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The Horror of Discorrelation: Mediating Unease in Post-Cinematic Screens and Networks

ABSTRACT
The shift from a cinematic to a post-cinematic media regime has occasioned a great deal of anxiety for theorists and spectators alike, and the horror genre has been adept at channeling this unease for its own purposes, as is evidenced in movies that revolve around the proliferation of digital devices and networks as new media for ghosts, demons, and other forms of evil. This article argues that the fears elicited in post-cinematic horror are more deeply rooted in the "discorrelation" of phenomenal experience and computational microtemporality.

The transition from cinema's photographic ontology to the computational microtemporality of post-cinematic screens and networks—that is, the super-fast, real-time processing of images in a digital media ecology—has brought with it considerable anxiety among critics, theorists, and viewers alike. Much of this unease derives from what I have elsewhere called the "discorrelation" of post-cinematic images from the phenomenological frameworks of human embodiment and subjective perception.[1] Through digital production processes, compression algorithms, network protocols, and streaming delivery systems, among others, contemporary moving images are severed from the integral subjectivity that, in a photographic

1 On the concept of discorrelation, see Shane Denson, "Crazy Cameras, Discorrelated Images, and the Post-Perceptual Mediation of Post-Cinematic Affect," in *Post-Cinema: Theorizing 21st-Century Film*, ed. Shane Denson and Julia Leyda (Falmer, UK: REFRAME Books, 2016), http://reframe.sussex.ac.uk/post-cinema/2-5-denson/.

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media regime, could regard images as more or less fixed objects—thereby presenting a situation of upheaval and anxiety that is auspicious for exploitation in the horror genre. The new processuality of images unmoors viewing subjects, assaulting our sensorium with stimuli that exceed our perceptual capacities and fall outside the temporal window of conscious cognition.[2] Post-cinematic horror movies mediate the resulting anxieties in a variety of ways; they utilize pervasive cameras and surveillance apparatuses, digital glitches, online networks, and social media, among other things, to channel the shock of discorrelation into the generic framework of horror. In a very real sense, that is, post-cinematic horror is the horror of discorrelation itself.

This is to say that post-cinematic horror trades centrally on a slippage between diegesis and medium; the fear that is channeled *through* moving image media is in part also a fear *of* (or evoked by) these media, especially as regards the displacement of older media by newer ones and the uncertainty that such changes occasion. This slippage between diegesis and medium is nowhere more evident than in the (faux) found footage horror that came to prominence at the turn of the millennium with *The Blair Witch Project* (Eduardo Sánchez and Daniel Myrick, 1999)—a low-budget production that was famously presented (and hyped on the internet) as authentic, minimally edited video footage recovered after a group of students goes missing in the woods while working on a documentary about the eponymous witch. As Caetlin Benson-Allott has argued in *Killer Tapes and Shattered Screens: Video Spectatorship from VHS to File Sharing*, such faux found footage films, with their mise-en-abyme structures that confuse diegetic and "apparatic" cameras—that is, the cameras shown onscreen and those actually productive of the screen's images—speak to conditions of life in which new video technologies are becoming pervasive. Such films also tap into perceived dangers related to an explosion of images that are unauthorized, pirated, and proliferating out of control.[3]

Productions like the *Paranormal Activity* series (Oren Peli et al., 2007–2015) subsequently updated the faux found footage formula for newer digital video technologies, using reality TV tactics to present evidence of demonic possession and intergenerational haunting while cycling through a variety of digital camera types reshaping our visual and domestic landscapes in the 2000s (including consumer-grade high-definition digital video cameras, multicamera home surveillance systems, networked phone and laptop cameras, GoPros, and even infrared depth sensors in video game consoles). As Julia Leyda points out, the connection that these cameras establish between the worlds of fiction and of spectatorial reality enables the films to enact a post-cinematic allegory according to which the haunting of houses onscreen speaks directly to the contemporaneous housing crisis offscreen. Furthermore, the series connects theatrical screen horrors with more quotidian ones through online viral marketing campaigns that enlist spectators as free labor on Twitter, Facebook, and other social media sites—thus expanding the network of screens through which these digital-era tales of (dis)possession circulate.[4]

2 I emphasize that it falls outside of *conscious* cognition because it may well be registered in what N. Katherine Hayles calls the "cognitive nonconscious," a realm of bodily (and machinic) processing that does not rise to the level of perceptual awareness. See N. Katherine Hayles, *Unthought: The Power of the Cognitive Nonconscious* (Chicago: University of Chicago Press, 2017).

3 Caetlin Benson-Allott, *Killer Tapes and Shattered Screens: Video Spectatorship from VHS to File Sharing* (Berkeley: University of California Press, 2013).

4 See Julia Leyda, "Demon Debt: *Paranormal Activity* as Recessionary Post-Cinematic Allegory," in Denson and Leyda, *Post-Cinema*, https://reframe.sussex.ac.uk/post-cinema/4-1-julia-leyda/.

More recently, this trajectory of increasing imbrication between diegetic and medial imaging technologies has culminated in the "desktop horror" of movies like *Unfriended* (Levan Gabriadze, 2014), another low-budget production that updates the formula by dispensing with the camera altogether, instead presenting its social media–era tale of online betrayal and revenge directly through the frame of an Apple Macintosh desktop (see Figure 1). The movie uses Skype and other familiar online communications platforms to stage the real-time interactions between a group of teenaged friends who are being haunted virtually by the ghost of a former member of their clique who killed herself in the wake of cyberbullying. The movie is thus hyper-aware of its extradiegetic environment. Ill-suited to theatrical exhibition, where the desktop framing jarringly contrasts with the scale and non-interactivity of the big screen and therefore detracts from the spectator's involvement, the movie begs to be viewed on a computer's small screen for full effect. It therefore insinuates itself fully into the post-cinematic networked ecology that it thematizes, including the networks of online piracy (and its accompanying dangers) that the movie courts by virtue of these ideal viewing conditions.

The movie opens with a glitchy Universal Pictures logo that speaks directly to this context and undermines the viewer's trust in its images: Is it by design that we see these blocky screen artifacts and hear the stuttering digital audio, or is it due to a flawed video file? (See Figure 2.) The confusion here is not merely between the diegetic and its media-technical conditions because the film has not yet begun. Glitches will indeed play a role in the movie, but their appearance here, in connection with the studio logo, draws attention to the materiality of the video file itself, calling its reliability into question before going on to channel this uncertainty into a horror story that connects a group of friends around their screens—and pulls the viewer into their circle by way of a screen identical to theirs.

Fear, in other words, is distributed between events that are screened and events *of the screen*. The movie understands, and indeed capitalizes on the fact, that many viewers will watch it after searching the internet for torrents of the video, clicking their way into malware-infested sites with multiple, unreliable "download" buttons—many of them fake—designed to trick users into surrendering personal information (such as their email address or credit card number) or to click through to a site that takes control of their computer. *Unfriended*'s glitchy studio bumper speaks to this danger, which it folds into its own production of fear by evoking the uncertainty and loss of control that one might experience after clicking on a malicious download link. In one such scenario, the browser freezes, the computer emits a high-pitched sound, and the processor is overwhelmed while hundreds if not thousands of copies of files ominously named "unknown-1," "unknown-2," "unknown-3," and so forth are downloaded onto the user's hard drive.[5] All of this happens at a speed that makes it impossible to preempt, while the incessant monotone beep—which originates from the motherboard's onboard speaker, a miniature piezoelectric speaker used primarily to report system malfunctions, rather than the main internal or external speakers used to play music—is unresponsive to attempts to mute it. The result is an intense feeling of panic as the user tries in vain to stop the downloads, close the browser, kill the runaway process, or even shut off the computer.

5 See, for example, user discussions of such events on the Apple discussion boards: "Safari downloading Unknown files," accessed January 25, 2020, https://discussions.apple.com/thread/8391731.

Figure 1
"Desktop horror" in *Unfriended* (Universal, 2014).

Figure 2
A glitchy Universal Pictures logo draws attention to the materiality of the video file at the start of *Unfriended* (Universal, 2014).

