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Convergence 2011 17: 245
DOI: 10.1177/1354856511405604

The online version of this article can be found at:
http://con.sagepub.com/content/17/3/245
On production for digital culture: iPhone Girl, electronics assembly, and the material forms of aspiration

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Abstract
In 2008, a British man found that his new iPhone contained photographs of a smiling woman on an iPhone assembly line in China. The photos quickly spread across the internet; the worker was dubbed iPhone Girl; and her factory promised she would not be punished for this ‘beautiful mistake’. New media criticism has a major stake in user-embodiment but has largely neglected this other set of bodies: those that build our electronic gadgets. Attending them can enrich histories of new media and challenge consumerist framings of digital aesthetics. Recent excitement about gestural interfaces suggests that our aspirations for intimacy with computers have informed the design of emergent devices. To idealize gestural control as an escape from technology’s disciplinary effects, we elide the suffering that gesture occasions on the factory floor. Meanwhile, digital culture represents the Asian female as a vessel for fantasies of sex, submissiveness, and adventure. Such fantasies deeply inform the reception of electronics assemblers, including iPhone Girl.

Keywords
Asian femininity, electronics assembly, embodiment, gesture, globalization, human-computer interfaces, labor, production

In August 2008, a man known as markm49uk found that his new iPhone came with a few photographs already stored inside. They depict an attractive, smiling young woman on an iPhone assembly line in Shenzhen, China (see Figures 1, 2 and 3). After he posted them online, they quickly spread across the internet, appearing in several major news outlets. The worker became known as iPhone Girl and her factory’s management assured everyone that she would not be
punished for this ‘beautiful mistake’ (Hong, 2008). Despite her smile, the factory has been accused of workers’ rights violations (Hutcheon, 2008). Despite the accusations, she smiles at us from our screens, themselves made in China. Such tensions indicate a largely unattended critical field: new media studies has drawn very little on the discourse of industrial production. How can we describe the global relations that iPhone Girl points up, the complex forms of world-sharing by which the material, economic, and affective connections between producers and users of consumer electronics get articulated? The embodiment of users has emerged as a major stake in the critical discourse on new media, but scholars have largely avoided the difficult questions about this other set of bodies: those that build our computers, our televisions, our mobile phones. Such attention will enrich materialist historiographies of new media, many of which stress progress instead of production, and will challenge consumerist framings of new media aesthetics. What happens between the regimes of corporeal discipline under which one set of bodies assembles an iPhone, for instance, and those under which such devices get used? In whose name and by whose hands do our digital fantasies become reality? Answering these questions may gear together with existing techno-social phenomenologies, resituating our conception of materiality in digital culture and laying the path for a consideration of electronics assembly in accounts of our embodied relations with computers.

As the strained tone of this our may suggest, this project began as a question about the ramifications of that pronoun in the discourse on new media. Anne-Lise François argues that the we of cybernetic utopianism ‘inevitably obscures the radically different rates and types of change experienced by different social classes’ (2003: 48). Discussing Katherine Hayles’s How We Became Post-Human (1999), she asks who Hayles’s We is and argues that this grouping ‘obfuscates divisions between human subjects, some of whom are writing the course of technological development on the backs of others’ (2003: 48 n. 16). Donna Haraway already recognizes this problem in ‘A Cyborg Manifesto’ (1991). She interrupts her story of the cyborg’s transformative potential to ask ‘who counts as “us” in my own rhetoric?’ (1991: 155).
Haraway holds that ‘Who cyborgs will be is a radical question’ (1991: 153), but modifying her syntax yields a more pressing issue: Who will be cyborgs? My writing traces the path this Who? sets out. As a methodology for media criticism, the present writing draws energy from the problems of exclusion and social justice that this question and François’s raise. My main concern lies with the consequences of such questions for new media aesthetics and theories of technological development.

The ‘Cyborg Manifesto’ has proved a highly enabling text, and I will occasionally return to it. Haraway’s pursuit of a non-humanist, non-naturalist politics guides my own approach to the affects of technological life. Her call to include the ‘unnatural cyborg women making chips in Asia’ in the discourse of digital culture has gone largely unanswered (1991: 154). My treatment of iPhone Girl will suggest that if ‘the nimble fingers of “Oriental” women . . . [and] women’s enforced attention to the small take on quite new dimensions in this world’ of the digital, then these new dimensions may prove less liberating than Haraway imagines. Still, the irony of Haraway’s cyborg myth indicates technology’s complex binding together of materiality and fantasy, whose socio-political ramifications I hope to unpack. Her pronouncement that ‘our best machines are made of sunshine’ might at first seem a naive utopianism of dematerialization, a cyborg dream of escaping the flesh, now tarnished with age; but such cryptic references (in this case, perhaps, to the botanical) in fact provide rich figures for the fact that technology is ‘as hard to see politically as materially’ – and, as I argue, vice versa (1991: 153). We do well to bear this difficulty in mind as we trace the logic of technological development.

