

Introduction

“Welcome to the Failure Age”

I. THE FAILURE AGE

Western culture’s simultaneous embrace and denial of failure is frustrating.¹ On the one hand, failure touches everything from environmental breakdown and unwanted computational errors to business, social life, and personal psychology. On the other hand, only a very narrow constituency acknowledges these fiascos as anything beyond mere fashion—the vast majority of people and institutions want to rid themselves of the slightest hint of failure at the earliest possible opportunity. In Silicon Valley, for instance, entrepreneurs are encouraged to heedlessly “Fail Fast, Fail Often,” regardless of risk. On “Fuck-up Night” at the annual FailCon conference, founded in San Francisco to address digital failure, entrepreneurs are invited to share their startup mistakes with a packed audience. Fuck-up Night started in Mexico City in 2012, but has since become so popular that it now convenes annually in more than seventy cities in twenty-six countries around the world (in short, it is a huge success).² One might also cite Elon Musk’s fail-friendly autopilot software for Tesla; RAND-style zero-sum scenarios;³ and General Electric’s Six Sigma, a program aiming to measure and eliminate at least 99.99 percent of potential defects in every GE product.⁴

Once found by hackers, even undetected high-tech errors, known as “zero-day exploits” (because a company has spent “zero days” trying to resolve the yet-to-be acknowledged problem), can sell upwards of \$50,000 on China’s black market, a precarious “dark net” of hackers and high-tech competitors who participate in activities ranging from traditional hacking disruptions, to extracting unforeseen errors in software, to finding entry points into a product’s highly secret proprietary code. With Apple’s iPhone, one single line of unobserved erroneous code, if caught

by hackers, can be sold on China's black market for millions, leading to lucrative profits in the production of cheaper knock-offs.⁵

Beyond high-tech vogue, failure shapes the contours of contemporary culture. In 2017, the Swedish Innovation Authority in conjunction with curator Samuel West launched the Museum of Failure in Helsingborg, Sweden, and at the A+D Architecture and Design Museum in Los Angeles. The exhibition featured a collection of "failed products and services from around the world," including the Apple Newton, Bic for Her, Google Glass, Harley-Davidson Cologne, the Sony Betamax, and Swedish Fish Oreos. The idea was inspired by West's 2016 visit to the "Museum of Broken Relationships" in Zagreb, Croatia (2003–), an exhibition dedicated to failed love relationships. Upon his return, West extended the concept to industry at large. According to West, "80 to 90 percent of innovation projects fail and you never read about them, you don't see them, people don't talk about them."⁶ His claim is endorsed by market research firms like Fahrenheit 212, whose co-founder Mark Payne contends the number is actually closer to 90 percent.⁷ One might thus infer the annals of technology deal with only 10 percent of the data available to them. From this perspective, it is not surprising to find our so-called innovation age steeped in failure.

On a deeper level, humankind has always been marked by failure. "Life is what is capable of error," Michel Foucault wrote in 1991, and indeed, because we *can* err, it is also in our capacity to grow and change thereafter. This insight returns us to what many philosophers have deemed the essence of life itself: failure and error, not only as circumstances of existence, but as the very conditions of possibility for its flourishing. Similarly, in *Being and Time* (1927), Martin Heidegger invokes the Latin fable from Hyginus, *Cura*, meaning care or concern. In this myth,⁸ Cura is crossing a river and pauses to mold some clay. In selecting a name for her creation, she is caught in a dispute between Heaven (Jupiter) and Earth (Gaia). Saturn, god of time, decides that Heaven will have the clay's spirit in death, and Earth will have it in life. Since Cura is its creator, she will keep it in her care as long as it lives. Saturn names her creation *homo* or, "human," and thus humans, insofar as they are alive, live between two worlds, in and through care. Life is a gift in which we always owe a debt; perpetually "falling" as Heidegger puts it; or simply, failing in our alive-ness.

Clearly the denial of failure is a problem deeper and older than any high-tech trend and yet, we have permitted myths of unfettered success and advancement to shape our cultural ethos for centuries. The explosion of industrial developments offers one set of examples, as does postwar consumer culture. Together, these relatively modern movements have made it seem safe to expect an endless chain of newer and better things for oneself and one's family. However, we can no longer afford to assume that modern life is always progressing.⁹ *High-Tech Trash: Glitch, Noise, and Aesthetic Failure* illustrates this by weaving a narrative of disenchantment against a backdrop of breakdown and noise. To map

this archaeology of aesthetic failure, apropos of a culture ill-equipped to deal with it, the book abstracts from subjective, personal failure and disappointment to see them as meaningful symbols of a broader human struggle. Specifically, by connecting twenty-first century digital aesthetics and contemporary media art, to critical issues in the history of high-tech, the book elucidates what it means to be an error-prone, fallible human in an age of hyper technology; to fail again and again without recourse to anything else. After filling in the contours of the “Failure Age” below, I address my analytic methods in aesthetics and media studies and define the book’s five key concepts—glitch, noise, error, trash, and failure. I conclude this Introduction with an overview of the chapters in the book.

In the early 1990s, pop culture theorist Joshua Gamson shed light on the patently American cultural fascination elevating a person to the status of a celebrity and then, at the height of their stardom, finding perverse pleasure in catalyzing—authoring even—their downward spiral.¹⁰ Deluded hubris must be returned to the soiled earth plane. This is our cultural legacy, Gamson infers, and it is equally applicable to our blind faith in the omnipotence of science and technology. The accomplishments of medicine, media, and machines are certainly magnificent and should not be undervalued, but science and technology, like humans, are in no way perfect or beyond critique. Put differently, to make concrete and lasting change, we must adopt a more balanced understanding of innovation as intrinsically bound to failure. A fruitful life, or rather, life at its most fundamental level, as Heidegger suggests, is always a negotiation between falling and advancing.

How do we develop this dynamic on a practical level? First, we must address the denial of failure as a largely unresolved problem and seek out new ways to acknowledge it while still finding security, stability, and success in life. The largely superficial messages from Silicon Valley and self-help cultures—to embrace weaknesses and defect, to “accept yourself as you are” is hardly what I have in mind. Rather, I suspect we are missing one of the most valuable strategies for long-term success. By working *with* our failures and shortcomings, and facing them head-on, we can grow in new and intellectually humble ways.

Unfortunately, such thinking could not be further from actual practice. Despite failure’s current fashionability, research reveals most entrepreneurs “fear any kind of failure.” In Silicon Valley, the “pressure to succeed is so intense that some new businesses instead find themselves looking for shortcuts,” calling on “growth hackers” to create a veneer of success.¹¹ Even Six Sigma’s aim to measure all manufacturing defects reflects a concern less with error than with an age-old addiction to perfection. On a practical level, it is equally obvious that no one actually wants to fail, even if we try to reassure ourselves, “It’s okay, you’re only human.” But how else can we change and become better humans if we do not find a way to fail safely and make real mistakes?