Panic itself is distributed across the human user and their machine: the attack on the system simulates, and can ultimately lead to, a state known as "kernel panic"—a situation in which the operating system is overwhelmed and locks up, unable to continue or recover without loss of data.[6] The user, too, is overwhelmed by the microtemporal processes by which computational screen events are discorrelated

6 For a technical description of "kernel panic," which is specific to UNIX and UNIX-like systems (e.g., Linux, macOS, or BSD) but is similar to the Windows phenomenon of the Blue Screen of Death, see "man page" for panic, Unix and Linux Forums, accessed January 25, 2020, https://www.unix.com/man-page/FreeBSD/9/panic/.

from the temporal window of human perception and decision-making. And though the glitch event with which *Unfriended* opens quickly clears up and thus never induces this level of extreme malfunction-induced panic, it nevertheless opens a gap between the experiential and the computational and confronts the viewer with the fact of their material and temporal difference. As desktop horror movies demonstrate most forcefully, post-cinematic horror is in touch—conceptually, thematically, and materially—with such scenarios of disconnection and discorrelation: with anxieties related to a loss of control in digital environments, where machines assert their autonomy and overwhelm human temporal experience with microtemporal events that are executed beneath the threshold of perception, much less reaction.

DISCORRELATIONS NEW AND OLD

In the final section of this article, I read *Unfriended* as a paradigmatic case of post-cinema's cultivation of a horror of discorrelation, but first I must clarify a few things about my terminology and overall approach. Notably, my use of the term *post-cinema* is not predicated on the "death of cinema" or some other event or condition that puts us definitively after the era of cinematic images. Rather, what I have in mind is the cinema's envelopment within the larger environment that has been thoroughly transformed by the operation of computational processing.[7] There are real continuities between the experience of going to the cinema in the age of celluloid and that of watching movies stored and screened by way of digital apparatuses; we still consume moving images, and these moving images still mediate stories and other recognizably perceptual contents. But in focusing on these continuities, we risk overlooking the volatility or contingency of this correlation between subject and object, which in the age of computational processing teeters precariously atop microtemporal processes that are radically different in speed and scale from human perception. The perceptual correlation, in other words, pertains to a level of phenomenal experience that is abstracted from, and systematically blind to, an underlying discorrelation that marks the difference between cinema and post-cinema.

What does it mean, then, to say that post-cinematic horror is the horror of discorrelation? The answer to this question will help us to understand how relations of both continuity and discontinuity between cinema and post-cinema remain in play; or, alternatively, the question might even serve as a test of the cinema/post-cinema distinction itself. To start, my claim about discorrelation might be taken to mean simply that contemporary horror is a highly self-reflexive genre—which in itself is hardly anything new. Indeed, the horror genre solidified in the early 1930s out of the then-recent transition from silent to sound film, and it initially drew its energies and affective appeals—that is, it drew nothing less than its genre-defining ability to horrify viewers—from a self-reflexive engagement with this media-historical transition and with the uncertain spectatorial position into which it had placed moviegoers at the time.[8]

7 For other approaches to post-cinema, see Steven Shaviro, *Post-Cinematic Affect* (Winchester, UK: Zero Books, 2010) as well as the collections Denson and Leyda, *Post-Cinema*; Malte Hagener, Vinzenz Hediger, and Alena Strohmaier, eds., *The State of Post-Cinema: Tracing the Moving Image in the Age of Digital Dissemination* (Basingstoke, UK: Palgrave Macmillan, 2016); and Miriam De Rosa and Vinzenz Hediger, eds., "Post-What? Post-When? Thinking Moving Images beyond the Post-Medium/Post-Cinema Condition," special issue, *Cinéma & Cie* 16, nos. 26–27 (2016).

8 There were, of course, horror films before the sound transition, including such notable specimens as *Nosferatu* (F. W. Murnau, 1922) and *Dr. Jeckyll and Mr. Hyde* (John S. Robertson, 1920). However, the genre designation is of a later vintage, and many silent film treatments of "horror" materials, such as

Films such as *Dracula* (Tod Browning, 1931), *Frankenstein* (J ames Whale, 1931), and *The Invisible Man* (J ames Whale, 1933) exploited, as Robert Spadoni has argued, a pervasive "medium sensitivity" on the part of spectators still adjusting to the new realities of a cinema wired for sound.[9] Such films not only innovated the use of offscreen space as a site of unseen horrors; they also channeled a lingering impression, widespread during the heyday of the sound-transitional period from roughly 1926 to 1931, that the speaking bodies onscreen were somehow "ghostly" or "uncanny" figures. This impression was no doubt reinforced by early sound-image synchronization problems and by the fact that the novelty of sound was initially foregrounded as spectacularly exceptional with respect to the familiar silent film landscape.[10]

From a phenomenological perspective, viewing (and listening) subjects not yet habituated to synchronized filmic sound were torn between competing modes of comportment with respect to it, as sound oscillated uneasily between an unobtrusive channel or transparent medium and an object in its own right. Similarly, spoken words could either congeal into coherent dialogue as carriers of semantic meaning, or they could stand out and foreground the "materiality of communication" (if not also the materiality of the newly installed loudspeakers, whose physical placement in the movie theater might still appear contingent or unnatural).[11] But as the synchronization of sound and image became more reliable, and as the necessary technological infrastructure was standardized and deployed universally, sound became normalized, domesticated. Against this trend, the horror films of the early 1930s once again defamiliarized it, harnessed the memory of the transitional era's uncanny bodies, and deployed sound as monstrous, ghostly, even threatening—thus transposing transition-era sound's unsettled phenomenology into a more actively unsettling one. The wild howls of offscreen animals in secret dialogue with Dracula, the inarticulate sounds of Frankenstein's mute monster, the rambunctious cacophony of the Invisible Man—all of these bear witness to this recoding of sound as frighteningly disjointed from images.[12]

In a sense, then, discorrelation has always been at the heart of the horror genre, for one of its founding gestures was to exploit a historically specific disruption of the techniques and conventions by which spectatorship itself had been constructed, a disturbance of the norms according to which viewers' perceptions were correlated with the images on the silent screen. Early filmic horror, if not horror more generally, was therefore a genre of discorrelation, no different in this respect from contemporary horror with its self-reflexive attention to digital cameras, screens, and networks.

Frankenstein (J. Searle Dawley, 1910), hardly resemble the horror film as we have come to know it. The sound transition was central to shaping these conventional expectations.

9 Robert Spadoni, *Uncanny Bodies: The Coming of Sound Film and the Origins of the Horror Genre* (Berkeley: University of California Press, 2007), 13–19.

10 In addition to Spadoni's work on horror, see also Donald Crafton, *The Talkies: American Cinema's Transition to Sound, 1926–1931* (Berkeley: University of California Press, 1997), for a more general history of the sound transition.

11 On "materiality of communication," see Hans Ulrich Gumbrecht and K. Ludwig Pfeiffer, eds., *Materialities of Communication* (Stanford: Stanford University Press, 1994). For a similar phenomenological argument about transitional-era sound, see Shane Denson, "Tarzan und der Tonfilm: Verhandlungen zwischen 'Science' und 'Fiction,'" in *"Ich Tarzan": Affenmenschen und Menschenaffen zwischen Science und Fiction*, ed. Gesine Krüger, Ruth Mayer, and Marianne Sommer (Bielefeld, Germany: transcript Verlag, 2008).

12 In addition to Spadoni, see Shane Denson and Ruth Mayer, "Spectral Seriality: The Sights and Sounds of Count Dracula," in *Media of Serial Narrative*, ed. Frank Kelleter (Columbus: Ohio State University Press, 2017), 108–124; Shane Denson, *Postnaturalism: Frankenstein, Film, and the Anthropotechnical Interface* (Bielefeld, Germany: transcript Verlag, 2014); and my video essay, Shane Denson, "Sight and Sound Conspire: Monstrous Audio-Vision in James Whale's *Frankenstein*," *[in]Transition* 2, no. 4 (2016), http://mediacommons.org/intransition/sight-and-sound-conspire.

To be sure, the respective self-reflexive operations refer to historically distinct media-technical and phenomenological conditions, but they are formally similar in terms of exploiting disorientation in the wake of change.

