is usually only one way out of each passenger car). This in turn forces the player to coordinate certain views of the virtual cam with specific game mechanics. Players learn how to make surrogate vision actionable through the combination of fictional danger and procedural safety in the dangling passenger train. Only after beating this sequence will the avenues for interactivity widen.

All these games endeavor to strike a balance between agency and aid. As Eric Heyot and Edward Wesp note, geography in a game like *WoW* is progress,
and it is never more open to players than at that moment of still birth. At the same time, it is never so closed. To a low-level player, the entire game world beyond the pasture of the starting zone is forbidding, promising death with every encounter. The more the word is explored, the more of the design that is experienced, the more the game closes off places of possibility and “sites of future progress.”

30 That moment before the first step is taken, when players pan their view, or take their first step, or jump and jump and jump (as some do)—that is the final moment when designers will control a player’s view of the world. Each tap of the finger or gesture with the mouse will take avatars in directions that become exponentially more unpredictable. At the moment of first spawning, however, an entire geography awaits. Progress and the singular experience of the avatar must be charted, and landscape is the great physical force with and against which players must contend.

**Labyrinths**

In the nineteenth century, when public parks gained popularity with the boon of urban planning, there was great interest in making recreational spaces both “didactic” and “democratic”; David Schuyler explains how the renown park-planner Fredrick Law Olmsted and his associates subscribed to the notion “that the physical spaces humans occupy influence their patterns of behavior. Thus the
question...was not merely an aesthetic one, but involved a statement of political and social ideology.” Since that time, it has become commonplace for art historians and cultural theorists to discuss the projection of nationalisms into the landscape. In fact, Ginger Strand reminds us that we have never stopped re-composing the land: “Cicero called it ‘second nature,’ nature transformed by the human hand. In our age, second nature is all there is; ‘first nature’ has gone AWOL.”

Her words are particularly true for digital environments. Game worlds have become the ideal optical medium in which to project our ideologies of landscape. Despite appearances of being wild and untamed, digital environments are inescapably manicured spaces. They have been thoroughly shaped by programmers’ desires.

Strand, who wrote a history of the taming of Niagara Falls, concludes that “no one believes in landscape anymore.” Landscape—be it engineered or uninhabited—no longer holds any magic: “Power and politics trail in landscape’s wake, because land itself is never un-ideological.” It has been overwritten by our own aspirations and agendas. This holds especially true for virtual lands. So pliant is digital light that we could speak of video games being composed in a hyperbolized second nature, or as a second nature+. They are proceduralized representations of physical lands that have themselves been subjected to ages of
proceduralization and manipulation. Digital spaces are, thus, thoroughly didactic. They exist, as Olmsted hoped, to encourage a specific pattern of play and preserve a specific social order. The symbols have been legislated. The signs are “formless,” just as Mitch Rose notes about physical landscapes, invoking Georges Bastille’s language to describe how a space might “have no meaning and only tasks.”

It is my suspicion that—given the immense capacities of game designers, the intricacies of code, the processing power of computer systems, and the clarity of procedural rhetoric—the field of game studies, even more than geography, is prone to formlessness. Gameworlds seem like very determined places. Not only is the study of the land made formless; so are understandings of player performances. In such an overdetermined setting, a “trained incapacity” takes hold: an inability to speak about excess, about a player’s performance that spills over expected patterns, or enacts the procedures in unforeseen, startling ways.

What must be accounted for are not only the different activities of individuals in the landscape, but also their particular ways of seeing differences in the landscape. Art critics have tried to address this phenomenon. In The Languages of Landscape, Mark Roskill describes the viewer’s observation of Poussin paintings as a struggle to reconcile “elements of the natural world and what has been placed there, the contribution of which is left incompletely
specified.” Unlike Poussin paintings, most the elements of a game word have been placed, usually without any direct reference to the natural world. How does the viewer see the differences among those elements?

For Roskill the image is composed in the viewer’s “habits of attention” and “performed expectations.” These modes of seeing are helpful in clarifying the role of surrogate vision in game worlds. First, “performed expectations” can demonstrate the conventions of surrogate vision that are specific to a title; and those that carry across genres. For instance, an expectation particular to the gaming title Assassin’s Creed concerns the avatar’s body: if placed in close proximity to other NPCs, it will be camouflaged. A performed expectation that carries across three-dimensional genres involves focus: the object closest to the center of the screen (as opposed to peripheral vision) will most often be selected as a target.37

Additionally, “habits of attention” is useful in recognizing the virtual cam’s use of overlays to redefine a player’s expectations of landscapes. The overlay—a two-dimensional information design—is coordinated with the user’s operation of the virtual cam. The information spreads out transparently over surrogate vision to make visible, like a decoder ring, the notational system at work underneath the representations of the gameworld. It might properly be called the next generation tooltip. Traditionally tooltips, like the one implemented in WoW, launch a fixed
pop-up window on the HUD, autonomous from surrogate vision. However, the overlay acts as a lens or gel, blending itself into the subjective shot.

Usually this mechanic is couched in a bit of fiction to lessen its potentially bothersome intrusion into the player’s identification with the gameworld. The best example comes from “Detective Vision,” the overlay in Batman: Arkham City. When the player switches it on, the screen is washed in a monochromatic palette. The exceptions are enemies and actionable objects formerly hidden in the environment, like breakable walls or accessible air duct coverings. These objects-of-interest sharply stand out, usually through the use of vivid colors and a form of x-ray modeling. Furthermore, any object-of-interest brought into the center of the screen will usually generate an informational tool tip. However, these tooltips are still dependent on the spectrum of the camera and can be manipulated through surrogate vision. Pan the virtual cam and a pop-up detailing one enemy’s weapon will shift to another explaining the function of an electrical generator built into the wall.

The overlay is a noteworthy development in game design because it situates operation of the virtual cam as an intermediary among the system rules, visual representations, and the user’s surrogate vision. It calls the procedurality of the system onto screen, yet it still finds a skin or mask for these procedures—it does not simply expose the code. At the same time it avoids further coralling the
player into particular activities with surrogate vision. It fully respects the kind of
divergence and digression Charles Harrison contends are part of viewing any
landscape painting: its “effect,” he explains “may rather derive from some
coincidence between thought and making that is a derogation both of the
protocols of viewing and of the supposed significance of latent content.” Thus it
would be mistaken to see the development of the overlay as further legislation of
vision. Instead, the overlay demonstrates alternatives to the habits that players
might not even recognize. It calls out to the unseen. It points to the forgotten. It
welcomes chance combinations.

Further examples of the overlay can be found in many applications of
augmented reality. The popular Star Walk software application uses the built-in
camera of hand-held devices to project an astronomical overlay across the sky.
Point a camera at clouds or stars and it will reveal the names of planets, the shapes
of constellations, and their positions in the night sky. One could focus certainly
on the heightened second nature of these applications—how they excessively map
natural landscapes and use procedural scripts to encourage specific kinds of
viewing. Star Walk’s iconic illustrations of constellations, for instance, discourage
study of those stars that are not fortunate to be named after a mythic figure or
carry an appealing graphic. But this would neglect the third nature that these
virtual cams bring into view—an opportunity to think outside our habits of seeing
and expose ourselves to new coincidences of reflecting, exploring, and interacting with the landscape.

Rather than contributing to the determination of virtual and physical worlds, one might better see overlays as encouraging the kind of indeterminacy Rose finds in Bastille’s labyrinth. Rose prescribes it to cultural geographers who cannot see beyond the “formless” state of the land:

It is a space that can never be fully accounted for because we are always creating it....Its presence is not engendered by features in the landscape itself but by the various ways it is called forth and put to task. In this sense the only thing that landscape ever is is the practices that make it relevant.39 (2002, 461-2)

The labyrinth cannot be enframed by a server, by code, or by any graphics engine. Its meaning is never latent because it is always in a state of becoming. Rules give it shape but that shape slips from grasp the moment we bring the landscape into use.

The labyrinth does not call for the abandonment of procedural study, nor does it undermine every discussion of representation. It does, however, demand that our worlds be populated by the mystery of coincidence and the indeterminate relationality. It allows for a space where a player to be emotionally affected by a virtual fawn skittering across a stream or the shape of Pegasus taking form across an overlay of the night sky. The labyrinth accentuates bodies—avatar, player, and virtual object alike—and reminds us that their agencies emerge when the landscape is called into practice. The resulting interactivity remains in a maze,
one whose ground can never be mapped and whose shifting can never be stabilized.

Here we recognize we are trapped in the magic of landscape.

NOTES

1 *Doom*, Id Software (1993).

2 *Star Wars: The Old Republic*, Bioware (Electronic Arts, 2011).


4 Ibid., 41.

5 Ibid. 50-51.

6 *Uncharted: Drakes Fortune*, Naughty Dog (Sony, 2009).