The widespread disavowal of failure is even more surprising given that the so-called innovation economy was only made possible *through* mass failures. As

each new, allegedly better gadget appears, Adam Davidson explains, it becomes that much easier to replace the next worker, object, or outdated piece of software, ensuring accelerated cycles of innovation, which is also to say, the proliferation of failure.¹² As the “slow culture” of nineteenth-century agriculture transformed into a culture of mechanical production, Davidson argues, we doomed ourselves to be eternally dependent on these successions.¹³ Our rapacious appetite for “new and improved” gadgets and toys hastened cycles of obsolescence. And thus, “we”—privileged “First world” citizens—find ourselves surrounded by a surplus of quick-and-cheap “made in China” objects, from shiny new things to unwanted trash and waste, some of it still accepted back at the same exploited offshore sites that manufactured it. A case in point is Apple’s recent decision to purposely slow down “older” iPhone models, accelerating their obsolescence and catalyzing consumption of a negligibly newer model.¹⁴ This is only one example of thousands that happened to bubble up in the mass media.

Even the seemingly benign plugs and portals on the majority of our digital devices are strategically engineered to become outdated within a few years, forcing one to purchase bulky adaptors in the interim, and eventually, an entirely new computer system to be compatible with the latest series of wires and plugs. Stefan Johannes Al claims that electronic products “are deliberately designed with limited backward compatibility,” through a “series of careful omission of features that its future model will have, or designed with a limited lifespan. In short, these products are designed to fail.”¹⁵ We have allowed all of this to proceed unchecked, ushering in novelty objects under the auspices of the new and improved, but whom do these pseudo-improvements actually serve? The innovation economy must be reassessed and understood anew as imposing a series of great deficits on us—consumers and users—and the planet. The iPhone may be among the 10 percent of technological successes in the innovation economy that West and Payne postulate, but from this perspective, it too will all too quickly become obsolete with the next model, at which point it basically becomes trash. Let us also keep in mind that in the case of the slowed-down iPhone, the obsolescence cycle is driven not by culture or competitors, but by the company’s own marketing and engineering teams.¹⁶ We live in a time where, as Davidson points out, high-tech success has become exceedingly short-lived, characterized by a few “loosely knit” experiments in “decentralized networks” that gain recognition—by way of sales and stock indexing—for a precarious length of time. Uber, Lyft, Juno, Airbnb, Blu-ray, eBay, and their like will all fail in the end. To Davidson’s point: to claim we are in an age of innovation is to acknowledge we are saturated with failure.

High-Tech Trash speaks to this paradox. The book analyzes creative strategies with glitch, noise, and error to chart the development of an aesthetic paradigm rooted in failure. I theorize the ways in which technologically influenced creative practices, primarily from the second half of the twentieth and first quarter of the twenty-first centuries, critically offset a broader culture of pervasive risk and

discontent. And yet on we go, striving to do better and acquire more, despite the inevitable disappointment derived from seeking existential solutions by way of material wealth and consumption. Why? And can emergent media strategies help us to see or do things any differently?

II. FAILURE'S CRITICAL AESTHETICS

In creative spheres, failure is dealt with quite differently than it is in industry. Here, aberrant creations marginalized in the business world are welcomed back into the fold as inspiration for artmaking. Take, for instance, the American artist John Baldessari's black-and-white photograph *Wrong* (1966–68) which challenges unconscious assumptions about “correct” representation. In *Wrong*, the artist stands directly in front of a palm tree, visually aligned with the vertical axis of its trunk. As a result, the tree “appears to sprout from his head.”¹⁷ According to the norms of traditional portraiture, the overlap is “off,” deemed an error relative to the standards of “good” taste. And yet, Baldessari's error is deliberate. He intends to incorrectly depict the scenario in order to bring to light the invisible norms governing the conventions of visual correctness. Baldessari's *Wrong* is one simple “error,” which, Abigail Solomon-Godeau argues, when stylized in this way, ends up creating a “correct” conceptual critique of visual convention.¹⁸ In short, it is no longer an error at all. Granted Baldessari's edifice depends on an understanding of error as relative to truth and fact, which opens up another can of worms not addressed until the next chapter, for now, we can take his point at face value. As an analog, noncomputational, conceptual “error,” Baldessari's photograph is a useful starting point for this book's discussion. It forces us to think of the related phenomena of glitch, noise, and failure as metaphors: stylistic modalities that extend beyond the physical technologies they signify. Compare this with my opening scene from business fashion, where the embrace of failure *seems* welcome, but at the end of the day, is deemed shameful. As mere fashion void of critical analysis or historical contextualization, failure aesthetics are void of meaningful and systemic change.

Does digital technology herald a “new dark age” and “the end of the future,” as British writer James Bridle suggests? Bridle argues “something is wrong on the Internet,” but from the perspective of those who value creative innovation, the case is in fact the opposite. He outlines the ways in which algorithmically assembled children's videos found on YouTube are automatically queued with disturbing outcomes, ranging from Peppa Pig drinking bleach instead of naming vegetables, to Elsa from *Frozen* appearing in sexually compromising positions with Spider-Man, to violence and full-fledged abuse.¹⁹ Granted the videos are disturbing and morally offensive, especially to children, from a logistic perspective, these inserts prove the system is accurately following its own protocols. The perpetual iteration of identical sequencing leaves the door wide open for a potential hacker's exploitation of



WRONG

FIGURE 1. John Baldessari, *Wrong* (1966–68). The subject is placed directly in front of a palm tree so it appears to be sprouting from his head. Courtesy of John Baldessari.

the automated search algorithms. There is thus something very *right* about the ways in which ill-intentioned programmers exploit oversights in the system.²⁰ Unsurprisingly, following a host of parents' complaints, YouTube changed its protocols for video filtering and removed the videos in question. And yet, a recent report demonstrated YouTube's algorithm was still "encouraging pedophiles to

watch videos of partially-clothed children.” As Stokel-Walker explains for the *New York Times*, “creators . . . recognize the flaws in YouTube’s algorithm” and exploit them accordingly. For example, “the algorithm relies on snapshots of visual content, rather than actions,” so as long as it recognizes “Peppa Pig in the frame, it doesn’t matter what the character does in the skit.” This awareness allows creators to exploit the algorithm’s logic to support “bad behavior in viewers.”²¹ Both examples of YouTube hackings can be construed as a low-level “zero-day exploit” where the damage was, and hopefully will continue to be, promptly amended by the governing entity, even if their solution is only temporary—until hackers find the next exploit.

III. METHODS

As new technologies play an increasingly prominent role in modern life, the need to place them at the center of the critical analyses of visual art, media, and design becomes unavoidable. Accordingly, this research draws on two general fields: visual studies (aesthetics) and media history and theory (media archaeology).