However, the discorrelation at stake in post-cinematic horror is of a qualitatively new and experientially far more radical sort. What we are dealing with in movies like the *Paranormal Activity* series, *Unfriended*, *Unfriended: Dark Web* (Stephen Susco, 2018), or *Searching* (Aneesh Chaganty, 2018)—born-digital movies *about* digital mediation—is not simply a new instance of the phenomenological disconnect occasioned by the shift from a familiar to a novel media form; rather, digital-era discorrelation involves a much more fundamental transformation of human-technological relations.[13] At the heart of this new discorrelation is a thoroughgoing transformation of the temporal dynamics of moving image media and the emergence of a new space of future-oriented contingency and generativity. Moving images shift from a medium of recording and playback (cinema) to a medium of on-the-fly, or real-time, image generation (post-cinema), whereby images are no longer fixed or determined by past events but opened up to an indeterminate becoming-in-time that in many respects parallels our own temporal lives. This new indeterminacy or, in a Bergsonian idiom, "indetermination" of images is a source of unease and disorientation, and it becomes the (often oblique or indirect) object of post-cinematic horror's self-reflexive engagement with its media-technical platform.[14]

In what follows, I will be concerned with low-level intersections between the material infrastructures and embodied aesthetics of horror in an age of new media—intersections that are mediated in post-cinematic horror's diegetic use of digital video cameras, computer screens, and online networks as well as the appearance of glitch effects and other artifacts of computational processing. These, I contend, are the means by which an important strand of contemporary horror seeks to harness the "medium sensitivities" that pervade life in the early decades of the twenty-first century and to re-direct our anxieties for the genre's own purposes. This analysis of post-cinematic horror resonates broadly with recent "platform studies" approaches to film and other media and particularly with the work of Benson-Allott, who also emphasizes the role of the platform in recent articulations of horror.[15] But whereas Benson-Allott's focus is on self-reflexive engagements with "prerecorded video as the dominant apparatus" after film—notably, with analog video technologies such as VHS as the carrier media for faux found footage films—my own focus is on the ways that digital video processes (such as compression/decompression, motion smoothing, buffering, and upscaling) and artifacts (including glitches, network lag, and jitter) challenge precisely the pre-recordedness of the video image, asserting instead a new

13 I make a case for the far-ranging scope of discorrelation, with reference to the *Paranormal Activity* movies, among others, in "Crazy Cameras"; a further elaboration of the philosophical stakes of my argument can be found in Mark B. N. Hansen, "Algorithmic Sensibility: Reflections on the Post-Perceptual Image," also in Denson and Leyda, *Post-Cinema*; and Leyda provides a fuller reading of the *Paranormal Activity* franchise in her "Demon Debt" in the same volume.

14 Henri Bergson refers to the body as a "center of indetermination." See Henri Bergson, *Matter and Memory*, trans. Nancy Margaret Paul and W. Scott Palmer (New York: Cosimo, 2007). Elsewhere I argue that Bergsonian indetermination endows post-cinematic images with an "animated" quality that characterizes them as "metabolic images." See Denson, "Crazy Cameras."

15 Platform studies has emerged over the past decade in game studies and digital media studies. Important early studies include Nick Montfort, "Combat in Context," *Game Studies* 6, no. 1 (2006), http://gamestudies.org/0601/articles/montfort; Nick Montfort and Ian Bogost, *Racing the Beam: The Atari Video Computer System* (Cambridge, MA: MIT Press, 2009); and the subsequent books in the Platform Studies series edited by Montfort and Bogost for MIT Press. Caetlin Benson-Allott adapts platform studies for moving image media in *Killer Tapes and Shattered Screens*.

dimension of generative futurity.[16] The platform is endowed with a degree of creative autonomy, so to speak, which is situated right at the heart of digital image processing, and it is this autonomy and its disorienting effects on our own temporal experience that post-cinematic horror has learned to exploit.

SIDE-CHANNEL ATTACKS AND TEMPORAL DISCORRELATION

Before endeavoring to ground these claims more concretely, I would like to begin by linking them to some of the broad cultural fears related to discorrelation, or the severing of the perceptual connection between subjects of consciousness and mediated objects. We might start with the recently discovered bugs affecting the vast majority of computer processors in operation, across operating systems, which were revealed to the public in early 2018 and given the aptly horror-themed names Meltdown and Spectre.[17] The latter exploit the computer's normal processes to conduct what is known as a side-channel attack and access sensitive information such as passwords or credit card numbers. As Intel put it, "A side-channel is some observable aspect of a computer system's physical operation, such as timing, power consumption or even sound."[18] Thus, a side-channel attack is an indirect approach; the attacker does not try to break into the system to steal the desired information or object as such but instead focuses on some epiphenomenon of normal computational operation, which is analyzed in order to locate the object indirectly—by means of the ghostly traces left by computers in the world. Physical signals serve here as indices of informational operations. This means that even non-networked, rigorously "air-gapped" computers can be hacked, for example, via acoustic cryptanalysis, a method that analyzes sounds emitted by computer processors, hard drives, fans, and keyboards in order to extract useful information.[19] Compounding our worries about the total surveillance of online activities by state and corporate interests, such attacks show that even going offline is insufficient to protect us from prying eyes and ears.

The Meltdown and Spectre attacks take aim at a different side channel. In the words of Google's Project Zero team, from a post dated January 3, 2018, "We have discovered that CPU [central processing unit] data cache timing can be abused to efficiently leak information out of mis-speculated execution, leading to (at worst) arbitrary virtual memory read vulnerabilities across local security boundaries in various contexts."[20] I will come back to this technical language in a moment, but for now it is important to note that the big, scary thing being reported here is the fact that certain bugs in processor architectures subject us to the possibility of identity theft and, more generally, a hostile takeover of our agency. And this is directly related to the radical disconnect between consciousness operating on a macro- (or meso-)

16 Benson-Allott, *Killer tapes and Shattered Screens*, 4.

17 Technically speaking, Meltdown and Spectre name a variety of related attacks that exploit specific architectural vulnerabilities in the computer's central processing unit (CPU). Nevertheless, popular reporting often conflates the attacks or exploits and the underlying bugs or vulnerabilities. For more about the discovery of the bugs, as well as an introduction to what they involve, see Andy Greenberg, "Triple Meltdown: How So Many Researchers Found a 20-Year-Old Chip Flaw at the Same Time," *Wired*, January 7, 2018, https://www.wired.com/story/meltdown-spectre-bug-collision-intel-chip-flaw-discovery/.

18 "Side Channel Methods—Analysis, News and Updates," Intel Corporation, accessed July 5, 2018, https://www.intel.com/content/www/us/en/architecture-and-technology/facts-about-side-channel-analysis-and-intel-products.html.

19 See Daniel Genkin, Adi Shamir, and Eran Tromer, "Acoustic Cryptanalysis," *Journal of Cryptology* 30, no. 2 (2017): 392–443.

20 "Reading Privileged Memory with a Side-Channel," Project Zero, January 3, 2018, https://googleprojectzero.blogspot.com/2018/01/reading-privileged-memory-with-side.html.

temporal scale and the microtemporality of computer processing, according to which we can hardly be considered to be "in control" of our machines—at least, that is, not in the "real time" of media use and operation.[21] Especially when connected to online networks, as virtually all of our devices are, this disconnect exposes us to dangers that can only be detected after it is much too late. In this way, the network effects not only a spatial but also a temporal dispersal of agency that threatens us, in by now familiar terms, with a loss of individuality and autonomy. In Gilles Deleuze's felicitous term, we are rendered *dividuals*, and the illusion of self-same subjectivity is shattered by the material processes of networked computation.[22]

Accordingly, to focus only on the network and its exposure of our sensitive data to the outside misses a more fundamental point about the mismatch between subjectively phenomenal and machinic, technical temporalities. The vulnerability of air-gapped computers to acoustic cryptanalysis already showed that the threat of side-channel attacks is not correlated with a decision either to participate in or withdraw from online networks. But there is more. To focus solely on the specter of identity theft is basically to humanize the threat, and this humanization is enabled by a spatialized conception of the web with human agents sitting at each of its nodes. (Think of phishing attacks, in which humans trick other humans into giving them secret information.) Even the extreme case of acoustic cryptanalysis is largely understood in such spatial, anthropocentric terms: that someone might bypass or override my decision not to participate in the world of online communications, might hack the physical sonic traces of computation to correlate them with digital information that, unbeknownst to me, is effectively re-inserted into the network. Again the fear is that "my" private information, which I try to secure by disconnecting and firewalling into a secure, offline space, will nevertheless be exposed to the outside by malicious agents.