7 Galloway, *Gaming*, 51.


11 Rodowick, *Virtual Life*, 172.

12 Ibid., 170.

13 Ibid., 172.

14 Ibid., 171.

15 Ibid., 173
Shaviro, *Post-Cinematic*, 17, 104.

Zeno, the early Greek philosopher, sets up the paradox with the flight of an arrow. If an arrow is shot through the air, at each moment it will occupy a singular, discrete space. But any object that occupies a singular discrete space must be said to be at rest. The analogy holds true for the cinema. Celluloid films projected twenty-four separate images a second. When run together, the images appear to be in motion because of the effect of beta movement—the brain’s synthesizing of successive images into the perception of movement. It is worth noting that the illusion constructed by beta movement is not due to the persistence of vision—a “deficiency” in the eye which causes an image to linger after its disappearance. For years, film theorists have held firm to the persistence of vision theory to explain cinematic motion, despite repeated attempts by Joseph and Barbara Anderson to dispel the myth. The entrenchment is interesting, especially considering that persistence of vision favors a passive vision-deficient spectator. Beta movement, on the contrary, bears witness to a more interactive observer whom the Andersons insist takes a more performatively role in the visual interrogation of a screen and the cognitive construction of motion. See Joseph and Barbara Anderson, “The Myth of Persistence of Vision Revisited,” *Journal of Film and Video*, Vol. 45, No. 1 (Spring 1993): 3-12.


Ibid., 163.

Rodowick, *Virutal*, 171.


Ibid., 46.


Fallout 3, Bethesda Game Studios, 2008; Elder Scrolls V: Skyrim, Bethesda Game Studios (2011); Batman: Arkham City, Rocksteady (Warner Bros., 2011).


Ibid., 81.

Schuyler, New Urban, 6.


Assassin’s Creed, Ubisoft (2007).


Each weekend, my great-aunt would take my brother and I to her neighborhood pool. It was not much more than a fence, a bathroom, and a diving board. A test of courage in those days was to swim to the floor of the deep end. At its center was a rusted drain. The children who could touch it were considered decent swimmers. The drain itself was a checkerboard grate, with openings large enough for keys to pass through. Years later, models like it would be banned after well-publicized cases of children drowning when their skin or hair had become caught in open suction.\(^1\) Even though we were oblivious to these risks, we associated a vague sense of danger with the drain, primarily because of its murkiness and inaccessibility. The difficulty in reaching it made it an attraction. We pushed through earaches to see it, kicking deeper until noses would bleed. For those who made it to the bottom, the drain would reveal its treasure: an ever-changing collage around its cover. Leaves, coins, toys, goggles—specimens of a week’s activities—all pulled together atop the cracks and holes.
As our lungs grew, we studied these collages for longer and more frequent periods, until they held few surprises. We had charted the range of the collections; the pool’s waste had a predictable pattern. So we invented a new game that involved sitting around the drain and trying to be the last one to come up for air. To gain better leverage, we wrapped our fingers through the drain holes, and as a distraction from the desire to breathe, we looked up at the sunlight reflecting off the surface of the water. Its rays arrived at the bottom of the pool distorted into odd wavelengths, like the sounds from other swimmers. The sky would sometimes swirl with textures. Blobs of children would undulate on the diving board. In those moments, it seemed like our plane of vision had been removed and stretched into a screen above us. I’d watch it as long as I could—this distended version of my eyesight—until my chest burned and I had to burst through its surface to breathe again.

The drain and the surface of the deep end have become emblematic for me. They have come to stand in for two approaches to design: the drain as collage and fragmentation; the surface as rhythms and optical tricks. The first alludes to the cut, the montage, bricolage, construction itself. The other refers to the take, the trick, illusion, perception itself. Unavoidably, these metaphors prejudice the practices they allude to: the drain puts collage in an underworld, where entities are concealed and threatened by an undertow. The surface, on the other hand, puts
“the take” in the company of illumination and life-giving air. One can easily be read as “bad,” the other “good.” But that would be reductive. Both reveal as much as they conceal. Both rely on contingency and chance. Both harbor their own discoveries and dangers.

In this final chapter, I propose swimming down to look up at optical media. The challenge of the dive is to bring photonic rhetorics—the persuasive effects of light and perception—into education. As I have already stated, the fine arts and the sciences have already welcomed optical media into the classroom. But if visual communication is to be considered a core competency of general education, or a liberal art for twenty-first century students, then we must attend to its rhetorics of invention. How are we to teach imagemaking as an activity for reflection, expression, and politics?

A strong model for new media literacies already exists. Gregory Ulmer has named it “heuretics.” Thomas Kent calls it “paralogical rhetoric.” Victor Vitanza’s term is “pararhetoric.” These rhetorical theories speak to a mode of invention and pedagogy that resists totalization, undermines any attempt to root “instruction” in permanent ground. Ulmer, especially, aligns these rhetorics with emerging styles and practices in new media. Ulmer’s new and “electric” media uproot singularities and branch (rhizomatically, contradictorily, ironically) into multiplicities and pluralities.
In this text, I have welcomed a paralogical approach to invention with the camera. Paralogy certainly has its advantages. It resists a self-involved “inner-face” with the camera. It breaks down the objectivity of mechanical images. It interrogates habits of perception. It celebrates unexpected linkages over stable models, mini-narratives rather than grand narratives, subversion over genre conventions, transgression always over conformity. Its invention-by-intervention reveals ideologies that might otherwise remain hidden. Agile and creative thinking often proliferates under its practices.

But paralogical rhetoric does not compliment all of photonic rhetorics. As we have observed, optical media are as dutifully scripted as they are wildly contingent. Light and digital apparatuses bear their own rigid protocols for vision, and many of the rhetorical effects of camera technologies—whether they be photo apps, video clips, or virtual cams—require a proficiency with their codes before their scripts are subverted. As helpful as paralogical rhetoric is in thinking of invention as an intervention, it tends to avoid these specific protocols of practice. When it does address the techne of optical media, it usually does so indirectly, through the indeterminate and improvisational forms of collage.

As a standard-bearer for practices in optical media, collage’s cutting and collecting sometimes impede more than they let pass. Although these tactics are compatible with strategies of paralogy, collage tends to filter out alternative
techniques, conventions, and agencies of composition—elements that are vital to exploring the instrumentality of photonic rhetorics. The consequences of this separation, I fear, will most likely be borne out by students, who must compete in increasingly exclusive markets that expect specific competencies in optical communication.

Still, paralogy’s goal of invention-by-intervention is laudable. The challenge becomes keeping hold of paralogy’s tropes of resistance and non-exclusion while at the same time encouraging technical expertise. Its reward would be a freethinking techne of imagemaking.

The proposal below is for a pedagogy of conscientious cheating and curative tricks. It is based on a cinematic practice of stretching the rules of optical composition to achieve a desired effect for an audience. In a general sense, all camera media invite their operators to play as they are being played—to test techniques until something striking and unexpected is produced. A pedagogy of cheating embraces both these facets of new media, both its rules and its tricks. It serves as an alternative paralogical approach to visual composition, a way to bring together optical techne and rhetorical invention, technical proficiencies and political interventions, singularities and multiplicities—a way to look at the sky while holding onto the drain.
Paralogy

Conscientious cheating offers an alternative to pedagogies of collage. By “alternative,” I am not situating it as a replacement; merely, an addition. To follow paralogy to cheating and new media, we should trace its heritage in rhetorical studies, specifically paralogy’s investment in collage as a central technique for visual composition.

In the early 1990s, in the midst of hypertext studies and a rapidly developing internet, Gregory Ulmer established a “non-place” for teaching electric or “hypermedia” in the tradition of rhetorical invention. Hypermedia was best demonstrated, he felt, with the logic of “artistic experiment” rather than “critical interpretation.” Ulmer develops this theory through two neologisms—“heuretics” and “chorography.” Both attempt to set up signposts for his experimental approach to invention, pedagogy, and new media. The word “heuretics” he coins for its resonance with the heretical thrust of the artistic avant-garde and French post-structuralism. Heuretics, in this sense, is a counterpoint of heuristics. It is likewise a foil to traditional hermeneutics, or interpretive approaches that seek to pin down the meaning of texts. Ulmer compares hermeneutics to a positivist strain in geography that maps locations by standardizing them, emptying them of their cultural differences and societal features. In Greek, this neutered and
standardized version of place is expressed as *topos*. Ulmer claims that *topos* is the same “place” that Aristotle uses to systematize the commonplaces of rhetoric. To rethink this normalized version of rhetorical invention, Ulmer draws from Derrida and posits another Greek term for place—*chora*, which also implies a gap. It is an evacuated space. Unlike geographic *topoi*, these gaps are not emptied of “spirit” and “social feeling.” Rather, they are open with possibility, welcoming the return of the very personality that *topos* excludes. *Chora*, therefore, might be thought of as a haunted place, one that is overrun with the logic of riddles or, according to E.V. Walter, a “dream reasoning.” Within it, experimentation and invention constitute an “*abgrund,*” or non-ground, for the study and practice of electronic media. 6 That unstable foundation, Nicholas Entrikken explains, establishes practices in “an intellectual continuum *between* science and art.”