Visual Studies

Broadly speaking, the field of visual studies investigates images in history and culture. This book focuses on the visual phenomenological and material aesthetics of high-tech objects and the creative works they have been used to produce.

Classical research in aesthetics derives from studies in philosophy and theories of representation. This book draws on this tradition, focusing on aesthetic philosophy, including discussions of representation in chapter 3 (Plato, Kant); Heinrich Wölfflin’s notes on style in chapter 5; Michael Fried’s observations on contemporary photography in chapters 4 and 7; an analysis of Edmund Burke’s and Immanuel Kant’s theories of the sublime in chapters 5 through 7; Gilles Deleuze’s orthogonal take on these classical concepts (chapters 5 and 6); and Sianne Ngai’s contemporary critique of aesthetic categories (the end of chapter 3). I also cull from traditional and contemporary theories of color (chapter 3) and conventional histories of photography (chapters 4 and 7) to update them for a digital age of high-tech trash by positioning them alongside more recent theories of digital signal-processing (chapters 1, 4, 5) and the new aesthetic practices conditioned therein.

A long history of aesthetic philosophy has also paved the way for modern offshoots in phenomenology. Defined as an investigation of being and appearing in the world, phenomenology is committed to finding new models of human experience, perception, and freedom that resist rational and normative conventions. However, while the classic phenomenologists argue that an essentially ahistorical bracketing (Husserl) of authentic human experience (Heidegger) and a pure perception (Merleau-Ponty) is possible, I update this claim for the present to argue that human and machine perceptions are inextricably fused in what I

have previously theorized as the “algorithmic lifeworld.”²² In *High-Tech Trash*, I further concede that digital electronic technologies have become integral to almost all forms of creative production (chapters 1 through 7), the mediation of experience (chapters 1, 2, and 4), and the formation of cultural knowledge writ large (chapter 1).²³

Media Archaeology

In the equally long history of media and communications theory, many survey histories have assumed uncritical narratives of technological progress.²⁴ From cave painting and writing, to the printing press, telegraph, radio, cinema, television, video, and digital computing, the story until recently went: modern man has progressed; developing reason and science to overcome the challenges of the “natural” world. Strides in industry support such claims, illustrated through the production of smaller, more compact, and compressed media capable of transmitting more data in less time to more people. In recent decades, however, these one-sided histories of progress, with cliché benchmarks and grandiose heroes have come under the gun of a new generation of “media archaeologists” committed to critical revisions of media history.

As the second of my two analytic methods, media archaeology plays a subordinate role in the pages that follow. Nonetheless, it merits a brief exegesis. Defined as the archival examination of the materiality of media objects, media archaeology breaks from traditional models of epistemology and hermeneutics to argue that the frame, window, page, or specificity of a material platform through which informational content is delivered, is just as important as the content itself. The field derives from both Foucault’s concept of archaeology, and his and Nietzsche’s concepts of genealogy—a set of relations that run horizontally, and in opposition to, official, chronological histories. Foucault set the stage when he ironically referred to the archive as the “historical *a priori*”—placing concrete, material history and relations prior to the formation of concepts and knowledge. The actual artifact or material stuff of the world is here, reconstrued as the condition of possibility from which all knowledge in culture can emerge. The historical *a priori* is an *a priori in history*. The concept harks back to Nietzsche, who argued in *The Genealogy of Morals* that the relevant material of a genealogy is based on shattering disillusionments that a subject causes a presumed effect. He gave the example of a lightning flash: where the “popular mind” separates the flash from the lightning, or, the doer from the deed, and “takes the latter for an action,” called “lightning,” the two cannot in fact be separated, he argues, “‘the doer’ is merely a fiction added to the deed.”²⁵ It is the “seduction of language,” he continues, “which conceives and misconceives all effects as conditioned by something . . . by a ‘subject.’”²⁶ Nietzsche’s discursive focus dealt with language and its effects, but the underlying insight was adopted by Foucault, as noted, and together, their work helped pave the way for what has become the field of media archaeology proper.

In recent decades, the growth of media archaeology has been largely influenced by such scholars as Friedrich Kittler, Siegfried Zielinski, Wolfgang Ernst, Lisa Gitelman, Wendy Hui Kyong Chun, Erkki Huhtamo, and Bernard Stiegler. Collectively, the project aims to place the materiality of a technology in the position of what Kittler provocatively calls, the “*media a priori*.” Zielinski refers to this approach as constitutive of a “deep time” of the media; a cyclical and alternative time, forcing thought in another, nonlinear direction.²⁷ The Brechtian method of “direct address” is an apt metaphor. The capacity to cut through theatrical pretense to call attention to the singleness of the present moment encourages “thinking as intervention,” not as catharsis or self-expression. In the following pages, media archaeology unfolds through my material (and aesthetic) analysis of glitch and noise. Glitch is not theorized as a free-floating form of personal expression or agency of individual desire, but rather—from the point of view of media archaeology—as a necessary and often unconscious mode of structuring existence in a digital age which valorizes information, transparency, and speed against a political and historical background chock-full of noise, static, and breakdown. In this way, a media archaeological analysis of “perception” is not about looking at the surface of images or things in the world, or even about vision. Rather, perception is historically mediated through a set of power and knowledge relations that are often invisible, concealed, and unconscious. Together, my two core methods in visual studies (aesthetics) and media history and theory (media archaeology) allow me to demonstrate how glitch, noise, and error constitute dominant forms of technologically-mediated perception and knowledge-forming practices in the historical present.

The Myth of Transparency

In the digital age, critiques of visual transparency rise to the top of the to-do list. The history of Western representation turns on the development of perspective, defined here as the illusion of three-dimensional space represented on a two-dimensional plane. Because the following chapters discuss work that depends so heavily on undermining Western perspective’s logic of false transparency, a brief exegesis is in order.

Theories of perspective date back to Renaissance designers Filippo Brunelleschi (1377–1446) and Leon Battista Alberti (1404–72). In Alberti’s 1435 book *On Painting*, he identifies the importance of using “correct” line and measurement to create the illusion of depth on a two-dimensional surface. He also emphasizes the need to conceal the perspective lines used to create the illusion, because letting a line show would generate a *fractura*, or “crack,” in the “transparent” viewing experience. The contradiction is clear: perspective lines are essential to structuring the “visually transparent” composition and yet, to create a successful illusion of transparent reality, they are precisely what needs to be concealed in the final viewing.²⁸

Transparency has reigned supreme in Western visual culture, and it continues to play a pivotal role in everything from architecture and interior design, to interface aesthetics. In contemporary media culture, new forms of transparency are fostered through the rhetoric of invisibility. “We believe that technology is at its very best when it is invisible,” Apple’s 2012 iPad trailer asserted, epitomizing high-tech’s uncritical adoption of transparency. Similarly, Kevin Kelly, founding editor of *Wired* magazine and former editor of the *Whole Earth Review*, argues that a technology is only successful when it is invisible. The “best technology in the future is invisible,” he explains, “things that draw your attention are not good enough.”²⁹ Presumably, to draw one’s attention while using a device would allow the matter of the medium to be seen and heard and, therefore, lack the illusion of immateriality required for transparency. But identifying the matter in the medium is precisely what it means to do a *material* history of technology. Because we are so immersed in the present, in our screens, texts, and compressed channels of communication, it is difficult to see the palpable nature of the noise and grainy matter that surrounds us. In this way, the matter of new media—insofar as it is still new—is also (temporarily) transparent, precisely as Kelly desires. In this study, however, the materiality of our otherwise invisible media noise is brought into focus by way of aesthetic and archaeological critique.