My point is not that these fears are misguided or unrealistic. However, there is a deeper cause for concern that is overlooked by framing the issue in this spatial and personalizing manner. This more fundamental threat or vulnerability is temporal and nonhuman in nature, and it is related to the fact that the discorrelation of human and technical temporalities is independent of—though certainly exacerbated by—network connectivity. The Project Zero blog post identifies "CPU data cache timing" as the crux of the Spectre and Meltdown exploits. The data cache is a black box of sorts, a hardware component located close to the processor core, which temporarily stores information and serves to reduce the CPU's access time to data that it would otherwise have to retrieve from the main memory. The Spectre and Meltdown exploits take aim at the *timings* of this cache in order to indirectly infer its contents. These timings measured in nanoseconds, or billionths of seconds, are temporal units that far undercut the speeds of human thought and perception.

Such incommensurability leads to an epistemological problem, not only for the normal user unaware of what is going on inside their black box computer but also for expert computer scientists; the temporal mismatch means that human observers simply cannot effectively know what is happening at every step of the way. Project Zero therefore adds the following caveat: "A warning regarding explanations about processor internals in this blogpost: This blogpost contains a lot of speculation

21 On micro-, meso-, and macro-temporalities, see Wolfgang Ernst, *Chronopoetics: The Temporal Being and Operativity of Technological Media*, trans. Anthony Enns (London: Rowman & Littlefield, 2016).

22 Gilles Deleuze, "Postscript on the Societies of Control," *October* 59 (1992): 3–7.

about hardware internals based on observed behavior, which might not necessarily correspond to what processors are actually doing."[23] In fact, "a lot of speculation" is something of an understatement—or perhaps a pun designed to play on the role of machinic speculation and the discorrelation of human and computational processings of time. In an act of recursion of the sort beloved by computer scientists, researchers and security experts must ironically rely on the side channel of "observed behaviors" in order to infer the discorrelated real-time processes of a side-channel timing attack. Though perhaps a bit circuitous, following this branch will take us, in the end, to the role of discorrelation in contemporary horror movies.

Earlier I pointed to the "CPU data cache timing," which the Project Zero team notes "can be abused to efficiently leak information out of mis-speculated execution." I wish to foreground now the fundamental difference between human speculation and the machinic operation of what is known as "speculative execution," or the pre-processing of algorithmic conditionals and the pre-fetching of data before it is known whether they will in fact be needed by the computer.[24] Each of these—human and computational speculation alike—has to do with a forward-looking or futural processing of time: natural and machinic forms of anticipation, or what Edmund Husserl identifies as the protentional dimension of internal time-consciousness.[25] For Husserl, temporal experience is never located in a discrete, punctual instant but always in a thick moment when the now is pregnant with past and future. Hence there is no present experience without retention of the just-past and protention of the moment about-to-come. But with the advent of computational futurity, or artificial protention in the form of speculative execution, we are faced with a potentially worrying development: our machines now model something like the temporal flow at the heart of our very subjectivity, embodied in an external homologue of our internal time-consciousness. This suggests a somewhat Frankensteinian scenario, so it is only natural that we might fear a loss of control.

To truly understand this threat, however, we have to look more closely and train our focus at a lower level of temporal processing. Philosopher of technology Bernard Stiegler opens the door to this perspective. In *Technics and Time*, Stiegler famously argues that modern media added a new layer of retention, or "tertiary memory," alongside our primary retention of immediate experience and the secondary retention of active recall or memory proper. In other words, recording technologies produce externalized, reproducible experiences stored by industrial media objects such as gramophones and videotapes.[26] Using the term *cinema* to designate not only a specific apparatus but also the broad media regime or epoch instituted by recording technologies from photography and phonography to television and digital technologies, Stiegler identifies a threat to our subjective experience whereby media colonize consciousness by pre-formatting our immediate awareness (or primary retention) with the images of tertiary retention. This threat is exacerbated, according to Stiegler, with the advent of live media in what he calls "the

23 "Reading Privileged Memory."

24 See David Kaeli and Pen-Chung Yew, eds., *Speculative Execution in High-Performance Computer Architectures* (New York: Chapman & Hall/CRC, 2005).

25 See Edmund Husserl, *On the Phenomenology of the Consciousness of Internal Time*, trans. John Barnett Brough (Dordrecht, Netherlands: Kluwer Academic Publishers, 1991).

26 See, in particular, Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise*, trans. Stephen Barker (Stanford: Stanford University Press, 2011).

televisual epoch of cinema."[27] This is to say that temporal media co-opt individual time-consciousness by occupying our immediate awareness. Especially in cases of real-time mediation, tertiary or artificial retention fills our primary retention, giving rise to industrialized memories or secondary retentions but also shaping our current protention of the emergent future. In this manner, it also executes a hostile takeover of conscious experience itself. Stiegler's argument, which I am radically simplifying here, thus points to something like an asubjective and nonhumanly executed counterpart to "identity theft."

However, one thing Stiegler's argument fails to account for is the emergence of the new protentional dimension that distinguishes computational media, including digital video, as decidedly post-cinematic. No longer simply memorial or mnemotechnical, post-cinema's protentional images are generated on the fly (that is, at the time of viewing) according to compression algorithms rather than photochemical processes, thereby disrupting the stability of tertiary memories such as are preserved in the photograms of film-based cinema. Images themselves are thus "dividualized," as computational futurity or protention is injected through processes of motion estimation in compression and decompression operations as well as the aforementioned "speculative execution," the side channel at which Spectre and Meltdown take aim. As the Project Zero team explains the concept, "A processor can execute past a branch [such as an 'if/else' conditional in code] without knowing whether it will be taken or where its target is, therefore executing instructions before it is known whether they should be executed. If this speculation turns out to have been incorrect, the CPU can discard the resulting state without architectural effects and continue execution on the correct execution path. Instructions do not retire before it is known that they are on the correct execution path."[28]

These predictive techniques are used to speed up computational processes of all sorts, including image generation and playback, as well as to render imperceptible the unavoidable delays introduced by signal transmission across online networks, as on videoconferencing platforms like Skype or in fast-paced online fighting games, where network lag makes the interface between the player and screen feel gooey or sticky.[29] Thus, when a time-critical event occurs, such as my onscreen avatar hitting that of my opponent (who might be halfway around the world from where I am), my computer generates images according to a predicted trajectory of subsequent events, including my opponent's reaction, even before they have been executed or transmitted across the network. Any discrepancy between the predicted and actual events will be corrected by rewinding, so to speak—resetting, in other words, to the state just prior to the incorrect prediction. The microtemporal nature of these revisions will mean that they will remain largely imperceptible to human viewers—but not to a computational agent designed precisely to watch for and exploit this "mis-speculation window" before the CPU detects it has executed the wrong code.

The Spectre bug is therefore "spectral" in the very sense introduced by Jacques Derrida: namely, the hauntological sense in which "time is out of joint" and the present of metaphysics is dispersed into the past and future via the differing/deferring

27 Bernard Stiegler, "The Time of Cinema: On the 'New World' and 'Cultural Exception,'" trans. George Collins, *Tekhnema: Journal of Philosophy and Technology* 4 (1998): 106.

28 "Reading Privileged Memory."

29 On the use of speculative execution in online gaming, see Tony Cannon, "Fight the Lag: The Trick behind GGPO's Low-Latency Netcode," *Game Developer Magazine* 19, no. 9 (2012): 7–13.

operation of *différance*.[30] In computation, however, this spectrality is rendered materially concrete, even physical, in the CPU's data caching and out-of-order execution. Moreover, due to the operation of speculative execution in digital video playback, virtually all of our moving images have become similarly spectral in the post-cinematic era: we are haunted, in these images, by the discorrelation of human and computational time and the operation of a computational future that is always one step—or, due to the microtemporal nature of these operations, several billion steps—ahead of us.