In Ulmer, this middle space for new media is defined (or rather undefined) by a paralogical rhetoric—an anti-structuralist approach to invention in the field of rhetoric and composition. Paralogy radically re-evaluates how knowledge is communicated. It runs alongside the traditional structures of formal logic. Instead of dialectic and propositional truth-values, it weaves contradictory and ambiguous patterns. Thomas Kent, in his text on *Paralogic Rhetoric*, explains that paralogy is not a method but a “stance,” or “alternative vocabulary,” which “allows us to formulate an account of interpretation, language, and meaning that
foregoes talk about invariable truths that we discover through the application of a systematic methodology.” Against, method, against foundations, paralogy disturbs the principles that govern communication theory. Victor Vitanza, in his essay “Three Counter Theses,” works through these paralogical “disorders” referencing Lyotard, as he writes:

I distinguish paralogy from traditional or modern ‘invention’ (Postmodern 61-62) which is smooth, continuous, and controlled and accounted for by a system or paradigm of knowledge and which is used to promote the capitalistic, socialistic, scientific ‘efficiency’ of that system or paradigm...Paralogy however is ‘discontinuous, catastrophic, nonrectifiable, and paradoxical.’ It (re)turns—that is radically tropes—against the system or paradigm of knowledge, ‘changing the meaning of the word knowledge’ (Postmodern 60)...Whereas invention is used for traditional or modern science, paralogy is used by postmodern science. Paralogy breaks from the urge to coordinate knowledge with clarity, to organize it into a reliable structure. Style mimics an invention built contingently, one that speaks in riddles, undermines itself, drifts quickly from any attempt to tie it down. Vitanza, like Lyotard, performs this “radical troping” in his writing, leading some reviewers close to invective as they struggle for footing amidst deliberate typos and unfamiliar linkages. This merger of paralogical style and invention is
difficult to dissociate, Vitanza admits, from the “postmodern science.” That science often takes the form of Derrida (for Ulmer), Lyotard (for Vitanza), and Donald Davidson (for Kent). It is also difficult to dissociate from the advent of the internet and the acceleration of digital optics, which occurred concurrently with paralogical composition studies in the early 1990s. Paralogy, in many ways, was tailored for the digital image.

Ulmer commits himself to this correlation between paralogy and electric media. He sees the rhetorics of digital images as a challenge to the “apparatus of print.” By apparatus, Ulmer means not an actual device, like a typewriter, but a “social machine,” a network of practices, media and communication strategies. In opposition to the linguistic operations of the print apparatus Ulmer installs the “image apparatus.” His term for its inventive rhetorics is “electracy.” He writes, “electracy is to the digital image apparatus what literacy is to alphabetic print.”

Paralogical rhetoric—which some might say began as an application of postmodern theory to written composition—finds in electracy a non-method, or “post-modern science” of teaching visual communication, design, and digital media.

Because of its paralogical roots, electracy is not a mere transplant of literacy into the digital and imagistic realm. Sarah Arroyo, in her review of the impact of electracy on pedagogy, notes that:
electracy has less to do with literacy...and more to do with a combination of the concepts of “electricity” and “trace.” Both of these concepts can begin to take us out of the apparatus of print and work to describe the logic and metaphors we use in a culture built upon images. Electracy emphasizes a multiplicity of meanings for anyone concept, supports imagination, and encourages creativity and invention: all of which are traditionally not valued in a university environment built upon analytics. Electracy instigates a re-thinking of the ways in which composition and the rhetorics of invention are systematized for students. It engenders a move from hermeneutics to the anti-logic of heuretics, from interpretation to experimentation, from fixed-meanings to un-pindownability. For Ulmer, this is not simply experimental play for the sake of novelty in the classroom. Rather, it is a political act against an institutional system that seems to value conformity over self-expression.

The pedagogy of electracy also, and unmistakably, involves political action for both individual and community. It is always an intervention. Ulmer asserts that it is always “mediating the formation of identity at the individual and collective levels.” This transgressive approach to education reaches beyond work produced and becomes an important participatory act for the individual in what
might otherwise seem a neutered system or an impenetrable flow of electronic media.

Electracy’s framing of new media as a political act draws substantially from paralogical theories. Kent makes the lineage clear in his statement that defines “communicative interaction as a thoroughly social, public, and historical—albeit uncodifiable—means through which we get things done in the world.”15 This is a direct refutation of the stereotype of the rhetorician as an aloof, amoral stylistician, more concerned with demonstrating a talent for clever turns of phrase than a substantive interest in the wellbeing of others or public policy. Ulmer constructs a similar argument in his juxtaposition of electracy with news items of children beaten to death for bedwetting.16 This is what must be mediated—the structure of his book suggests. This is what electracy must help us better form: a sense of identity, both individual and collective, that could intervene in a parent’s compulsion to batter the skull of a child. Vitanza, likewise, fashion invents inventive resistance as a political act in his readings of Lyotard and Paul de Man. The disparities between two parties, Lyotard argues, can never be justly addressed by a single totalizing system. The interests of one or both parties always will have to deny something of themselves to fit within the system. The impasse leads to Lyotard’s differend. The only way to adjudicate it, Vitanza reminds us, is to “bear
witness to new idioms.” Paralogical invention must upset the *topoi* we use to think about stylistic technique and communicative design.

Paralogy’s political act, therefore, implies a pedagogical act. Politics are performed not only in the style one chooses to communicate in, but also in the way one formulates notions of education. In Vitanza’s essay an “In(ter)vention into Composition Theories and Pedagogies,” he argues “against a stable topology--that is, a rhetoric of persuasion.” The teaching of a stable topology should recall Ulmer’s criticism of the “neutral topos”—that which has been “emptied of personal and social feeling.” An alternative then for Vitanza is an “unstable ‘tropology.’” For Ulmer, its synonym would be chorography. Through tropology, Vitanza urges us, like De Man, to declare allegiance “against the game of knowledge as a means of totality and for the game of avant-garde theory-art as a means of resistance.” And it is here in Vitanza’s mention of “avant-garde theory art” and in Ulmer’s dedication to the interventions of the “digital image apparatus” that we begin to see the importance of optical media and image-based communication to the future of paralogical-invention. Here, in the crossovers between art and composition, the visual rhetorics of post-pedagogy will congregate.

The usefulness of the visual arts to paralogical rhetorics cannot be underestimated. Ulmer invests it with restorative abilities. It becomes one of the
few principles of an otherwise “unprincipled pedagogy.” He writes that “a principle of the EmerAgency [the interventions of electracy], is the application of arts methods... Art practices are a homeopathic cure for the aestheticizing of politics.” Art is the antidote to systematic analytics, hermeneutics, the dominance of critical interpretation. However, in his appropriation of artistic practices for the field of rhetoric and composition, Ulmer favors one artistic strategy in particular. Because paralogical invention is so intricately connected to experimental style, the post-pedagogy of “avant-garde theory art” ends up rallying around practices of collage. A substitute term would be bricolage, a strategy Michel De Certeau memorably uses to define theory as a “cut-out” and “turn-over.” Although collage, like bricolage, can cut-out and turn-over any genre, any convention, any style, it collects together the fragments of a rather restricted approach to practice.

Collage

In a 1984 essay, edited by art historian Hal Foster, Ulmer publishes his most compact summation of the interplay he sees between communication and art. Ulmer declares that “By most accounts, collage is the single most revolutionary formal innovation in artistic representation to occur in a century.” Collage, however, applies to much more than paper and glue designs. Ulmer is already
pushing past the “print apparatus.” He sees the television camera essentially as a “collage machine.” He also extends the term to still photomontage and the music of John Cage.22 The category is based broadly in tactics of montage, mimicry, and allegory. Together these tactics, he claims, feed off their host. However, he rejects the word “parasite” due to its essentially negative status. The term “saprophyte,” he decides, is a much more appropriate figure for collage. The saprophyte establishes a revitalizing symbiosis with its host. Like a mushroom, the saprophyte transforms the decaying matter of the dead into new life.23

The saprophyte of collage is constructed through a series of what Ulmer later refers to as “relays.” The relay orientates a work relative to a model, although Ulmer qualifies even this potentially hegemonic structure: it is a “‘weak’ model...not a template for our own work, but it orients us in the right way, demonstrating some of the possibilities of the form and style that may be adapted to the needs of our project.”24 The possible adaptations from weak models have multiplied under electracy and the “digital image apparatus.” It is easier than ever to requisition a work for the purposes of weak modeling. Downloading it, copying it, scanning it, ripping it, etc.—these are facile tasks. Electronic media, likewise, makes the relays of mimicry and montage user-friendly affairs. We can quickly interrupt our weak models by cutting, remixing, embedding, filtering, and
converting them to new formats. Collage capitalizes on these trends and offers a way for electracy’s paralogical theories to seamlessly entwine with relay practices.