In 1970s film culture, around the same time Jacques Derrida and Roland Barthes were calling out the hidden implications of structuralism, cinema scholar Peter Wollen developed a complementary strategy in his analysis of the French avant-garde.³⁰ Wollen demonstrated how the frame structuring the cinematic image disappears from awareness in the same way that a window’s frame recedes from our conscious experience as we focus instead on what lies “behind” it. In short, as attentiveness to the technical apparatus withdraws and the “content” of an image moves to the fore, it successfully presents itself as an autonomous, unbarred image of the world. Cinematic transparency is thus achieved. Wollen considered Jean-Luc Godard’s use of “foregrounding” as exemplary of the introduction of noise into this process.³¹ Godard’s techniques are now old hat in media culture, but at the time, they broke illusions of immediacy by using devices such as the famous “jump cut,” direct address, and including a camera in the content of the image—a technique that dates back to Sergei Eisenstein’s prewar radical cinema.

Prior to Wollen, French philosopher Gilbert Simondon observed a related strategy in Le Corbusier’s architecture, which he termed “phanero-technics.”³² *Phanero* comes from the Greek meaning to show or reveal. The compound implies a built structure that reveals the materiality of its technical artifice (internal structure), as also the conditions of possibility for its surface appearance.³³ More recently, studies in the history of science have provided corresponding theories. In a 2012–13 seminar at the University of Chicago, Peter Galison introduced the term “building crashing thinking” to describe a nonchronological back-and-forth between subjectivity and modern technology.³⁴ For Cornell University professor

Steven Jackson, the twenty-first-century is characterized by “risk and uncertainty, growth and decay, fragmentation, dissolution, and breakdown.” Jackson thus recommends that, instead of more “innovation” or “creative destruction,” we adopt a new critical model rooted in “broken world thinking.”³⁵

This book builds on these theories and critiques of transparency in communications and cinema studies to argue that in the digital age, instead of looking at technology when it is working at its optimal speed and capacity, we need to use the frameworks of error, glitch, and noise, as Jackson suggests, to analyze how our ostensibly “new” and “better” media break, revealing new insights at their seams. In this way, the book also falls within a newer legacy of scholars working in a vein alternative to numerous nineteenth- and early twentieth-century models that define culture and technology through narratives of progress and unprecedented advancement, contingent on the presumption of endlessly expanding frontiers.

Even within current media archaeology studies, we encounter such naïve tendencies. Traditionally, the field has drawn from pioneering critical theorists who reflect on media at the height of its optimization: Jacques Derrida, Siegfried Kracauer, Anne Friedberg, Miriam Hansen, Mary Ann Doane, Jonathan Crary (especially his recent analysis of the incipient demands on attention in 24/7 global culture),³⁶ and Walter Benjamin’s theorization of mechanical technology as a “complex training o[f] the human sensorium,” which brings to light the ways in which *functioning* media engender shifts in perception. Marshall McLuhan’s dictum, “the medium is the message,” also highlights the formal importance of an optimized and standardized media platform. Derrida’s *parergon*, like Wollen’s notion of foregrounding, further presumes that the frame and content are always functional. While this scholarship has been crucial to the first and second generations of media archaeology, and to the understanding of the psychic, social, and cultural effects of technology at their apex of efficiency, it nonetheless fails to discuss how technology influences and structures experiences at points of failure and breakdown.³⁷ In response, this book proposes a refocusing of media studies away from the formal attributes of media in their ideal state, to consider instead their precarious status in a much larger system of ephemeral and dynamic failure.

IV. KEY TERMS

Glitch, error, failure, noise, and accident all imply devaluation. Like waste and trash, they are unwanted and of no obvious use. Across the board, culturally normative goals for them remain the same: maximize their negligibility. This is of course expected, if we want things to work, have a better quality of life, and live in clean, healthy environments. My objective in analyzing these terms is not to assess their efficacy in industry, but rather, to analyze their eccentric appropriation in emergent aesthetic practices. To do so, it is necessary to first examine each term’s

unique linguistic, cultural, and historical contingencies, after which they can be used somewhat interchangeably throughout the book.

Noise

The physical sciences treat noise and sound as homogenous vibrations through the same medium (air), but dramatic differences emerge in culture. What counts as noise in culture is largely subjective, defined by social norms, dependent on distinct phenomenological, biological, or computational contexts. Take the example of a city. Some noise may be perceived as passive, fading into the background of experience (street crowds or construction sites), while other noises protrude into consciousness, halting habit or thought patterns (exceedingly loud drilling noises, a fire engine rushing by, static storms on a cell phone). Regardless, few would disagree that noise defines the modern world. Sound scholars have dated the origins of our noise environment to the Industrial Revolution. Others, like Emily Thompson and Michel Serres, argue that we have always existed “in” noise; in Serres’s words, “surrounded by an inextinguishable [noise] . . . we cannot close our door to.”³⁸ When Serres’s work emerged alongside poststructuralism and deconstruction in the 1980s, he positioned noise at the baseline of human culture; as “always already part of the signal, [a] blindness inescapably accompanying vision” from which no definitive meaning or stability could be had.³⁹ For Thompson, there has also always been a constant sonic background in human civilization, intensified through urbanization and industrialization.⁴⁰ Similarly, Paul Virilio argues that noise (and accident and error) are pre-programmed into any cultural object from the moment of its inception. For him, such noise predates the industrial era, but is aggravated thereafter. Even as we see and seek to experience only the clean “innovations” of new media and move to widespread “digitalization,” we require ever more progressive forms of optical “correction” of images and representations. And yet, as this occurs, we only pay attention to one side of the equation. By focusing only on optimization, we not only decrease awareness of noise, but also, we increasingly lose the ability to detect its inversely proportionate growth. In the communications environment, machines become opticians, Virilio suggests, reconstructing perceptions as true versus false and correct versus incorrect, a process in which the mechanically deemed “invalid” results are deleted from the system, and consequently, from culture and human experience. “It is extraordinary to see to what extent accident was censured in the name of the cult of happiness, the cult of success,” he writes; “consumer society demands optimism.”⁴¹