Clearly, the emergence of a protentional dimension of moving image media marks a radical change from cinema's retentional regime, but this transition pertains to a level of experience that is far less visible (if at all) to spectators than the spectacularized shifts from silent to sound cinema or from black-and-white to color film stocks, for example. The discorrelation that I am positing concerns operations that take place outside of human perception itself, so how is this transformation channeled or reflected in post-cinematic horror movies? As digital video cameras, computer screens, and glitch effects entered the mise-en-scène and diegetic spaces of faux found footage horror movies like *Paranormal Activity* (Oren Peli, 2007), *V/H/S* (Matt Bettinelli-Olpin et al., 2012), and *Unfriended*, the spectrality of discorrelation attaching to any given playback operation became subject to a recursive operation according to which it was rendered exploitable specifically as a medium of horror. In other words, post-cinematic horror reconfigured itself as a side-channel attack on our affective processing of time itself.

A side-channel attack is precisely what Michel Serres refers to as *parasitism*: the exploitation of a channel by a third party.[31] The position of the third defines a space of transition. Its object may appear as noise for system-internal participants (such as interlocutors in an email exchange, for whom the internal coding and processing of symbols by the machine is of no interest), but it constitutes a message for an external observer (such as the purveyor of a side-channel attack, who is interested precisely in these by-products). This oscillatory position is essential to the functioning of the system and is responsible, in part, for the materialization of the channel, which—barring the possibility of a radically frictionless, immaterial medium—can never be purged of noise. The parasite therefore non-neutrally mediates the boundaries of a system; it inserts itself into what Serres calls a "space of transformation," a space that is liminal to the system, alternately within and without.[32] In mounting what is effectively a side-channel attack on our temporal becoming, post-cinematic horror occupies just such a liminal zone: a space in which to capitalize on the anxieties occasioned by a fundamental media-historical transition. Oscillating between diegetic and medial, phenomenal and computational levels, this new horror of discorrelation mediates between cinematic and post-cinematic conditions of life itself.

UNFRIENDED: A POST-CINEMATIC FABLE

To flesh out these claims, I would like to turn to a representative case study, *Unfriended*, a post-cinematic horror movie that, as we have seen, is presented in the

30 See Jacques Derrida, "Différance," in *Margins of Philosophy*, trans. Alan Bass (Chicago: University of Chicago Press, 1982), 3–27; on spectrality and hauntology, see Jacques Derrida, *Spectres of Marx: The State of the Debt, the Work of Mourning, and the New International*, trans. Peggy Kamuf (New York: Routledge, 1994).

31 Michel Serres, *The Parasite*, trans. Lawrence R. Schehr (Minneapolis: University of Minnesota Press, 2007).

32 Serres, 71–73.

form of a radically digital and networked type of faux found footage: as the screen recording of one of the characters' laptops. The latter device captures the online interactions of a group of teenaged friends haunted by the ghost of a deceased classmate, the victim of cyberbullying driven to suicide, who returns in the guise of an uninvited guest participating in the friends' Skype conversations, Facebook feeds, email exchanges, and text messages. The intruder not only drives the friends to admit their complicity in the former friend's death (and other intrigues, including various other betrayals of one another) but ultimately causes each member of the group to kill themselves by violent and graphic means.

Following some cues from Serres, I would like to read *Unfriended* as a post-cinematic fable of post-cinematic mediation, one that exploits (and perhaps expands the scope of) the polyvalent meanings of parasitism, as foregrounded by Serres, in order to articulate the deeply rooted imbrications of contemporary media-technics and attendant forms of human intersubjectivity and politics. As a fable, *Unfriended* is many things: it is a cautionary tale about the dangers of online bullying and, more generally, of an internet-mediated form of social existence; it is a self-reflexive exploration of digital temporality and its relation to human experience; and it is, above all, an attempt to "make sense" of discorrelation itself (i.e., to provide sensory content for a phenomenon that eludes direct perception). This necessary recourse to indirect or oblique images makes the fable a fitting form. And while *Unfriended* does not employ Aesop's familiar animal imagery for this purpose, it draws on more foundational resources of the fable in order to probe the social and technical parameters of post-cinematic media and to mediate the horrors of discorrelation.

What is a fable, and how can the term be extended to a media text like *Unfriended*? Serres sets out from fabulist Jean de La Fontaine's verse re-telling of the story of the city rat and the country rat to define fables as a form of storytelling that rests on relations more than concrete images; the choice of figures (e.g., rats, mice, hares, horses, and tortoises) is not without consequence, of course, but the relations between and among them matter most. Ultimately, according to Serres, these relations all come down to a "relation of the abusive companion."[33] This is to say that fables—and not just fables but also philosophy and other basic forms of thinking about and representing human relations—are all about parasitism.[34] Parasitism, for Serres, is the very foundation of human collectivity as well as that which ensures that such collectivity is always also more than human. As he explains, "Our collective is the expulsion of the stranger, of the enemy, of the parasite. The laws of hospitality become laws of hostility. Whatever the size of the group, from two on up to all human kind, the transcendental condition of its constitution is the existence of the Demon."[35] But collectivity is not simply a matter of expelling the parasite, for the formation of community depends crucially on the parasite's presence. There is an indeterminacy between hospitality and hostility, owing to an oscillation between the roles of host and of guest (terms that not only share etymological roots, indicative of the inherent possibility of role reversal, but that more radically alternate between the welcoming embrace of the familiar guest and the fear and mistrust of strangers, or xenophobia).

33 Serres, 8.
34 Serres, 9.
35 Serres, 56.

Parasitism is thus at the root of communal welfare, charity, and civil society as much as it motivates political exclusion; the guest, even a welcomed one, becomes a parasite with respect to the host, whose resources (food, shelter, and so on) are consumed without payment in kind. And the fable, with its displaced figures standing in for basic human relations, offers a privileged medium for representing this most unstable and shifting of roles: "Only the fable and its metempsychosis allow me to see the same third man [i.e., the parasite] in the nest, in the cave, at my table, and on the throne."[36] A fable like that of the city rat and the country rat captures such dynamics by portraying a guest-parasite (country rat) visiting a host-parasite (city rat) to dine at the home of a third (unwitting) host, who as a tax farmer is also a parasite of sorts with respect to the food's actual producers, the farmers, who in turn parasite the spoils of nature, and so on. Accordingly, the fable is a perfect vehicle for communicating the deep truth of relational transposition that marks parasitism as pervasive and fundamental to social relations. But the positive—that is to say, constitutive—role of parasitism is even more foundational to the collective, which, as noted, is always more than human.

The rats of the fable are startled by a noise at the door interrupting their meal. Serres associates this noise with the information-technical sense of "noise," as in the famous Shannon-Weaver model of communication, according to which communication is measured not in terms of humanly defined meanings but in terms of signal-to-noise ratios.[37] As Cary Wolfe reminds us,

> Here, we need to remember that "noise" (for the English reader) forms the third and unsuspected meaning of the French word *parasite*: 1. biological parasite; 2. social parasite; 3. static or interference. As we know from classical information theory and its model of the signal-to-noise ratio, noise was typically regarded simply as the extraneous background against which a given message or signal was transmitted from a sender to a receiver. For Serres, however, "as soon as we are two, we are already three or four. . . . In order to succeed, the dialogue needs an excluded third" (*Genesis*, 57); we may begin with "two interlocutors and the channel that attaches them to one another," but "the parasite, nesting on the flow of the relation, is in third position" (*The Parasite*, 53). For Serres, then—and here he joins a line of systems theorists that includes figures such as Gregory Bateson and, later, Niklas Luhmann—noise is *productive* and creative.[38]

Accordingly, Serres's articulation of parasitism and noise is not just clever wordplay. Instead, this association describes intersubjective relations in a way that illuminates the essential ties between their material and informatic—or "material and logicial"—conditions.[39] Any of the fable's various relations, whether between the two rats, the tax farmer and the farmers, or the farmers and their animals, is not only interrupted by a third (the noise, the rat, or the taxman), but that third is essential in establishing

36 Serres, 63.

37 See, for example, Claude E. Shannon and Warren Weaver, *The Mathematical Theory of Communication* (Urbana: University of Illinois Press, 1949).