Other theorists of paralogy and electronic media have used collage to shape approaches to visual composition. They too look towards music and avant-garde art to situate collage as a central practice of rhetorical invention. In Geoff Sirc’s delightfully conceived essay, “Box Logic,” he builds a pedagogical approach from the practice of collecting fragments. Students arrange and annotate artifacts in a small box, then reflect on the bricolage framed within. The containers, Sirc hopes, “help them bring an art consciousness to their world.” Two of the more telling “weak models” for Sirc’s project both come from the visual avant-garde: the survival kits produced by the Fluxus movement in the 1960s and Marcel Duchamp’s’ collages. Reinforcing the importance of the latter, Sirc quotes René Block, a turn-of-the-century art dealer and museum director: “The collage technique, that art of reassembling fragments of pre-existing images in such a way as to form a new image, is the most important innovation in the art of this century.” Sirc sees the form resonating in Kurt Cobain’s journals, and in the scraps of rap lyrics his students gather in their boxes. Picking up on these musical notes, Jeff Rice in The Rhetoric of Cool, articulates yet another theory of paralogical collage for visual composition. Rice speaks even more explicitly to new media composition and Ulmer’s precedent. His six “rhetorical moves”—
which he claims are critical to understanding the nature of emerging modes of composition—all derive from Ulmerian tactics for collage. They are “chora, appropriation, juxtaposition, commutation, nonlinearity, and imagery.” Rice connects juxtaposition in particular with musical sampling and uses it to construct a collage strategy based on the hip hop freedom to simultaneously cut-out and turn-over musical “standards.”

Hip-hop is a natural companion of paralogical collage, not just for its parallels with *bricolage*, but also for its history of political and cultural resistance. Henry Louis Gates Jr. famously traces hip hop’s stylistic techniques to the African roots of signifying, its prevalence as a mythomorphic narrative form and vernacular discourse, as well as its capacities for political intervention. “Signifyin,” is so attractive to collage theory because it expands the “free play” of standard associations and meanings. Other scholars have explored links between graffiti tagging and music samples as ways of subverting dominant cultural forms and articulating a vision or voice from outside the mainstream. Jazz also becomes an important precedent—a kind of oral collage, a blending together of forms and hooks to orchestrate an entirely new composition.

For rhetorical studies, using music to bridge electronic media and visual communication holds a number of benefits. First, sampling and signifying exert an undeniable influence on many forms of visual media crafted and shared online,
from remixes and mashups to memes and fanfilms. Also, deferring to hip hop’s politics and cultural cachet solidifies collage as a paradigm that can overcome the “theory/practice split.”31 The political history of hip-hop’s style, in other words, advances paralogy’s interest in a politics for excluded parties and *differends*. It offers a pedagogy of intervention in an academic system that Vitanza asserts “does, indeed, finally exclude others (that is, both people and ideas) from being ‘expressed.’”32

But hip hop is not collage. I will return to this point in a moment, but for now it should be said that by focusing on the credentials of such a specific stylistic practice like collage, electracy and collage theorists risk fetishizing a technique of visual composition. Arroyo can’t help but champion it when she contextualizes the goals of electracy in the classroom. She writes, “intervening requires putting together a collage of our own.”33 The strategy of the collage style has been so closely linked with theories of electracy and post-pedagogy that it has become a *requirement* for individual expression. De Certeau’s theoretical cut and turn-over becomes *the* applied practice for the classroom. It resists totalization because it never asserts its authority, never combines into a grand narrative, but remains instead an elusive, non-form. It is ever sampling again. Collage cuts right to the cut, editing through strict forms and structures.
Current trends in the teaching of the fine arts offer helpful insight into what is overlooked when we skip to the riff and the remix. In Why Art Cannot Be Taught, James Elkins avows that modern art programs have largely jettisoned a disciplined approach to method. He correlates this shift with the Bauhaus rejection of baroque drills and rote systems of developing artistic proficiencies. He concludes that “modernism and postmodernism have certainly brought radical changes, but it wouldn’t be prudent to lose sight of the fact that technique itself has also been lost.” He summarizes the shift away from technique by returning to Aristotelian categories of learning:

In Greek philosophy there was a distinction between subjects that could be taught and subjects that could not. Whatever could be taught had a theory, or a body of information, a set of methods, or something that could be written down and handed to students. Such subjects were called techne, and for the Greeks they included arts, crafts, and sciences. Other subjects could not be taught. Instead they had to be absorbed, or learned by example. Aristotle called them empeiria.

Deriving from the root peira, which means to “test” and “experience,” empeiria usually explains how we ride a bicycle. Let us imagine a girl who has never seen a bicycle ridden before. She reads the instructions. She listens to her father talk about pedaling and steering. She memorizes the procedures for proper balance,
breaking, and acceleration. When the moment arrives for her to finally try out her two-wheeler, we would all expect her to fall. She has no *empeiria* to draw from. By watching others ride, by testing the motions herself, by finding her own balance, she will learn to ride. While some tips and pointers might help her, she largely will have to absorb it for herself. Guitar playing, on the other hand, would be an Aristotelian *techne*. Its craft can be practiced, trained, challenged, disciplined. It can be written down, made into tutorials, lessons, classes. While guitar playing does involve some modeling, and while some gifted students can quickly mimic the sounds they hear without instruction, the craft of guitar playing remains largely a focus of instrumental *techne*. The same applies to hip hop.

On the other hand, collage and the rhetorical pedagogies that have been built around it, conceive of visual composition as a subject of *empeiria*. Electracy’s imperative to intervene in new media and create one’s own collage (what Ulmer would call a “myStory”) encourages a kind of imagemaking built on absorption. The techniques for the production of the material that is to-be-cut, or to-be-collaged, tend to merit less consideration than the act of assembling the fragments. Processes are mainly left to the student to discover, for it must be his or her own sensibilities that direct the cutting and turning over. To propose a code or a standard to be learned would undermine the discovery of the student’s own terms for intervention. The craft of image-construction—its properties,
materials, histories, and effects—must remain mostly muted. This bracketing of techne mirrors Elkins’ criticism of fine arts program: “What we think of as art is more like empeiria: it does not depend on rules so much as on nonverbal learning, things that can’t be put into words. To Aristotle art was techne, essentially a matter of rules. Since the Renaissance, the concept of techne has shrunk so that it means basically ‘technique,’ and we have demoted “technique” to a level below fine art.” With its aversion of rulesets and stable narratives, collage theories of visual composition risk encouraging this discounting of technique in optical media.

Importantly, though, one need not bracket technique to make collages. In fact, the histories of sampling and riffing that collage theories draw from are deeply interested in learned techniques and studied forms. That devotion to techne is obvious in the classical training of a bass player and the orchestrations of professional hip hop artists. Some of the rhetoricians I have grouped into the collage school are well aware of this composibility. My chief concern is that weak models, relays, and mimicry demand just enough familiarity with digital instruments and optical topoi to begin troping their conventions, playing around with their scripts, and combining them in new ways. Of course, this form of invention brings benefits. It encourages self-expression and exposes students immediately to strong examples for their work. But I return to what Elkins calls
“an idea that was absolutely fundamental in art academies before the twentieth-century: the notion that looking and working are not enough, that art requires a balance between theory and practice.” He suggests that this “is an idea worth pausing over.” If we reflect long enough to weigh the balance of current rhetorical approaches to optical media, the scales tip rather decisively to theory. The practice and *techne* of optical media have been so concentrated in theory-friendly collage that their rulesets and scripts are often obstructed, not to mention the industry demands, genre styles, and audience expectations that have developed around these rulesets.

A second possible, unintended consequence of collage’s ascendency is a return to the inner-face of anthropocentrism. Collage’s tropology of cuts and turnovers vests its agency in human operators. Despite the emphasis on the Derridian trace and the incommunicability of knowledge, the collage style of paralogical rhetoric encourages its practitioners to view their own hands as the primary arrangers of meaning. Even though collage’s subversive mimicry re-enacts the impossibility of clarity and the unavoidable breakdown of compositional stability, it foregrounds the rhetor’s own performance of these breakdowns. Emphasis shifts away from the tropes that precede those of the collage’s cuts—the tropes of the visual apparatus, the tropes of light, the tropes of
perception, and how the rhetor’s activity has already been mediated. These become faint footnotes to the composer’s own *bricolage*.

**Surface Tricks**

I am advocating a critical distance that will allow us to better intervene in multiple strata of tropes. The goal is to arrive at a tropology inherent to the mediations of light and imaging apparatuses, in addition to the greater awareness we already have of the cuts and turnovers we perform with our own collages.

One way of creating that differential space is to turn from collages to a more primary consideration of surface. By surface, I mean that which is questioned in Morell’s *camera obscura* photographs, or the surface that suddenly comes into view across a desk when the angle of the reading lamp above it changes, or the surface that appears, swirling and shifting, when we look up from the deep end of the pool. Surface calls attention to the ways in which the world around us is distorted into vision. It gives testimony to a collaboration, a material assemblage, which precedes the camera’s image. Its reflections presuppose “collages.” Surface lives on the basis of tropes, or tricks, which follow patterns yet break free of expectations to enact an illusion.

I would like to explore three such tricks of surface. Together they constitute visual composition. There is (1) the trick of light that makes a surface
legible; (2) the trick that an apparatus imposes to re-render that legibility in a
digital or chemical medium; and (3) the trick that we enact—the moding,
collaging, tweaking, and editing that let us intervene in the display of captured
light and surfaces.