Roland Barthes submits a slightly different definition of noise through his distinction between the physiological and psychological. For him, physiological noise is a sound, subconsciously heard as acoustic waves interact with the body, while psychological noise is actively listened to and consciously perceived.⁴² Is his sentiment a romanticized one? Idealizing a division between mind and body implies that sound perceived through the body is unconscious and mysterious,

and by the same token, that sound perceived by the mind is conscious and acute. Even common sense suggests otherwise: on any given day, chirping birds, traffic noise, or street musicians may or may not be consciously experienced.⁴³ Barthes reiterates the distinction in his essay “The Grain of the Voice.” For him, the grain of the voice is the body as it sings, the “hand as it writes, the limb as it performs.” Perceiving the grain in a piece of music occurs as the “emergence of the text in the work” itself; to see and hear grain is to connect with the materiality of the medium “performing itself.”⁴⁴ The “grain” of a medium is erotic and “outside of any law,” which is to say ahistorical, unabashedly romantic, and thus problematic in this book’s aims to contextualize glitch and noise in history and culture.⁴⁵ Moreover, Barthes notes, in recent years, there has been a “flattening out of technique,” an evisceration of grain to produce clean sonic “perfection” that leaves behind “nothing but [the] pheno-text,” or simply, the cultural-linguistic meanings.⁴⁶ These claims resemble those who mourn the loss of analog to the flat digital files that began to dominate in the 1990s. Barthes’s attention to grain as a kind of bodily noise is useful for thinking about glitch across media platforms, but his inability to detect noise in the present is merely a symptom of the newness of new media taking its novel effects.

For Michael Godard, Benjamin Halligan and Paul Hegarty, noise operates on the thresholds of normative social interactions, making it a powerful political tool that can be used to control populations, or unveil—“foreground” to use Wollen’s terminology—power relations.⁴⁷ Jacques Attali likewise defines noise as a “means of power *and* a form of entertainment,” a refuge for “residual irrationality,” and a potentially discordant force in the “audition of a message,” associated in many cultures with the “idea of the weapon, blasphemy, [and] plague.”⁴⁸ Consider the use of noise in biological warfare or military defense systems, such as the “Long-Range Acoustic Device” (LRAD), or “sound cannon,” an acoustic hailing device and sonic weapon developed by the LRAD Corporation and currently in use in the U.S. Navy. In this way, noise, as understood through culture, is always political. For Raymond Brassier, noise must perform some form of interference in cognitive processing in order for it to be considered noise at all. When noise disrupts cognitive schemas and perceptual fields, it changes our experience of the world.⁴⁹

By the same token, noise can also be used therapeutically. In 1763, the French botanist François Boissier de Sauvages de Lacroix noted in his *Nosologia Methodica Oculorum* the likely mythic belief that some noise could help cure tarantula bites. Today we are all too familiar with the use of certain sounds to guide meditation or relaxation practices. White noise machines are commonly used to generate one “color” of noise and mask out another “unwanted” noise during work, sleep, or meditation. Intentionally generated noise can also be used aesthetically, to layer sonic communications. Avant-garde musicians from Arnold Schoenberg to noise rock bands (see chapter 2) have worked in this tradition. In this book, noise is

treated as an abstract concept, applied almost exclusively to the *visual* field. To reconstrue noise from the sonic to the visual domain, it must be treated as a metaphor, akin to abstract line and color. In the city metaphor, visual noise may take the form of distracting advertisements or electronic signs, graffiti, or dust storms from a construction site. Noise is a part of the mediated environment; often ignored but always present.

In what is now referred to as “noise studies,” broadly construed, definitions of noise differ significantly.⁵⁰ Peter Krapp’s *Noise Channels* offers a critique of the first generation of new media art, calling attention to the precarious line between information and noise. Error, frustration, and breakdown are not only inevitable with new media, he argues, they define them. Krapp’s case studies include analyses of the net art duo JODI, Max Mathews, John Cage, Brody Condon, Nick Montfort, and Cory Arcangel. *High-Tech Trash* also analyzes new media art and the precarious line between noise and information, but it focuses on new genres in glitch art, datamoshing, and eco photography. Krapp is concerned with net art of the 1990s: hypertext, hacking, game theory, and database narratives, whereas *High-Tech Trash* is concerned with the twenty-first century visual rhetoric of anti-communication that speaks more to economic, environmental, and human registers than to the formal aspects of game culture or hypertext narratives. Studies in *Error: Glitch, Noise, and Jam in New Media Cultures* (2011), edited by Mark Nunes, also address digital culture and the ways in which artists use noise to disrupt dominant cultural values, albeit focusing on glitch in music, whereas *High-Tech Trash* focuses on *visual* glitch aesthetics in art, media, and contemporary photography. Lastly, this book, also unlike its precursors, links emerging and experimental aesthetic practices to broader historical and philosophical discourses on error and failure in the environment.

Error

Etymologically, “to err” means to waver from a predetermined mark or axiom. The original Latin meaning of *error* is “wandering,” implying an almost creative response to a dilemma, a far cry from the seemingly fixed judgments associated with contemporary uses (as chapter 1 accounts). The concept also retains traces of objectivity (laws, axioms, moral judgments) from which an error *can* occur. Put differently, “error,” glitch, and noise have been culturally constructed as binary concepts where what determines right and wrong, noise or music, mistake or intention, is determined by history and convention. Chapter 1 analyzes the ways in which post-Enlightenment concepts of error have begotten widespread presumptions that *any* error is an unintentional deviation from a code or convention. In my metaphor of the city, we might think of error as a clogged sewer or traffic jam. Engineers and city planners attempt to determine rules and bylaws that will maximize the efficient flow of data to prevent such errors from occurring, even though not all possible errors can be accounted for in advance.

Glitch

Simply put, a glitch is a nice way to say “screw-up.” The word derives from the German *glitschen* meaning to slip, the Old High German *gliten*, meaning to glide, and the Yiddish *glitsHEN*, meaning to slip or skid off course.⁵¹ In computing, a glitch denotes a problematic, annoying, or unintended error that, like the definition of error, tends to be negligible, quickly absorbed by the larger, still-functioning system. For example, a website stalls or fails to load, an online video halts or stutters in the middle of a scene, or strange, unexpected color artifacts splatter across a newly rendered graphics file. When a glitch appears, it indicates a relatively rare moment of unplanned, unprogrammed mediation that, for many glitch artists, provides an opportunity to connect on-screen phenomena with off-screen computational abstractions. My reasons for calling attention to glitch (rather than error, accident, or failure alone) are, again, elucidated through an analysis of emerging trends in media art.