A reading of the iPhone Girl images must negotiate their dual status as indices of a worker’s presence before a lens and as a broad synecdoche for the entire class of electronics assemblers. While popular responses to iPhone Girl indicate her social significance, they do not map the tensions and shortcomings electronics assembly unveils in new media scholarship. I do not aim to speak for the exploited laborers in Southeast Asia: distance and privilege compromise my understanding of their situation. Nor will I cast them as wretched and inscrutable in their subjugation; iPhone Girl’s earnest grin warns against such erasures of affective texture. Nor again will I provide a comprehensive description of electronics assembly and the lives it touches. Such studies await consultation by anyone interested in production. Rather, engaging iPhone Girl within a set of media-theoretical concerns may lay the groundwork for more systematic considerations of productive labor yet to appear in the discourse on new media. These images help us to trace crossings between the factory work of electronics assembly, the consumer’s affective relation to emergent technologies, the phenomenology of our use of computers, and the receptions, deferrals, and remakings of Asian labor within the consumerist imaginary. Moving between these will resituate the concept of materiality in relation to technological development and our fantasies about computers. Contemporary technological systems involve an ambivalent notion of the material, such that many digital practices vacillate between idealist fantasy and material reality. Because this ambivalence suggests a materiality yet to come, it offers a way to think technological futurity, emergence rather than obsolescence.

iPhone Girl opens two links between electronics assembly and the consumerist standpoint dominating new media aesthetics. The first concerns the bodily gestures through which people interact with digital machines. It begins locally, with the scene of use. The excitement about recently released gestural interfaces – especially the iPhone and Nintendo’s Wii – makes explicit a connection between the aspirational affects that inform our use of existing devices and the material characteristics of emergent technologies. I take aspirational affect to include an array of anticipatory feelings – hope, faith, fantasy, and certain forms of nostalgia – by whose performance we
indicate what traits we imagine the idealized, perfected technologies of the future will offer. A wide variety of texts imagine gesture as the matrix for an ideal interface between bodies and digital machines. Such idealism relies on problematic concepts of gesture and embodiment – concepts we will scrutinize in detail later – but it clarifies an important aspect of technological development: we got gestural controllers because we performed a fantasy of having them. By acting out hopes for new machines, we influence their development, but in directions that constrain our aspirations for technologies still anticipated. As Christina Sharpe puts it, ‘our virtual imaginings are limited by the already-circumscribed power relations of RL [real life]’, yet these imaginings further form the ‘real life’ of future technologies (1999: 1093). This feedback between fantastical and material development complicates a competing narrative of gesture and technology, one that pertains to iPhone Girl in stressing technology’s disciplinary effects upon embodiment. Analogizing the user’s button-pushing and the worker’s gestures of production, this narrative shows how consumer electronics constrain embodiment in an array of contexts, though with uneven severity. By this view, the idealization of gestural interfacing as an escape from such discipline – as a more organic, spontaneous, or natural way of interacting with machines – elides the bodily suffering that repeated gesture itself occasions in the scene of production and elsewhere. Yet iPhone Girl challenges us with the playfulness of her own gestures – a smile, two V-signs. What aspirational relations might she pursue with the computers in her life?

The second link between electronics assembly and more familiar framings of new media will address the iPhone Girl images as part of the reception of Asian labor within the consumerist imaginary. In digital culture, the Asian female body acts as a vessel for fantasies of sexual pleasure, submissiveness, adventure, and physical prowess, to name a few. These investments echo disturbingly in popular views of electronics assembly, including responses to iPhone Girl. A fantasy life affiliated with digital machines thus deforms understanding of the exploitation that builds the apparatus for those very fantasies. I will augment efforts to ‘expose some of the fantasies that support the highly charged … reproductions of power relations’ in digital cultures (Sharpe, 1999: 1095), but attention to the specific woman in the images will not render her as someone we can address or assist. Rather, I remain with the questions the images themselves set out for new media criticism – asking about the status of the image in technological systems so freighted with aspirational affect. While these questions may not help workers, asking them in a media-theoretical context introduces issues of social justice to a discourse that has taken materiality as a key concept, but largely without thinking its complex links to production.

### Producing gesture

iPhone Girl solicits an interrogation of gesture’s role in digital life. In the discourse of new media, do treatments of gesture rely upon a particular concept of materiality, and if so, does the latter allow us to speak of the gestures involved in electronics assembly? Interpreting the scenes in which we use consumer electronics clarifies the concept of materiality at work in these scenes and shows how aspiration impacts upon our interactions with computers. This phenomenology begins with a story about gestures and early video games, moving toward the iPhone and Wii as typifying gesture’s role in contemporary digital culture.