Turning to these tricks of surfaces means re-investing in the
instrumentality of imagemaking. An orientation to optical *techne*
draws us closer to the tricks that precede our own. If we put aside
(just for a time) our efforts to demonstrate our own paralogical
inventiveness, the cameras we wield can reveal the paralogical inventiveness of light itself.

Each of the camera technologies I have described in the preceding chapters
demonstrates the first two layers of tricks. The Hipstamatic, for example, with its
interface of scripted effects, alludes to a fairly wide-ranging material history of
lighting effects. Each filter simulates a visual style deriving from a particular
chemical process, negative stock, or lens technology. Each one showcases a visual
artifice, whether that is the aesthetic of toy cameras, the stylings of pictorialism, or
the striking imperfections of wet plate collodion. The spectrum of pre-scripted styles calls attention simultaneously to the user’s choice and to the tricks that photographic instruments automatically impose. Each package offers a different interpretation, a different script for light. Similarly, digital cameras, in their shedding of material records, encourage long sequence shooting—uninterrupted “filming” of events as they unfold. The techniques of capturing these shots involve both a practiced “eye” with the camera, much like virtuoso film directors, but also a sensitivity to the embodied rhythms with which light phases, or tricks, our experiences of events. Even the virtual cam—with its fusion of shooter, subject, and spectator—stages tricks in landscapes of data and light. Its two-dimensional information maps that navigate three-dimensional worlds point to future machinations between virtual optics and biological eyesight.

These specific camera technologies and digital optics in general invite us deeper into the furtive play of camera techne. They give and take control. We feel it in the vast assortment of customizable views, the freedom to shoot anytime, anywhere, and yet the nagging limitation of not having captured (or sometimes, miraculously, having captured) exactly what it is we would most like to preserve. In doing so, the digital camera presents, at once, unprecedented control over the camera’s trick of light and the elusiveness of light itself.
This important tension between light and the instrumentality of digital devices can be better understood if we begin to recognize how cameras are both shooters of contingent events and codifiers of visual perception. The tricks of surface can be accessed through these two modes—shots and scripts. As shooters, cameras call for certain performative measures, like a camera phone’s start-up time, shooter-subject distance, and capture speed. The shooting parameters dictate which moment will be captured and maintain the camera’s unique relationship to its visual reference. Roland Barthes describes the special status of the reference in photography as a “certificate of presence” an “emanation” of a “real body…that-has-been.” Contrary to Barthes’ claims, the case of the reference applies for all modern cameras, not just traditional photographic media. The reference exists for a video game player, whose onscreen avatar is a “certificate of presence” for off-screen hand movements. The real body emanations are, in this case, gestural.

Because of this unique reference, Nelson Goodman calls camera media “autographic.” No matter how much attention is given to recreating the lighting, angles, and settings of an original shot, it can never be recaptured at another time. The image bears the autograph of a singular event—a unique appearance of surface in space and time. This autograph is the response to the primal trick of light, that is, its troping of surface into view.
Kodak capitalized on this feature of photography in a 1914 marketing campaign. The “Autographic Kodak” allowed photographers to write on the back of their exposures, marking down the date, a name, perhaps a title. It was, in many ways, a precursor for current practices of image tagging. More interestingly, Nancy Martha West argues that the Autographic Kodak coincided with the company’s attempt to elevate the authenticity of the photographic event. It was an instant with remarkable origins—a tale that was authored and could stand in as potential competitor of language itself. The Autographic Kodak made Barthes’ “certificate” of reference a legible, writable surface. However, the domestic snapshots that the camera produced—far from becoming iconic storybooks—ultimately remained closed off, resonating only for those immediately involved in the event of their taking. The medium, in other words, was so given to autography that its references struggled for any kind of universizable “language.”

Along with autographic reference, the camera maintains another mode for making legible the tricks of surface: its “code.” While the code is quite literal in digital cameras, it also applies to the chemical reactions analog formats use to proceduralize the transcription of the autograph, or the translation of light into an image. Goodman calls this the “notational system.” Most photographic instruments allow access to it via measurements for shutter speed, gain, and depth.
of field. Virtual cams also might provide players some interactivity through a video game’s settings, which let a player, for example, modify the contrast and the rendering speed of graphics. However, the notational systems of these virtual simulations usually are left fully open to designers. The rendering of colors, the transparency of shadows, the reflections of a virtual sword as it is swung through the air—these scripts often remain the exclusive province of game designers. The point is that the province exists is thoroughly mapped; digital technology has radically codified the apparatus’s translation of light.

Unlike the autograph, these notational effects are not unique. They are the standardized, neutered *topoi*. Goodman describes them as forgeable. The vignette that Camera+ adds, or the auto-correction for outdoor white balance in a video clip, or that glint on a video game sword as its swung the air, is always repeatable. The sword will always glint in the same way. Even if the program is written to generate random patterns, still its effects will always be retrievable and perfectly reproducible because it runs through a notational system.

Although Goodman addresses this multiple notational system in analog and chemical photography, digital optics and the diffusion of camera media proliferate the scope and precision of notational systems. They now compete in importance with the autographic events they process. Photo filters can be as fun as framing the shot itself. Graphic engines provoke as much admiration as a title’s
gameplay. The interaction between the autograph and notational system is descriptive not only of our current relationship with light, but also how we fashion meaning with images. In the interplay between shots and scripts, we find the tricks of the camera.

**Deliberate Practice**

Optical *techne* not only provides a way to better study these primary tricks of light and image-making apparatuses, but it offers a distinct pedagogical advantage in its engagement of *topi* and notational systems. Students discover a structure in which to develop expertise in visual composition. I recognize that mention of technological “expertise” or “mastery” invites associations with a hegemonic teacher-student relationship. It suggests a preconception of knowledge as something that might be controlled, disciplined, and lording over. However, there is still room for nuance with these terms, specifically if we begin to think of expertise not as the dominance of subject material, but as the advancement of performative flexibility.

Current research on expertise offers a hopeful message to students and teachers alike. It claims that exceptional proficiencies are not necessarily innate, but can be acquired. This theoretical school of learning, known as “deliberate practice,” has been pioneered by K. Anders Ericsson at the University of Florida.
His research suggests that expertise is less a matter of genetic predisposition, less a matter of logging time in a given field of study, and more a problem of creatively challenging skills through the application of past experience. Ericsson and his colleagues assert that this activity is distinct from “indirect” learning, like subjects of empeiria, when new understanding is acquired “with minimum instruction” and “without the primary purpose of attaining and improving skills.” Direct and deliberate practice, as a counterpoint, seeks situations where techne defines the circumstances for learning. According to Ericsson, the most pivotal factor is: the subjects’ motivation to attend to the task and exert effort to improve their performance. In addition, the design of the task should take into account the preexisting knowledge of the learners so that the task can be correctly understood after a brief period of instruction. The subjects should receive immediate informative feedback and knowledge of results of their performance. The subjects should repeatedly perform the same or similar tasks. When these conditions are met, practice improves accuracy and speed of performance on cognitive, perceptual, and motor tasks.47

The key features of deliberate practice—a focused pursuit of technical improvement, integration of past experience in learning outcomes, productive feedback, and repeatable tasks—can be observed in the best musicians. Contrary to popular stigmas, Ericsson finds that most expert players spend the same
amount of time in training and rehearsal each week, but the best dedicate their
time to exercises that challenge their techniques and past knowledge.48

Psychological approaches to immersive learning also indicate that greater feelings
of satisfaction and achievement are won when performers are push near the limits
of their capacities.49

One of the most compelling case studies of deliberate practice is the Polgár
sisters. Zsuzsa, Zsófia, and Judit Polgár are each internationally ranked chess
Grandmasters. Before their birth, their father László Polgár, had published a book
theorizing that genius could be taught and was independent of genetic disposition.
Noticing a proclivity for chess in his eldest, Zsuzsa, he decided the game was as
good model to test his theory. As Carlin Flora describes it, chess had everything
László was looking for. It was “an art, a science, and like competitive athletics,
yielded objective results that could be measured over time. Never mind that less
than 1 percent of top chess players were women. If innate talent was irrelevant to
Laszlo’s theory, so, then, was a child’s gender.”50 Remarkably, all of the sisters
became internationally top-ranked grandmasters, in a sport where only 24 of the
approximately 1300 grandmasters are female. Home-schooled and competitive at
a young age, they describe their childhood as a happy one. Zsuzsa attributes their
success to their father’s commitment to directing their energies to a specific
pursuit.51 With an environment tailored for deliberate practice—created by their
father and cultivated by their small community of siblings—the sisters were able to hone the techne of chess.

Studies of grandmasters have revealed that exceptional skill does not derive merely from the amount of hours committed to practicing. Hours logged in tournaments or in competitive games, for example, have less of bearing on a player’s ranking than do hours devoted to “serious study” of stratagems, precedents, and techniques to improve current proficiency levels. Furthermore, although memory and visual/spatial processing are crucial to deliberate practice, grandmasters are not gifted with strikingly superior intellects or memory capacities. Rather, eye-movement studies highlight the importance of “visual encoding”—a combination of perception and recall in which patterns are recognized in the context of past experiences. The best players imagine chess layouts as strategic topoi. They can see spatial commonplaces, each with their own advantageous moves and possibilities for gain.