Glitch Art

The glitch art genre is marked by garish, noisy colors. It emerged in the late 1990s and early 2000s through the works of people like John Cates, Rosa Menkman, Paul B. Davis, and Takeshi Murata, and, as I argue in chapter 2, bears strong links to the avant-garde. For this generation of artists and media makers, computer glitches provide the fodder for a new style of art-making. A number of glitch artists and theorists define the genre’s source materials along remarkably similar lines. Kim Cascone defines glitch as “a rupture in the continuum of an idealized artifact. . . a subversion of the smooth and technically perfect surface.”⁵² Olga Goriunova and Alexei Shulgin concur, a “glitch is a singular dysfunctional event that allows insight beyond the customary, omnipresent and alien computer aesthetics.”⁵³

Some glitch artists further distinguish between “wild” and “domesticated” glitches.⁵⁴ Wild glitches are found “naturally” in one’s computing practices, including encounters with slow image-processing speeds, low bandwidth, jilted video display, or poor graphics capacities. Wild glitches are spontaneous and undomesticated, they occur unintentionally and without provocation, but after they are detected, they are “caught” and harnessed for use in an artwork by using anti-debugging techniques, a simple screen capture, or graphics editing software (akin to “found art”). In contrast, a “domesticated” or harvested glitch is purposely created and manufactured for artistic use.⁵⁵ Examples include data bending and hacking code, alongside numerous image plug-ins and video conferencing software, such as VPS Glitch Bitch, Sugar Bytes’ Turnado, Smack My Glitch Up, or CU-SeeMe, which all come with prêt-à-porter glitch effects. Conversely, one could simply apply a filter in Photoshop to achieve a desired glitch effect, avoiding coding issues altogether.⁵⁶ In sum, this distinction between wild and domesticated glitches is only useful in some contexts, since, like any distinction, it falls apart the harder we press it. For instance, if we were to reinterpret glitches in terms of

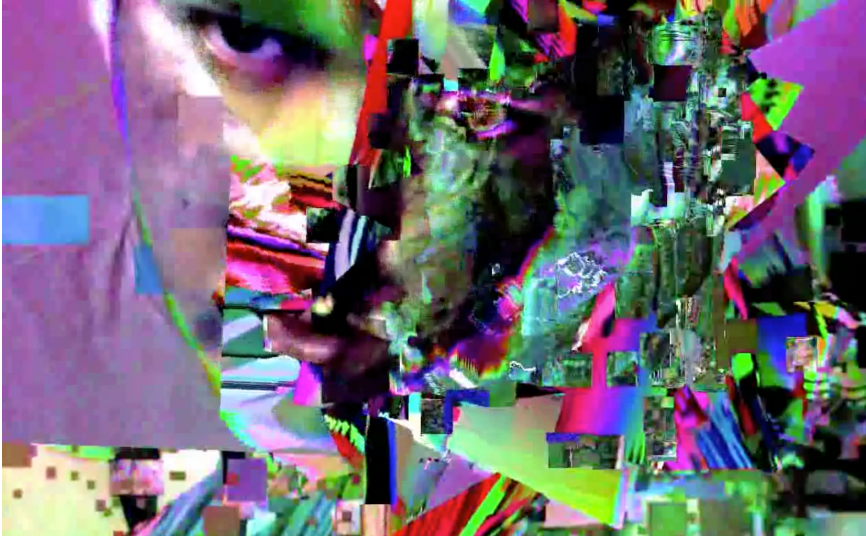


FIGURE 2. Andrew Benson, *Status Update, 2am* (2011). Color video, 36 seconds. Portrait of the artist awake at his computer at 2 A.M. Courtesy of Andrew Benson.

“authentic” or “non-authentic,” we would encounter a host of dead-end problems related to computer simulation, the “art object,” and image copying. For this reason, my focus throughout lies less with the origins or procurement of a glitch, and more with the unique contextual choices and critical and creative effects accomplished through final results.

As indicated, where a glitch artwork begins and ends can be unclear. Confusion arises in part due to the structural logic of digital media coupled by the difficulty determining the borders of a virtual page, site, or data network. Uncertainty also arises from the ways in which glitch artists intentionally interfere with assumptions about the internet and our experience of it, as implied in the above-noted definitions. Glitch art is made, appears, and disappears within ongoing cycles of deterritorialization and reterritorialization, temporarily providing an opening to see things contrarily or script a “minor literature,” as Gilles Deleuze and Félix Guattari put it.⁵⁷ Put differently, glitch art engages a rapid game of control and its renunciation; a flirtation with breakdown, chaos, and total immersion in technology, followed by a level-headed bait and switch. In this way, we might even see glitch art’s flirtation with failure as analogous to Silicon Valley’s, the key difference being the former’s incorporation of glitches for their aesthetic merit, versus the latter’s attempted obliteration of them.

Glitch art has also been connected to “dirt style,” “dirty new media,” and the “new aesthetic” that addresses “machine seeing,” which I do not endorse. As



FIGURE 3. Jil Sander Navy, "Spring 2016 Ready-to-Wear." This colorful, pixel-patterned top illustrates fashionable glitch styles.



FIGURE 4. *Adventure Time*, season 5, episode 15, “A Glitch in Time” (2013). Special episode directed by David O’Reilly. Jake and Finn are caught in a “glitch” in the source code.

Harvard’s metaLAB researcher Mathew Battles notes, the notion bears obvious problems in its romantic projection of human sentiment and “poetic powers” onto computational processes.⁵⁸ The desire to see machines as thinking and feeling beings perpetuates naïve mythologies that are of little use here. By the same token, criticality is not intrinsic to glitch art, nor to the way in which many glitch artists talk about their work. An appropriated computer glitch may reveal some aspect of computational processing, but this alone is far from constituting a full-fledged artwork, let alone a critique of the computational ontology governing it. And yet, a number of self-identified glitch artists couch their practice in just such terms, claiming the same kind of political and aesthetic effectivity as the avant-garde. Glitches *may* disrupt convention and cultural fantasies about



FIGURE 5. *Inside Out* (Pixar, 2015). Directed by Pete Docter. Riley Anderson's Imagination—part elephant, part dolphin, and part cat— convinces Joy and Sadness to take a shortcut back to headquarters.

technology, but it is more likely that most of them will become a passing fashion or fad.⁵⁹

Indeed, glitch fashions have been the fate of much of this work, now featured in everything from hip-hop videos to television commercials and the latest runway styles. Examples range from Bing Bong's cubist-inspired shortcut back to headquarters in Pixar's *Inside Out* (2015), and from "A Glitch in Time," episode 15 of season 5 of the popular television show *Adventure Time*, to the hip-hop mogul Kanye West's music video for *Welcome to Heartbreak* (2009), discussed in chapter 5.⁶⁰ In a culture of rich media and ubiquitous data, chromatic glitch effects quickly become passé, "pathetic and prophetic caricature[s] of . . . the repressive channeling of desire," as Jacques Attali writes.⁶¹

But *how*, exactly, do glitch and noise move from a potentially alarming, disturbing state to becoming complicit with consumer desires? And in the moments just before they do, what sort of political or social critique can they offer? This is discussed in the following pages. For now, consider that in this cycle, glitch art is, unfortunately, largely neutralized of criticality, in the end recontributing to the progressive rationalization of aesthetics in the command-and-control ethos of the twenty-first century.