38 Cary Wolfe, "Bring the Noise: *The Parasite* and the Multiple Genealogies of Posthumanism," introduction to Serres, *Parasite*, xiii.

39 Serres, *Parasite*, 47.

the relation or in cementing the channel of transposition that enables parasites to become parasited and vice versa.

In other words, the parasite points to the existence of the medium of interrelation, the channel of communication according to which systems and subsystems are structured. Parasitism, as a social or political relation, is therefore inseparable from a media-technical relation, and the appearance of noise thus serves, as Bernhard Siegert emphasizes, an essentially *phatic function* (a term he borrows from linguist Roman Jakobson).[40] As Siegert puts it, the phatic function of signs involves a "reference to the channel" of communication: "Phatic communication neither expresses nor references a given content; it merely ascertains the existence of a channel."[41] Hence, Siegert holds, "in all communication each expression, appeal, and type of referencing is preceded by a reference to interruption, difference, deviation."[42] The success of communication is thereafter measured in terms of the repression or exclusion of this interruption or noise. As Serres insists, however, such deviation is not incidental but essential: "The difference is part of the thing itself, and perhaps it even produces the thing. Maybe the radical origin of things is really that difference, even though classical rationalism damned it to hell. In the beginning was the noise."[43] Noise, or the fact of mediation, cannot be eliminated from human relation, a fact that Serres extends to technology in general: "It is of no small interest to notice here that the well-run machine does not copy the bodies of animals and their organic system, but rather our relations among ourselves. Can we conceive of an intersubjective origin for simple machines? For the lever? For the scale? For technology in general? The answer to this question is affirmative. And it is still affirmative for machines that are not so simple."[44]

Yet in accordance with the system-liminal and oscillatory position of the parasite, it is not simply the case that the mediation of technology mirrors intersubjective relation as its foundation, for human relations themselves are constituted in and by technical mediations: "And suddenly, I no longer know if we have built a model, if from wood or rushes we have been able to produce a model of relations, or if, in this practice, we have discovered the origins of technology, of tools, of means. This roundabout means. These media always between us."[45] Hence media-technical and political dimensions are tightly coupled in Serres's theory—as they are, following him, in any fable, which is always and essentially a self-reflexive or phatic form of communication.

How does this illuminate *Unfriended* and its relation to the post-cinematic conditions of life today? As noted, fables are about sociotechnical relations more than they are about images, and certainly this applies to *Unfriended*. The film is centrally interested in the reconfiguration of social relations as mediated by computational networks, which means, ultimately, that it is concerned with a human-machinic constellation that, in terms of the intercession of a microtemporal realm of operations, positively resists visualization. As a fable, *Unfriended*'s onscreen avatars

40 Bernhard Siegert, *Cultural Techniques: Grids, Filters, Doors, and Other Articulations of the Real*, trans. Geoffrey Winthrop-Young (New York: Fordham University Press, 2015), 21.
41 Siegert, 21, 41.
42 Siegert, 21.
43 Serres, *Parasite*, 13.
44 Serres, 61–62.
45 Serres, 62.

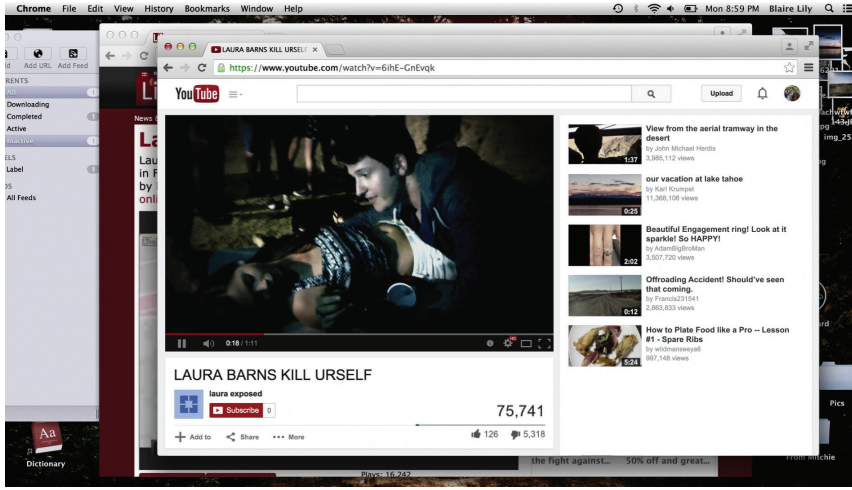

Figure 3
Cyberbullying as the original act of abuse in *Unfriended* (Universal, 2014).

therefore play the role of the image-placeholders or figural proxies formerly occupied, in classical fables, by talking animals. True to the parasite relation, however, these proxies are utilized in order to probe and mediate between systems and thus to reveal relations that are not susceptible to direct visual perception. This is, of course, all the more significant since we are dealing with a visual medium—a paradox that will be discussed later.

First, however, we should note that the "relation of the abusive companion," around which Serres says all fables revolve, does indeed structure *Unfriended* on a number of levels. Most obviously, the narrative is predicated on an original act of abuse: the cyberbullying that caused Laura Barns, the deceased friend (or perhaps "frenemy"), to take her life. The decisive event that precipitated her suicide was the anonymous posting of a video showing Laura partying with friends, passing out drunk, and defecating herself—her body itself effectively "glitching out."[46] After the humiliating video, titled "LAURA BARNS KILL URSELF," went viral on YouTube, Laura did indeed commit suicide (see Figure 3); subsequently, a video of her shooting herself in the head was also posted online, and various online tributes (Facebook memorials and the like) were thereafter established in her name.[47] Then, one year to the day after her suicide, the abused friend makes a posthumous return, in the form of a ghost, in order to abuse (by means of deceiving, dividing, and ultimately torturing) her former friends. It is important to note, in this context, that the parasite

46 I am grateful to an anonymous reviewer for pointing out that Laura's defecation can be seen in terms of a bodily glitch as well as the related insight that glitches might be seen as "the shitting of digital processes."

47 Many of these digital "props" actually exist or existed on social media: the cyberbullying video "LAURA BARNS KILL URSELF" was posted on YouTube but has since been removed; Laura Barns's suicide video is online as "Laura Barns Suicide," Liveleak, accessed August 28, 2018, https://www.liveleak.com/view?i=c60_1509380685; Laura Barns's Twitter account @billie227 is still online, as is her Instagram account, @billie227_laurabarns; and her Facebook presence includes her personal page, https://www.facebook.com/Laura-Barns-850524571676524/, as well as various tribute pages, such as "RIP Laura Barns," https://www.facebook.com/RIPLauraBarnes/.

conjoins not only the reversible roles of guest and host but also that of the ghost (with whom the guest and host also share a common etymology). As Siegert writes,

> Ancient Greek did not distinguish between guest and stranger—both were referred to as *xenos*, *xeinos*, or *xénä*. In Latin too it is difficult to draw a clear etymological boundary between guest and stranger. The latter was originally called *hostis*, which also meant enemy; but as of the first century BCE the term only signified the (political) enemy. In Old Latin, however, it indicated members of alien tribes or nations, including those on peaceful terms with Rome, with the understanding that they were living under their own laws. The position of the arriving stranger is indeed ambivalent: On the one hand he is a sinister enemy, on the other a guest who deserves respect. The word *guest* mirrors this ambivalence. It is derived from the Indo-European **ghostis*, which not only spawned Latin *hostis* but also evolved into *guest* and *ghost*. Both engage in visitations: A guest is someone who comes to haunt your house, in other words, a ghost.[48]

In her ghostly form, Laura haunts and abuses the group of friends as well as, at the same time, their channels of communication; indeed, she manifests exclusively through Twitter, Facebook, Skype, email, and other digital channels. Laura is a specter, therefore, but one that recalls to us precisely the spectrality of computational processes discussed above, along with that of side-channel attacks, such as Spectre, that take aim at and mediate between socio- and media-technical forms of parasitism. Again, it is an abuse relation that unites these various forms. Recall the Project Zero blog post announcing the discovery "that CPU data cache timing can be *abused* to efficiently leak information out of mis-speculated execution."[49] It is only fitting that Laura, the original victim of cyber abuse, would return in the form of a specifically digital ghost—that is, as a side-channel attacker.