The role of memory and trained vision emphasizes techne’s importance to this learning model: without a fixed topography or notational system the “serious study” and “visual encoding” of grandmasters would be impossible. In sum, standardization has its value. As Elkins claims in his review of contemporary art programs, “tedium, discipline, and repetition can even be attractive in their own right.” Without the stability of techniques and conventions, it becomes much
more difficult to fix markers to assess performance, challenge one’s performance, and maximize the lessons gathered from past encounters.55

This defense of techne is by no means a suggestion for pedagogies of visual composition to transform themselves into a series of tutorials. I am not suggesting we simply teach the apparatus or the application and leave the rest to the student’s own time. Nor do I want to construct self-expression into a bitter enemy of techne and deliberate practice. In fact, I see them being complimentary of one another.56 And the last thing I hope to advocate is a canon of absolute techne—a coda that will be instituted with the authority of “master practices” and serve as the key to all new media designs. That kind of reliance on singular foundations misses the point. For one, scholars of deliberate practice have shown that the best achievements are made when individuals can keep available a multiplicity of approaches. In one study, design engineers were shown to exhibit the most creativity when their own intentions clashed with clients’ goals for a project.57 In another, successful architects demonstrated that a hallmark of superlative design technique was, in fact, a plurality of techniques. The majority of the best designers employed what Bryan Lawson calls “parallel processes.”58 It is the ability to exercise a Kierkegaardian irony, which juggles alternatives while treating each one with consideration and vigor. Kierkegaard describes this problem-solving approach as a “perpetual movement,” which “continually sees to
it that the question does not become entrapped in an incidental understanding, that is never weary and is always prepared to set the issue afloat if it runs aground—in short, that always knows how to keep the issue in suspension and precisely therein and thereby wants to resolve it.”\textsuperscript{59} Applying Kierkegaard, we might say the even though one set of design practices should not be imbued with greater authority over the other, that does not mean all options must remain lightly “touched.” Quite the contrary, alternatives must be thoroughly taken in hand, precisely weighted, exactly aligned, before being sent aloft again.

When the juggling ultimate settles down into some definitive shape, it should not be confused with a final conformity to the rules. Another twist is required if we are to arrive again at the politics of paralogy. It is here that we might turn to conscientious cheating. I use this word “cheating” in full awareness of the deceitful and illicit spirit it carries into any mention of pedagogy. I\textsuperscript{60} summon these ghosts not to startle, but to demonstrate how those very provocations and subversions might allow for a productive meeting of many of the competing terms we have discussed surrounding rhetorics of visual communication. Conscientious cheating takes up optical media’s autographic nature and its systematic notations. It is a method that gathers in the contingency of the camera’s shots without filtering out the restrictions of its scripts. It opens itself to paralogical interventions through the \textit{techne} of deliberate practice.
Rules

To make explicit the distinctions of “conscientious” cheating, the rules of the game must be known (the game in our case being composition with optical media). Gonzalo Frasca, a theoretician and designer, proposes four different levels of rules for any game system. Each level offers a way to access the notational scripts of optical media. Level One is representation. These rules dictate the way in which a thing will be rendered: how, for example, the glint of our previously mentioned virtual sword will be displayed. Level two is formed by “manipulation” rules. These are the stipulations though which gameplay is executed. One manipulation rule of a soccer match is that players may not touch the ball with their hands (unless they are the goalkeeper). Level Three dictates the goal rules, or objectives, a popular one in most game systems being the “highest scorer wins.” Finally in some cases we find a fourth level: “meta-rules.” These are rules that allow other rule levels in the game to be modified. Tegwar, a card game from Bang the Drum Slowly, consists almost entirely of meta-rules. Players are dealt a hand of cards and take turns inventing a new manipulation rule. Vitanza uses the game to illustrate the need for “paralogical linkage” and to “bear witness to new idioms” when faced with a differend. The only answer is to invent new rules. Frasca explains that this fourth level is not always available:
some designers allow for customization; others ban it completely. He notes, “with or without meta-rules, the simauthor always has the final word and remains in charge because total player freedom is impossible since it would imply that no rules are unchangeable and therefore the game could literally become anything.”

Even in Tegwar, there are some rules—some idioms—that persist. In the film version, the representation rules remain intact (there are cards). Manipulation rules stay fixed (each party may take a turn).

In thinking more broadly about visual design, we might say that any composition circumscribes a domain for itself by applying some combination of these rules. A photograph necessitates certain conditions for the successful production of an image. Its goal rules call for the camera’s aperture to be opened and a surface to be exposed to some degree of light. Each apparatus will also impose its own representation rules for rendering an image. Shooting with the FotoMan will produce a pixelated, black and white, low resolution image, quite unlike the representation rules of a DSLR camera (although their goal rules are shared). Finally,
every digital image can be adjusted under certain manipulation rules—a change in f-stop, a reconfiguration of RGB levels. The same typology could be imported to visual projects. For any assignment in optical media, we might enumerate its goal, representation, and manipulation, rules. Most would be shaped by format, genre, and audience expectations.

Frasca’s rule-categories merit this broad application because they help identify the ideologies formed and communicated at each level of these rules. Additionally, Frasca’s notes on meta-rules remind us that we might not always be free to intervene in these ideologies through strategies of collage and radically reconfigure the scripts of the system itself. Due to the demands of an assignment or the restrictions of technology, often we must make the best of the representation, manipulation, and goal rules at hand. It is here that conscientious cheating can uncover new possibilities and paralogical interventions.

Cheating

Definitions of cheating are not without their own idioms and litigations. Many players, for instance, condemn modification of manipulation rules as a cheat. Mia Consalvo in her review of cheating in video games points to players who hack into the code, script their own programs, or run third-party software to crack the system’s randomized calculations. This illegal creation of a meta-rule usually
gains the player some kind of virtual capital (handicapped adversaries, boosted powers, or maybe the acquisition of rare items).\textsuperscript{65} Other respondents draw an even harder line and define cheating as any activity that distorts the “spirit” or “expectations” of a game, which applies even to play that lies within the boundaries of manipulation rules.

An example of this more extreme rule-enforcement can be found in the case Blizzard brought against a guild of elite players of its video game \textit{World of Warcraft}. In 2010, the Ensidia guild won the prestigious honor of being the first party to “kill” the Lich King, the main antagonist of one of Blizzard’s expansion packs. Soon after claiming victory, the guild was stripped of their title and banned for 72 hours (an eternity for hardcore gamers). Their transgression was that they had discovered a bug in Blizzard’s code that made the battle against the Lich King relatively easier. The players did not hack Blizzard’s code nor did they run any third-party software to distort the game’s processes. They merely discovered a “gap” in the program Blizzard had scripted. If they threw a certain type of bomb, they could prevent part of the platform on which they were fighting from crumbling, giving the players more room to maneuver.\textsuperscript{66} Consalvo’s term for Ensidia’s cheat would be “gaming the system.” She explains that, like the members of Ensidia, players who game the system “tend to see themselves as elite gamers who have already surpassed the normal challenges offered by a game and
so turn to gaming the game itself for exploits.” In soccer, British commentators often make this complaint against Mediterranean teams when to earn a free kick players throw themselves to the ground after light contact from an adversary. This sort of diving, the commentators lament, cynically distorts the intended spirit of play. They would be loath to admit that diving is something of an art itself. In fact, divers must perfect a talent for sensing potentially suspicious contact and tumble well enough to “sell” the foul to the referee.

“Gaming the system” is a charge that might also be lobbed at prep-courses for standardized tests. These prep courses have little concern for the SAT’s goal-rule ideology of measuring a student’s quantitative and qualitative skills. Instead, they teach students how to exploit the test rules for a higher score.

The skill it takes to “game” in this manner presents a pedagogical opportunity. This form of cheating leverages fluency in a structure’s manipulation rules to gain an advantage. Expertise is on display in the finely-tuned performances of Ensidia’s world-beaters, the veteran defenders of Spain, and the high-scorers of the SATs. The gaming of the system that they are able to achieve is the result of deliberate practice in the techne of a field. The expertise they manifest develops only after immersion in the mechanics of their “art.” With that expertise, they are able to work a graceful subversion, one that isn’t particularly destructive or negating. Rather it is a sleight-of-hand—a dash of
cleverness and critical thinking that challenges conventional play, an achievement that is fashioned from troping and *topos*.