Failure

Unlike glitch, failure has more complex connotations. These phenomena are “true” accidents to the extent that they exceed meaningful order or intention. They fall under the auspices of what Derrida theorizes as the event: a singular, nonrepeatable, and unforeseeable occurrence. Derrida asks: if a living being undergoes sensation through the body’s organic material, then does the body not also iterate and “read” itself to make sense of the experience in a way that a machine cannot do? Unsurprisingly, he sets up and reworks a classic binary opposition between the singularity of the event, associated with a living being, versus a machine’s calculable program and automated repetitions.⁶² This distinction may ring true on most practical levels but it also perpetuates cultural beliefs in an error-prone, yet self-reflexive, human versus a blind, but fail-safe, machine. Friedrich Kittler proposes a similar theorization of technical media as emerging from a nonhuman basis (as implied in the above definition of media archaeology). Where the human provides spontaneous responses to unforeseen events, the machine is only capable of what has been envisioned for it in advance.⁶³ I have no interest in maintaining such hardline ahistorical distinctions between the human and machine (because, again, machine noise is always already human-made), but these analytic frameworks nonetheless pose an interesting quandary: is it possible for a machine to think through its experience and simultaneously make sense of it? As a crude machine event, the answer is “no.” But as material phenomena that refer back to broader anthropological processes, computer failures can be seen to shed light on the limits of human control.

Failure also tends to shut down a system or situation for more than a merely inconvenient length of time. In the metaphor of the city, failure may be defined as a tragic school shooting, terrorist attack, or ten-car pileup in the Holland Tunnel. In computational environments, failure is more severe than a mere glitch. It could include hacking into a major government agency; an unfixable, heavily degraded video file; or defunct satellite. Failure may be bad for business, but it is good for experimental art (illustrated in chapters 2 through 5). High-tech corporations respond to such failures by integrating “failure systems engineering” to minimize and circumvent the inevitable. Unfortunately, the case of environmental failure has not received such rigorous interventions. Those who desire social and democratic freedoms introduce alternative practices, but these too seem to fail, thwarted by ever more powerful enterprises that make their name by transforming once-alternative views into marketing buzzwords.⁶⁴ And thus it is no surprise to find failure and its related instantiations (error, glitch, noise) *de rigueur* in pop culture and business-speak. Fashionable failure appeals to innovation entrepreneurs, while actual failure is kept at bay. This book’s address of failure thus finds more traction in the domains of art and aesthetics, where it is celebrated and repurposed as fuel for advancement.

Trash

Unlike most adults, children love to play with trash. “Picking up junk starts around six,” Sierra Club writer, MIT scientist, and urban planner Kevin Lynch explains, “it’s very common.”⁶⁵ Children’s enchantment with garbage is personified by *Sesame Street*’s Oscar the Grouch, who lives in a trash can and admits he “loves trash.” Similar childlike fascinations with trash figure in *Garbage Pail Kids* (1987) and, updated for the digital trash of the computer age, Pixar’s 2008 animated success *Wall•E* and Disney’s 2012 *Wreck-it Ralph*, a children’s narrative film about a character in a videogame (Ralph) and his sidekick, Glitch, who, true to her name, inadvertently demolishes everything she comes into contact with. Children’s love of trash also extends to the everyday, from schoolchildren’s transformation of recyclables (paper towel rolls, cardboard) into playful images to toddlers mesmerized by metallic candy wrappers in the gutter.

For at least a century, adults have played with junk as an established avant-garde strategy. Beyond the art world, adults have also been known to collect garbage and put it on display, whether as the raw materials for community building or for environmental and cultural development. In late 2018, the exhibition “Designing Waste: Strategies for a Zero Waste City,” curated by Andrew Blum and sponsored by the American Institute of Architects (AIA) in conjunction with New York’s Center for Architecture, displayed old milk cartons and images of trash and dumpsters on the city’s streets to propose ways to radically reduce New York City’s waste by 2030. The exhibition relayed such stark facts as this one: in 2018, over 24,000 tons of trash were produced in New York City *every day*. Multiplied by 365 days, this costs the city over a billion dollars a year, not to mention the environmental havoc caused to the planet, underprivileged communities who remain vulnerable to exposure from toxic waste, ground-water pollution, and proximity to landfill sites

On the other side of Manhattan, we find a number of East Village community gardens. Traditionally home to artists and bohemians, the East Village maintains its eclectic character in places like La Plaza Cultural de Armando Perez Community Garden in an otherwise waste-strewn neighborhood on the corner of East Ninth Street and Avenue C, where, circa 1979, discarded aluminum cans and old plastic detergent bottles were split open and cut in the shape of flowers, decorating the Plaza’s small central amphitheater, built from railroad ties and reclaimed building materials.⁶⁶ Kevin Lynch defines waste as that which is “worthless or unused for human purpose . . . a lessening of something without useful result.”⁶⁷ His definition includes a broad range of phenomena from excrement and derelict land and buildings, to literal garbage and garbage turned into art. This spacious definition provides a starting point for my analysis of the afterlife of techno trash, which includes these urban phenomena and, as I will argue: human beings. Environmental scholars have traditionally construed waste as other than

human but, as Michelle Yates argues, in capitalism, many people are treated and processed as trash, used up until they are void of labor power and become disposable. A key contradiction emerges herein, she explains, “waste in human form conflicts with capital’s internal drive for ever-increasing value, which can only be produced by and extracted from human labor.”⁶⁸ The faster one can use and dispose of labor power, the higher the profit, but conversely, the less the value of the human life used to produce it.⁶⁹ I return to this in chapters 6 and 7, and tangentially in chapter 4. For now, suffice it to note that “playing with trash” is a necessity in a world of reckless consumption.

In sum, my five core concepts are both different and similar. Flexibility is required, since my use of one term always already stands in for at least two others. By theorizing glitch, error, failure, noise, and trash as essential but paradoxical elements of our media culture, I undertake a broader project to reposition these phenomena from a mere eye-candy effect, or negligible aberration to be ignored, to actively relocate them in the foreground of a materialist critique. If these phenomena are intrinsic to the “fundamental social categories of capitalism”⁷⁰ then, when they are appropriated in artistic and cultural forms, and analyzed through material, aesthetic critique, they bring to light the contradictions in the so-called “transparent” historical present.