Significantly, when the ghost first appears in their online conversation as a generic Skype avatar with no profile picture, the group of friends takes it to be nothing more than a glitch (see Figure 4). A glitch, however, is quite literally a parasite in the information-theoretical sense: it is the digital guise of noise, static, or signal interference. Ghosts and glitches are therefore interchangeable with guests and hosts, all of which are reversibly parasitic in their relations. But as the friends realize that there is indeed an uninvited guest in their videoconferencing session, that it is not "just a glitch" after all, it becomes all the more significant that the deeply spectral relations at play here manifest themselves materially as glitches on the screen—where the screen is both diegetic and material, both a part of the friends' world and of the viewer's. As these glitches make evident, the screen is, moreover, a membrane between the discorrelated levels of the phenomenal/visual and the computational/avisual. These manifestations therefore culminate in what Serres refers to as a "parasitic cascade."[50] Just as the country rat parasited the city rat, who parasited the tax farmer, who parasited the farmers, who parasited the crops and the animals, and so on, so does parasitism extend all the way down in *Unfriended*: the friends parasited

48 Siegert, Cultural Techniques, 49.
49 "Reading Privileged Memory" (emphasis added).
50 Serres, *Parasite*, 4–6.

Figure 4
The ghost as glitch in *Unfriended* (Universal, 2014).

the dead girl, her ghost parasites the friends, social media parasites human community, computation parasites perception, and post-cinema parasites cinema. In each case, a "contrapuntal matrix" is established by these relations and transpositions.[51] In *Unfriended*, the glitch in particular serves as the fulcrum for the sociotechnical counterpoint between informatic and anthropological, computational and phenomenological conditions.

This brings us back to a crucial fact about the movie's mediation: it is presented as a screencast recording from the MacBook of Laura's former best friend (and original cyberbully), Blaire Lily. The frame, that is, is filled completely with the pixel images of the laptop's screen, including the operating system menus, icons, and mouse cursor; the only cameras are those of the friends' computers, which channel everything into this single surface, a total system with no outside.[52] Reflecting what Francesco Casetti calls the "relocation" of cinema from the big screen to a variety of little ones, the movie's sense of "realism" is especially heightened when you watch it on your own laptop—when you close the loop, so to speak, and align the movie's frame materially with your own computer screen.[53] As we have seen, the movie anticipates such viewership and even derives some of its affective power from the danger to which online piracy exposes the viewer. When the movie is viewed on a computer, we witness everything—Skype conversations, Facebook chats, email, and web browsing—on this single, interchangeably diegetic and material screen. It is essential for the movie that it is presented in so-called real time, which adds to the temporal urgency and speaks to the reality of online communications today, thereby establishing a sense of realism despite the supernatural elements at play.

51 Serres, 6.

52 The exception is in the movie's final moments, when the laptop is closed and the ghost of Laura Barns (presumably) attacks Blaire.

53 See Francesco Casetti, *The Lumière Galaxy: Seven Key Words for the Cinema to Come* (New York: Columbia University Press, 2015), 17–42.

The reality of the movie is articulated despite—or precisely through—the use of digital glitches. Although these glitches might otherwise be taken to signal the interruption of realism by the intercession of digital processing that breaks the indexical continuity between image input and image output, such glitches are a familiar reality of online communication (on platforms like Skype), and our involvement in the images is increased by their use. Thus, when the Universal Pictures logo appears onscreen with digital compression artifacts, we might genuinely wonder whether the glitches are diegetic or whether they are produced on our own machine during playback, either due to the buffering processes of online streaming platforms or because we downloaded a faulty torrent file from some dubious website. Realism here is constructed through an immediacy and direct exploration of the new media-technical conditions of life, to which we can all more or less relate. But in the process, the glitches also expose the movie's singular screen as, in fact, double. As the site of playback, traditionally a passive "screening" surface, the screen is also revealed as a newly active site or space in which images are processed and generated before our very eyes. The glitches point up the perceptual paradoxes of post-cinematic cameras—similar to the phenomenological complexities that I have elsewhere described with respect to computer-generated lens flares, which oscillate between transparency and opacity as both photorealistic simulations of a camera's material physics and as realism-shattering spectacles in their own right.[54] These glitches additionally implicate the post-cinematic screen, however, which becomes ontologically indistinguishable from the camera in its execution of the same material processes of microtemporal and subperceptual image generation.

Unfriended's glitches, and their relation to our contemporary media-technical realities, call attention to what Hito Steyerl has called the "poor images" that circulate in digital networks.[55] Following Steyerl, these images provide an important context for thinking about the political realities of moving image media today—and for thinking about post-cinematic realism more generally. In Steyerl's words,

> The poor image is an illicit fifth-generation bastard of an original image. Its genealogy is dubious. Its file names are deliberately misspelled. It often defies patrimony, national culture, or indeed copyright. It is passed on as a lure, a decoy, an index, or as a reminder of its former visual self. It mocks the promises of digital technology. Not only is it often degraded to the point of being just a hurried blur, one even doubts whether it could be called an image at all. Only digital technology could produce such a dilapidated image in the first place.[56]

As Steyerl claims, these poor images are close in spirit to the "imperfect cinema" called for in the name of Third Cinema, in that they register social marginalization processes while also creating publics of their own.[57]

The poor images also outline the dark side of a "participatory culture," whose democratic promise is compromised by the hierarchies of value that

54 Denson, "Crazy Cameras."

55 See Hito Steyerl, "In Defense of the Poor Image," *e-flux* 10 (2009), https://www.e-flux.com/journal/10/61362/in-defense-of-the-poor-image/.

56 Steyerl.

57 See Julio García Espinosa, "For an Imperfect Cinema," trans. Julianne Burton, *Jump Cut* 20 (1979): 24–26.

remain and by the exploitation of unpaid fan labor that is enlisted in the ongoing production-consumption circuits of networked images.[58] Steyerl notes that, without extracting themselves from these conflicting political trajectories, poor images might nevertheless—or precisely for this reason—create what Dziga Vertov called "visual bonds" capable of subverting official and mainstream valuations by expressing what Steyerl terms a "link to the present."[59] In this way, degraded, glitched-out images might fulfill the political promise of realism precisely through their material connection to the post-indexical infrastructures of moving image media. As Steyerl put it, "The poor image is no longer about the real thing—the originary original. Instead, it is about its own real conditions of existence: about swarm circulation, digital dispersion, fractured and flexible temporalities. It is about defiance and appropriation just as it is about conformism and exploitation. In short: it is about reality."[60]

In his book *Videophilosophie*, Maurizio Lazzarato similarly invokes Vertov and his idea of the "visual bond," which Lazzarato offers as a materialist alternative to the critique of ideology, the expression of a practice that addresses the ontology of media directly and prior to the level of content.[61] Essentially, by resisting reduction to human perception, the images of Vertov's kino-eye are discorrelated from molar experience but thereby opened to the molecular processing of duration, both biologically and technologically, thus getting to the heart of the process by which subjectivities and social collectives are produced. If cinematic realism, following André Bazin, draws for its political power on an approximation to perceptual experience, then Vertov marks the path toward a post-cinematic realism that takes aim at the process by which the subject of that perceptual experience takes shape in the first place. It does this, according to Lazzarato, by means of the pre-personal affect that is marshaled and modulated by the increasingly fine-grained "time-crystallizing machines" of cinema, video, and digital processors.[62]

Accordingly, the video art of Nam June Paik offers a Vertovian answer to television, not because it counters the ideological content of TV but because it probes the machinic time itself of the apparatus, freeing it from the exclusive control of state and corporate interests.[63] The latter, according to Lazzarato, contribute to the production and regulation of political subjects through their control of technical standards (like the PAL and NTSC standards that regulate image frequency, color spectrum, and aspect ratio). Because the power to modulate the speeds and images dictated by such standards is "withdrawn from social praxis," our affective powers are impoverished, and we are left with what Lazzarato calls a "'poor' perception."[64] The ontology of time-crystallizing machines thus gives way to an ethics or politics of the standards, codes, or protocols upon which images or perceptual objects are

58 On "participatory culture," see Henry Jenkins, *Convergence Culture: Where Old and New Media Collide* (New York: New York University Press, 2006).