Magicians frequently game optical media this way. They are practiced meddlers in the rules of perception. In fact, illusionists and the theaters where they staged their “phantasmagoria” have a notable history for pioneering new applications of optics. One of the most prominent examples is the Royal Polytechnic Institute of London, which flourished in the nineteenth-century under the direction of John Henry Pepper, more commonly known as his pseudostage name of “Professor Pepper.”70 Collaborating with inventor Henry Dircks in 1862, Pepper staged an optical trick that Dircks had patented years before to little fanfare or profitable gain. With Pepper’s showmanship, the technique—which projected a moving, transparent person on stage—became famous as *Pepper’s Ghost*. The feat was accomplished by angling a pane of glass across a stage and lighting a figure just in front and below it, outside the audience’s view. In this way, Pepper and Dircks could cast a ghostlike figure alongside more “material” actors. The effect was only possible after Dircks had carefully studied and “gamed” a mundane phenomenon—namely, the occasion of passing by a window and catching one’s reflection in the glass, whereupon the onlooker’s image is seemingly projected inside the building. Audiences were thrilled by this “ghost.”
Other magicians tinkered with the trick, derived new contexts for it, and restaged it throughout the world.\textsuperscript{71}

Pepper’s Ghost also served a crucial pedagogical function. Pepper used it as a showcase for optical science. His hope was that a newfound appreciation of contrivances in light might help his audience discredit the hoaxes of the Spiritualism movement, which was nearing the height of its notoriety at the end of the nineteenth century. The Spiritualists—self-proclaimed emissaries of the nether world—would use practical or photographic lighting effects to counterfeit encounters with the dead (almost always for a steep price).\textsuperscript{72} Their “cheating,” while conforming to the framework I described, targeted the naive or the grief-stricken for profit. Pepper’s magic, on the other hand, constructed the cheat for the benefit of his audience (although it must be mentioned that Pepper certainly profited from it as well). In this sense, the optical game of Pepper’s Ghost is representative of illusionists practicing what Jim Steinmeyer describes as an “honest kind of trickery.”\textsuperscript{73} In his history of stage magicians, Steinmeyer notes that the best performers leave an audience feeling not like they have been duped or conned, but that something “has been given.”\textsuperscript{74} It is optical media’s history of honest trickery that I am after with conscientious cheating. It commemorates these turn-of-the-century magicians, like Georges Méliès, who were cinema’s pioneering inventors and wonder-workers. It embraces the contemporary
command often heard on film sets to exploit the rules of perception and “cheat” actors closer together than they physically should be. This cheat is one of marvel making. It is a cheat of proximity. It is a cheat of gift-giving.

Curative Tricks

Consalvo claims that people often game the system to provide an advantage when the play is lopsided—a trick to level the odds, to intervene for the sake of expanded agency. This connection between gamesmanship and power relationships is not an innovative hypothesis. Play theorist Brian Sutton-Smith finds children simultaneously rational and irrational about the authority invested in social roles; their gaming is rule-structured but fantastically flexible within those structures. It allows them to function as a kind of “traveling troupe of medieval players” which depicts the adult world in order to test it.

Similar to this trickster-like testing of rules, Mary Flanagan sees ugliness and subversion as intrinsic modes of play. In Flanagan’s examination of doll re-skinning she argues that the nature of play is an “unplaying” of existing codes, a contesting of their simplifying power, and, even more specifically, a questioning of the technology used to organize these sovereignties. Don Handelman and David Shulman even broaden the tricks of play to suggest a metaphysical challenge, a cheat of the gods, or fate itself. They classify this rebellious play as “bottom-up”
gaming as opposed to the “top-down games” in which play is conceived as keeping order in the cosmos. Bottom-up play, they argue, seeks to negate that order, or at least, to even out the odds.79

Theories of collage likewise endorse a subversive “bottom-up” version of play. “Anti-technique” for Vitanza provides a “curative fiction,” a series of “comic jabs against the dominant tragic, sickly philosophical view of things.”80 Derrida, likewise, sees bricolage as a way of escaping the top-down play organized by a “centered structure.” It antagonizes a system that is “based in fundamental ground...and a reassuring certitude.”81 If that “reassuring certitude or a “transcendental signified” is affirmed, it empowers a “totalization” of meaning.82 It is this totalization that is at stake when players defend the “spirit” of a game. If the center is upheld, rules can be made, boundaries can be drawn, difference can be organized, and alterities can be excluded. The cheat or trick for Derrida is to demonstrate the fiction of a center or singular origin.83 Totalizations can then be played as myths and the gates re-opened to difference and alterity.

Derrida himself has extremely invested in *bricolage* as a form of teasing out the center of a structure. I have argued above that this type of subversive practice is often limited in helping us understand how that center has been made to cohere. There is often the compulsion to cut before seeing how the form functions, to game the myths of the system before listening to how they end, to
imagine that in reconfiguring the system we might somehow escape it. To cheat or to trick is, therefore, calls attention to the rules. It demands that we listen more. Rehearse the myths. Feel at the stitches making the system cohere.

Similarly, for Smith, Flanagan, Handelman and Shulman, tricksterism often inverts the codes of play, applies them novelty, or redirects them, but throughout the rules remain intact, or at least still visible. The theaters of children, the “unplaying” of doll re-skinning, and the bottom-up games against the cosmos all work through a deliberate practice that inverts the rules and tests their boundaries. Each tactic teases the center out of place, makes the system’s boundaries porous, but remains contiguous to of the form of the system itself.

This conception of play could justifiably be aligned more with Gadamer than Derrida. Its fluctuation between rules and subversion coincide with the “to-and-fro” movement Gadamer sees in play structures. That movement is unending, like the “play of light” and the “play of waves,” both of which are not tied to any goal that would bring them to an end. Back and forth, to and fro, play in Gadamer is more like its etymological root, *spiel*, or dance. It is a delicate balance between rules and being ruled. In Gadamer, “all playing is being played.” It is both performance and script, autograph and notation, contingency and archive. Yet the rules ultimately seem to overwhelm the players. He himself claims that “the attraction of the game, the fascination it exerts, consists precisely
in the fact that the game tends to master the players.”85 Play becomes monolithic in that “it renews itself in constant repetition.” He continues: “The movement backwards and forwards is obviously so central for the definition of a game that it is not important who or what performs this movement...It is the game that is played—it is irrelevant whether or not there is a subject who plays. The play is the performance of the movement as such.”86 The reorientation play yields is a “transformation through structure.”87 It does not wholly belong to the game structure, the player, or the audience. It encompasses them.

Because of statements like this, Gadamer has been criticized for the “marginalization of difference.”88 Terry Eagleton sees him glazing “struggle, discontinuity and exclusion” to form a “club of like-minded.”89 Certainly, in his play structure, any kind of trick would be relegated to a very diminished role. Its marvel and novelty would be tastefully contextualized into the game’s master structure. No matter how much we play at the rules, in Gadamer, we are ultimately swept together by the rhythmic dance. A social assemblage takes over and we enter a more “fulfilled” time, as a community that shares in the structure of the play.90

There is much in Gadamer that I have endorsed. His communal play is like the magician’s gift-giving. Also, the to-and-fro movement of play and being-played is helpful when questioning the autographic and notational modes of
optical media. At the same time, I agree with his critics that Gadamer ultimately articulates a top-down game. Conscientious cheating resists this. It transforms not through structure but within and aside structure. The object of both its techne and its tricks is the repetitious procedures of the system—not to perpetuate them, but to unpredictably step aside and re-contextualize them.

Hannah Arendt explains this departure within and against a system as a “natality.” It is a political action that refuses to sacrifice its individuality to the rules and escape into the “stability, security, and productivity,” which all hangs over Gadamer’s fulfilled time of play systems. Arendt’s action offers a different kind of “mastery” — “the only alternative to a mastery which relies on domination of self and rule over others.” It is the mastery present in a promise, in a covenant, “when people gather together and ‘act in concert’.” Rules are not jettisoned; instead, through a cheat or trick of existing structures those rules can be re-grounded. Arendt explains that these new “precepts are the only ones that are not applied to action from the outside, from some supposedly higher faculty or from experiences outside action’s own reach. They arise, on the contrary, directly out of the will to live together with others...and thus they are like control mechanism built in the very faculty to start new and unending processes.” Conscientious cheating capitalizes on this “capacity of beginning something anew.” Like the optical illusion of a magician or the unexpected tricks of cameras, its action offers
a way to re-see the world. Arendt calls this nothing less than miraculous. It is a new, contingent compact that offers hope to others. Its rules and its tricks are not individual. They invite others to pick up their practices and themselves deviate from “the automatic processes which seem to determine the course of the world.” It is not a retreat from the world, but the possibility of bringing new processes to light.

**Cheating the Camera to Life**

Camera media promises opportunities to re-begin. Particularly with networked technologies, camera media constantly open us to new way of imagining our world and sharing it with others. In the opening chapter of this text, I offered the invention of the FotoMan as one of those points of re-orientation. Another event, following just a few years after the FotoMan, draws us closer to the camera’s promise of play. Its origin story calls into question our shooting and scripting with optical media. It tells of a cheat born simultaneously in structure and subversion.

In January of 1997, Philippe Kahn’s wife, Sonia was in the midst of an eighteen-hour labor. Philippe had been to Lamaze class with Sonia and offered her some advice, which, according to him, was not well-received: "The second time I said, 'Breathe!' Sonia said, 'Shut up!' So I said, 'OK, I'll sit at this desk and
find something to do.” He turned his attention to keeping friends and family informed about the delivery. Equipped with his Casio digital camera and laptop, he was prepared to upload the first photos of his daughter to his personal website. But for months he had been working on a much faster method of sharing the images.