A final note on the book’s peripatetic style and softcover format is in order. As the text moves from a detailed analysis of one artist’s work to philosophy, to industry-based case studies, to pop culture and back again, the writing performs its own glitch-and-noise philosophy. This results in part from my lack of allegiance to any single discipline or pedagogy (expanded on in the above methods section). Several pages of analysis will delve into the nitty-gritty of Kant’s aesthetic sublime (chapter 6 and 7), while the following section of the same chapter jumps to the harrowing conditions of industrial waste in Pakistan and China—only to reconnect them in the penultimate section to photographs by Edward Burtynsky and eco-artist Chris Jordan. Along the way, readers will also encounter a series of passing allusions to disparate artists, designers, genres, and disciplines. While navigating the book’s organization and linear trajectory, one should also allow for flexibility in the play between concepts, references, and forms of analysis, in the same way that the glitch-and-noise artists discussed in these pages play with multi-tiered forms of data processing. Lastly, the performative nature of the prose is reflected in what is likely a noisy quality in the resolution of the digitally-printed softcover color images. Those holding the book in their hands will experience the same kind of (potentially invisible) visual noise theorized above and in chapter 4. Such is the state of our most cutting-edge and “democratic” digital printing technologies. Online readers, however, will not have this experience; for them it is all-in for the seductive allure of the liquid crystal display.⁷¹

V. BOOK OVERVIEW

High-Tech Trash: Glitch, Noise, and Aesthetic Failure analyzes how artists and theorists are placing glitch, error, and noise at the center of their creative practice, and secondarily, how this allows us to critically reflect on a broader ethos of breakdown. While much of the book's content is flagged above, in this section, I fill in some gaps and provide an overview of each chapter's contributions to the book's trajectory.

Part 1 begins with an investigation of the ways in which notions of noise, error, and failure have intersected with the history of Western philosophy, industry, and the avant-garde. Chapter 1 uses the lens of error to map a counter history of Western philosophy from Plato through failure systems engineering, proposing two related theses: first, that noise and error have always been intrinsic to human and human-machine communications, and, second, in the information age, characterized by discrete digital transfer and compression systems, error and noise have become primary agents. Given the prevalence of digital communications systems today, the chapter argues, it is imperative to place error and noise at the center of humanities-based critique. Chapter 2 complements chapter 1 with an archaeology of glitch and noise in the twentieth-century avant-gardes, from the futurist *Art of Noises* through junk art and distortion-based net art in the 1990s. Drawing on preexisting theories, texts, and archival sources, the chapter illustrates how the advent of technical reproducibility in sound and image led to an aesthetic shift toward non-unified forms of abstraction, disorientation, and noise.

In reference to Walter Benjamin's 1917 analysis of "the mark," Judith Butler recently referred to the aesthetic concept of the "unalloyed." In distinction to the relatively closed hermeneutic of the symbol, the unalloyed invokes a state of impossibility in bringing two distinct pictorial elements together.⁷² This non-Hegelian synthesis of nonreconciliation, in Butler's take, forms a correlative to the aesthetic function of abstraction, its development as noise in the avant-garde, and its intensification in glitch art's contemporary strategies. If the unalloyed can operate as a deliberate strategy of anti-compression (whether semantic or epistemological), it can be used to critique dominant systems of visual representation. This is illustrated elegantly in John Baldessari's photograph *Wrong*, and more generally, through abstraction's drive to disorient illustrative norms.

Part 2 (chapters 3 through 5) analyzes how contemporary media artists are using glitch and noise to foreground and critically offset dominant technical systems. This begins with chapter 3's correlations between color as signal / noise and "accidental colors," followed by an investigation of these concepts in Ryan Trecartin's video art. Chapter 4 continues this work by analyzing the photographic glitches German artist Thomas Ruff's work. Ruff's Internet appropriations offer a rich set of materials for discussing digital signal processing and the deliberate introduction of noise into otherwise clear channels of communication. Chapter 5

narrows this analysis to the more developed genre of datamoshing, the stylization of digital video compression algorithms. In it, I frame the analog and the digital as *concepts*, removed from the physical technologies they normatively signify. Doing so allows us to see how the structural logic of either term can stand in for a set of stylistic modalities apropos of the past and present.

Where parts 1 and 2 address breakdown and failure in philosophy and media art, part 3 (chapters 6 and 7) and the postscript move beyond the screen to analyze failure in the built environment. Failure and error are here reconceived as a series of global catastrophes resulting from many years of collective failures to care for our waste and world. Chapter 6 focuses on a precariously inverted aesthetic of the “toxic sublime” in the “offshore” practices of e-waste recycling and shipbreaking, followed by an analysis of the work of Canadian photographer Edward Burtynsky. The decision to emphasize Burtynsky’s work (as opposed to a number of other contemporary artists creating visual images of waste and ecological decline), is connected to the way he engages the tradition of the sublime in relation to harrowing environmental realities. What does it mean to deploy beautiful colors in the depiction of such tragic conditions? How does this connect back to our experience of waste and trash in the confines of daily life? Building on this, chapter 7 turns to the twin concept of the mathematical sublime to examine the role of data and statistics in contemporary landscape photography, positioned against a much longer history of environmental, landscape photography. While new approaches to eco-photography adopt data visualization trends to improve the communicative scope of an image, in a growing number of uses, precisely the opposite results: an image incites fear and cognitive breakdown, leaving a viewer incapable of grasping cohesive meanings, let alone undertaking political action.

Each chapter from 4 through 7 focuses almost exclusively on a single media artist’s work. My criteria for selecting these case studies was threefold: each artist was to have a unique approach to color; a marked use of noise, waste, or error in relation to high-tech culture; and third, a combination of the first two (a use of color *as* glitch or noise) lending itself to the book’s broader mapping of an aesthetic paradigm of failure.

The book’s conclusion turns to colored plastic. An old medium by twenty-first-century standards, plastic’s emergence as a miraculous techno-substance in the 1930s is juxtaposed with its current toxic ubiquity on the surface of the world’s earth and oceans, again foregrounding our failure to adequately care for a substance after its fashionable debut as the latest new media. Taken together, the book’s studies serve as a reminder to keep in check highfalutin ambitions to innovate ever-greater, newer, and faster technologies without properly caring for the afterlife of our current ones. An aesthetic of failure may be our most viable option for accepting the realities of the present and a prerequisite for sustained change. Throughout the following pages, readers must keep this fact in mind: *all* computer glitches, errors, or so-called system failures are not episodes of a

technology spontaneously acting on its own agency, working against what it has been programmed to do (unless it has been programmed to do precisely this). To the contrary, machines do exactly what they are programmed to do. If and when an “error or breakdown” is perceived, it is because the machine has reached a wall; a limitation in the way *humans* have programmed it. The book’s study of high-tech trash is consequently a study of ourselves.