59 Steyerl, "Poor Image."

60 Steyerl.

61 Maurizio Lazzarato, *Videophilosophie: Zeitwahrnehmung im Postfordismus* (Berlin: b_books, 2002), 113–127.

62 Maurizio Lazzarato, "Machines to Crystallize Time: Bergson," *Theory, Culture and Society* 24, no. 6 (2007): 93–122.

63 Paik and Vertov are central references for Lazzarato throughout *Videophilosophie*.

64 Lazzarato, *Videophilosophie*, 78.

formed and synchronized with emergent subjects and social collectives. And because they expose the materiality of digital file formats, video codecs, and compression algorithms, today's poor images harbor a significant political promise, a potential for resistance that can be deployed creatively against the impoverishment and standardization of perception.

It is, of course, debatable whether a movie like *Unfriended* succeeds in this respect. Certainly, at the level of its narrative, it seems to fail to articulate anything like a model of sociopolitical resistance. If anything, its teenage drama of betrayal, suicide, and revenge—all mediated by the networks and interfaces of social media and leading to the death of the entire group of "friends"—serves as a critique of contemporary socialization processes. This ideological critique not only takes aim at online bullying, then, but also exposes an infrastructure of communication and of intersubjective relation that has rendered the term *friend* highly unstable in the age of Facebook. However, beyond this more overt political critique of today's highly mediated forms of collectivity, the movie's use of glitches serves to focus attention on, and to channel affect to, a deeper level, where subjectivity itself is being produced and modulated in an environment of microtemporally operating machines and protocols.

Toward this end, glitches serve at times like micro-cliffhangers, causing us to wait for the image to buffer or clear up so that we can see what is going on (see Figure 5). In this respect, the movie simulates the familiar and yet always disconcerting experience of network lag. We encounter this lag in our own Skype conversations when the temporal continuity of protentional-retentional experience is interrupted, giving rise to a feeling like that of a cartoon character who, having gone over the edge of a cliff, remains suspended, floating momentarily between the certainty of solid ground and a realization of the situation's gravity. These micro-cliffhangers focus our attention on the material infrastructure of experience itself, causing us to see pixels as the components but also as material obstacles to vision, as blocky screen objects that, despite ourselves, we try to look around to catch a glimpse of the object on the other side. And in this space of the screen, seemingly unitary but doubled and in fact multiplied even further by the machinic and social networks in which it participates (both diegetically and materially), our vision is dispersed, divided. We are forced to scan the screen for relevant information; our gaze is not sutured, not directed. Consequently, we are hailed not as an integral subject but as a bundle of affects engaged in a collective effort to perceive—an effort that is both enabled and hindered by the protocols and agencies of the media environment out of which our subjectivities are wrought.

Unfriended may or may not ultimately facilitate our efforts to take control of this experiential infrastructure, but perhaps it succeeds in gesturing toward the fact that this effort must be a collective one, aimed at constructing collectivity in the first place, and that it must be mounted around and in relation to the affective technologies of our post-cinematic environment, in the very ruins of our perception. For what the movie undoubtedly does is demonstrate, through a rigorous set of transpositions, the "parasitic cascade" that is restructuring the jointly social and media-technical conditions of life today. In this respect, *Unfriended* not only exemplifies the horror of discorrelation as a stylistic or generic formation; far more importantly, it also engages us affectively and mediates, in the form of a perverse fable, the ongoing shift from a cinematic to a post-cinematic lifeworld. It reveals what Serres terms "the horror

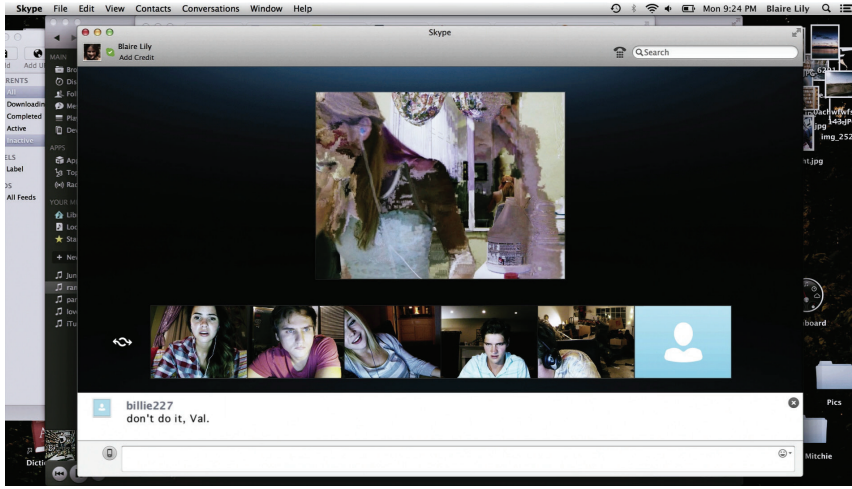

Figure 5
Glitches as micro-cliffhangers or disruptions of protentional-retentional continuity in *Unfriended* (Universal, 2014).

of disorder and noise" as the necessary cacophony of our moment.[65] Against the impulse to dismiss this noise, to write it off as "just a glitch," Serres reminds us, "Yet we know of no system that functions perfectly, that is to say, without losses, flights, wear and tear, errors, accidents, opacity."[66] *Unfriended* positions the glitch (and its others: the ghost, the guest, the host, the friend, the frenemy, and so on) as a "*productive* and creative" force, in Wolfe's formulation, or as Serres puts it more ambiguously, as a force that is undecided between "generative or corrupting" impulses.[67]

Glitches, of course, often result from simple file corruption, but the ambiguous and oscillatory ways in which they are employed in *Unfriended* lay bare the generative nature of digital video more generally: that it is processual, protentional, and marked by a fundamental indeterminacy that not only distinguishes post-cinema from the photographic fixity of cinematic images but also casts our own temporal becoming into a new and uncertain relation to the microtemporal infrastructures of a computational lifeworld.[68] As a side-channel attack on these new sociotechnical relations, post-cinematic horror's use of glitches should not be written off as "mere gimmicks"; to do so is to reproduce the characters' (as well as philosophers' and communications theorists') efforts to rout out the parasite, exclude the third, suppress the noise, or

65 Serres, *Parasite*, 14.

66 Serres, 12–13.

67 Wolfe, "Bring the Noise," xiii; and Serres, *Parasite*, 16.

68 Regarding the generative/productive, rather than merely corrupting/negative, nature of glitches—a dimension that I take to be central to an understanding of the shift from a retentional to a protentional media regime more generally—Hugh S. Manon and Daniel Temkin write, "The existence of glitch-based representation depends upon the inability of software to treat a wrong bit of data in anything other than the right way. The word 'glitch' in this sense does not solely represent the cause that initiates some failure, but also the output that results when improper data is decoded properly. An isolated problem is encountered and, rather than shutting down, the software prattles on. Stated differently, it is a given program's *failure to fully fail* upon encountering bad data that allows a glitch to appear." See Hugh S. Manon and Daniel Temkin, "Notes on Glitch," *World Picture* 6 (2011), http://www.worldpicturejournal.com/WP_6/Manon.html. I would like to thank an anonymous reader for turning my attention to Manon and Temkin's fascinating article.

write off the ghost as "just a glitch." For what these glitches do is short-circuit our perception and the normal temporal flow of retention-protention, ultimately helping us "make sense" of discorrelation. They point, parasitically and phatically, to the new *medium* of interrelation and thereby shed an oblique light on a new set of signal-to-sign relations, a new space of meaning, of politics, and perhaps, ultimately, a new correlation of subjects and systems.

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