Born in Paris, Kahn majored in musicology and earned a master degree in mathematics. He attributes his love of flute-playing and programming to his family of cabinetmakers and musicians. Arriving in Silicone Valley without a green card with the ambition to become a software engineer, he had succeeded in creating a number of successful companies, ranging from a smaller startup, Starfish, to a global database software provider, Borland International. At the time of his daughter’s delivery, he was between startups, playing a lot of flute, and working on inventing the camera phone.

As his wife struggled with labor pains, Kahn left to purchase smoldering wire at a nearby Radio Shack. With it, he hot-wired his digital camera to his phone. By the time his daughter was born he had finished the necessary program to send her picture wirelessly to a network of 2000 email contacts. Astonishingly, it worked.

Kahn and his wife would call the technology “Picture-Mail,” and use it to found yet another startup, LightSurf. Whether or not this marks the first
transmission of an image over a wireless network is often debated; many other agencies were working on similar technologies. But Kahn’s story is certainly the most popular account. His status as a French immigrant, a reformed “bad-boy” of technological entrepreneurship, a spokesperson for Best Buy, and the benefactor of the multi-million dollar sale of his nascent Multimedia Messaging Service (the proceeds of which he used to record a jazz album) are all factors that have made his do-it-yourself fable all the more bewildering.  

Kahn could serve as a paradigm of conscientious cheating. With a combination of ingenuity and technical fluency, he is remembered as an alchemist of optical media, a pioneer of twenty-first century technology. His story tells of an individual performance that deviates from the corporate anonymity of technological innovation. Also, the tale underscores his deep understanding of camera technologies, their boundaries and rulesets. It paints him as a craftsman. His inventive turn, his cheat in bringing the two technologies together, does not disregard the coherence of the structures he was working with. His composition does not perfectly accept the label of *bricolage*. In fact, Kahn keeps notational scripts largely intact. He invents a new technological idiom to remount the procedures of two apparatuses: camera and phone. The play is a curative trick. It dislodges the center of mass communications by illustrating how narrowly we had
conformed to its rules. He re-begins with the promise of a new standard, alternative freedoms, and rebooted communication strategies.

Also, there is Kahn’s photo. It grounds the entire myth of the camera phone’s origin: the first image taken and shared is of a newborn. Cynically, we could say this belies a subtle strain of masculine mastery. After his wife pushes him outside the domain of natural birth, Kahn engineers his own technological birth. If she won’t let him participate, he’ll do it on my own—the story says—a male revenge invention.

More charitably, we might focus on the community that gathers in the sharing of this image. We might call it a mastery for the sake of alterity—a gift for Kahn’s 2000 contacts, friends, and family members. The gift is shared even with our own family and friends, for it is Kahn’s composition, by way of extension, that we will use to tell of our own births and deaths, our own sacred events.

The natality marked by the image of Kahn’s daughter, Sophie, is therefore both literal and figural. It is captured in the Italian idiom for birth—*dare alla luce*, or “to give unto the light.” Literally, the image marks the arrival of Kahn’s daughter. Figuratively, it bears witness to our own delivery—a new light for visual communication, borne through a trick of *techne*. As camera creatures, we reach out with similar programs and scripts, notations and codes. Our autographs might change; our shots differ. But with each take there is the possibility of
opening our eyes to the rhetorics with which we compose and with which have
been composed.

NOTES

1 “Girl Whose Intestines Were Partially Sucked Out by Swimming Pool Drain Dies.” Fox News,

2 See Ch. 1.

3 Optical media, some might say, does not need to be redistricted outside of the fine arts or
technical schools—to do so would be the equivalent of academic gerrymandering. Others might
resist labeling visual composition as a new field at all—it is adequately covered by existing
disciplines. On the other hand, optical media are so likely to be encountered and employed—no
matter what a student’s specialization, from nursing to philosophy—that to deny them their own
space and resources would seem to demonstrate an insensitivity to cultural trends and economic
demands. Ultimately, the difficulty of placing the rhetorics of light and visual composition in an
institutional “home,” reflects not as much on the inviability of the subject as it does on the
intransigence of certain departmental models.

4 Gregory Ulmer, Heuretics: the Logic of Invention (Baltimore: Johns Hopkins University Press,
Patricia Harkin and John Schilb (MLA, 1991).

5 Ulmer, Heuretics, 3.

6 Ibid., 70. The riddles and dream reasoning of places are proposed in E. V. Walter, Placeways: A
Theory of the Human Environment (The University of North Carolina Press, 1988), 68. Although
Ulmer often cites Derrida, the reference to hauntology is implied. In “Specters of Marx,” Derrida
contends that we can never be separated from that which has been excluded, erased, or rendered
past. The dead continue to return, no matter how much we will them not to. Hauntology,
therefore, can be read over Ulmer’s repopulating of topos as a spirit-filled absence, or a chora. See

7 J. Nicholas Entrikin, The Betweenness of Place: Towards a Geography of Modernity (The Johns

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12 Ibid, xii.


16 Ulmer, *Electronic Monuments*. See the chapter “Categorical Disaster.”

17 Ulmer, *Heuretics*, 70


22 Ibid., 85.

23 Ibid., 105.


26 Ibid., 120.


Ibid., 105.


See Ch. 1.


Barthes, *Camera*, 87.

Ibid., 80.


Collage’s resources for discussing these tricks are rather limited. It engages notational systems indirectly through relays. Whereas a jazz musician or electronic artist before riffing/remixing will often learn the notational system of music—its octaves, tones, scales, and keys—collage relays do not demand as much notational fluency. Instead a system is built through linkages to prefabricated arrangements. Cutting straight to the tertiary trick, collage re-orchestrates the surfaces of other works. Pieced together from found-footage, stock images and pop music, these mashups transplant the shots and scripts of multiple media into a single corpus while actively subverting the original production context. The reanimated shots and scripts—their commingling into a distinct living work—stand in as the new autographic event and master notational system. The system on display becomes the one which combines the pieces, gives them rhythm, and orders them to stick. Mashups and collage compositions are often capable of provocative criticism, much like the political Scratch videos of the early 1980s punk scene. Dara Birnbaum’s *Technology/Transformation: Wonder Woman* is an early model of how meta-notational systems can affect a healthy dissonance with the icons and viewing habits of pop entertainment. But when made into a pedagogical method, this tertiary trick does not attend to how *topoi* are defined and performed. It also distances itself from the tricks of light and the tricks of the camera, which together originally delivered the material for the mashing. Birnbaum’s piece can be viewed at the Metropolitan Museum of Art. It exists online at http://www.dailymotion.com/video/x4y5e5_dara-birnbaum-technology-transforma_shortfilms. Birnbaum and Scratch videos are discussed in Chris Meigh-Andrews’s history of video art. Chris Meigh-Andrews, *A History of Video Art: The Development of Form and Function* (Oxford: Berg, 2006).


Following a pedagogical model that elevates individual expression at the expense of deliberate practice assumes a privilege for students that might ultimately yield fewer benefits from them. In a changing economic landscape, graduates are faced with mounting debts and an exclusive job market. Although camera media connects students to high-tech industries, rhetoric of visual invention without a methodology of expertise, runs the risk of not offering students enough training in optical *techné* to compete in those fields.

Elkins also calls for more attention to self-expression through a greater focus on *techne*. Although he is somewhat ambiguous about how the two might be implemented, he implies that specific techniques might be better emphasized through descriptive assessments. Unlike "judicative" critique, Elkins hopes descriptive dialogue will not "improve or change the student’s art, but to appreciate it and to help students to understand what they already do.” I would agree with this ambition, only I would distinguish improving the student’s art from improving the techniques the student applies to express that “art.” See Elkins, *Why Art*, 70.

"Cheating" may be an especially difficult form of play for some educators. But by trusting students enough to engage in different formulations of cheating, we open a discussion not just about the positive negation of subversive cheats, but we also introduce additional, perhaps more persuasive, mechanisms to help students articulate the destructive effects of other types of cheating.


67 Consalvo, Cheating, 102.


70 Pepper was rarely forthcoming about the title of “professor.” It was conferred on him solely for the purposes of better marketing the Polytechnic’s shows. See his volume, The Playbook of Metals, which refers to Pepper alongside academic scientists, as a “professor of chemistry.” The title was fabricated by the Polytechnic’s business managers.

71 The history of the trick is discussed at length in Jim Steinmeyer, Hiding the Elephant: How Magicians Invented the Impossible and Learned to Disappear (New York: Carroll & Graf, 2003).


73 Jim Steinmeyer, Hiding, xxi.

74 Ibid., 22.

75 Consalvo, Cheating, 95–98.


82 Ibid., 280.

83 Ibid., 285.


85 Ibid., 95.

86 Ibid., 93.

87 Ibid., 97.


92 Ibid., 244.

93 Ibid., 246.

94 Ibid., 9.

95 Ibid., 246.


99 Kahn.

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