A memorable gesture associated with the Nintendo Entertainment System (NES, 1985) reveals the developmental feedback between a computer’s material composition and the affective practices attending it. Many NES users nostalgically recall blowing into the ends of game cartridges before play, ostensibly to clear dust. While few deny that the cartridges were faulty and that
blowing helped, Nintendo offered this advice, which is still on their website today: ‘Do not blow into your Game Paks or systems. The moisture in your breath can corrode and contaminate the pin connectors’ (Nintendo). The gesture persisted, however, and became a ritual for framing play, signaling ownership, or showing facility with equipment; blowing into a cartridge offered a pleasurable means of performing embodied intimacy with the machine. Meanwhile, by further corroding NES connectors, this ‘solution’ to the material problem of bad connections fulfilled its own prophecy. The practice constituted the device as having faulty connectors by making the connectors faultier, via the very gesture that ostensibly solved the problem. Hence, the phenomenology of NES use reveals a misalignment between the machine’s material constitution and what we do with it, but one that further forms the machine at a material level. Affective and material aspects of digital culture thus get bound together within gesture.

Media criticism faces the challenge of suturing two temporal aspects, one in which aspirational affects inform the phenomenology of use and another in which retrospection shows techno-social history to have thoroughly conditioned existing technology and the hopes we invest in future devices. This suturing becomes particularly difficult in the digital era, since our technological aspirations yield what Philip Rosen calls ‘ideals of the digital’ (2001: 304), transcendental hopes for ‘a radical break between old and new’ technologies (314). But Rosen focuses on what technology’s historicity means for the image itself, without asking how digital ‘belief’ organizes the scenes in which our computers get designed, built, and used (346). Attending to such linkages of production and use, my phenomenology complements Rosen’s history with a materialist theory of technological emergence. This futuristic stance takes seriously the ways in which technological history doubles over on itself, resulting in overdetermined trajectories of technological development. The resulting study may identify major impediments to transformative technological practice, rather than offering liberative programs; but either way it articulates logics of techno-cultural emergence, instead of histories.

The relationship between aspirational affects surrounding digital technology and the characteristics of emergent devices appears as a developmental feedback loop that complicates the idea of materiality. Models of interfacing often present this topology. William Gibson sees an arcade game as a ‘feedback loop . . . with photons coming off the screen into the kids’ eyes, the neurons moving through their bodies, electrons moving through the computer’ (quoted in Lahti, 2003: 157).

The history museum in the manufacturing city of Dongguan, China eerily echoes this, describing the city as ‘A BENIGN CIRCLE OF INPUT-OUTPUT-INPUT’ (Chang, 2008: 41). Other descriptions of feedback theorize technological development: ‘the logical structures of software design have begun to remap themselves back onto the material world they were invented to represent’ (Bogost, 2006: 40). My account of gestural interfacing complicates these descriptions by interrogating the distinction between digital and actual worlds, inserting the third term of affective relations to technology, whose performance impacts upon the other two. A given techno-historical vector engenders specific feelings about technology, and the resulting practices of use materialize fantasies as new technologies. In this indirect sense, our digital fantasies become real by our hands, not only by those assembling computers.

The user’s performance of technological aspirations results in futuristic productivity, thence influencing the desirable and possible for still newer devices. Crucially, our technological fantasies are only ever inadequately materialized. The ideal technology necessarily remains unattainable, for the perfect computer would be made of nothing – hence the rage for minimalist design, addressed later, and the messianic rhetoric of ‘cloud’ computing, which would dissolve hardware into vapor. However inadequate, built approximations of our technological aspirations redirect trajectories for
future technology by yielding new frustrations with computers and new apparatuses for the performance of our fantasies. Digital ideals do not merely imagine a radical break with history as the ‘not yet’ of an anticipated digital utopia, as Rosen claims; they seek to make actual technologies that materialize such ideals. This feedback’s complication of ‘materiality’ within techno-cultural worlds makes it more difficult to involve electronics assemblers in the scholarly discourse on what they make.

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The recent proliferation of gesturally controlled consumer electronics, such as the iPhone and Wii, makes explicit the feedback between performed aspirations for gestural interfacing and the material determinations of new computers. In July 2007, Apple released a print advertisement that shows a hand using an iPhone and reads ‘Touching is believing’ (see Figure 4). Tactility first seems to vanquish the visuality lionized in the standard ‘seeing is believing’, but as the glowing screen insists, the iPhone remains a largely visual platform. We touch a screen, and tactile input could do little without visual output. More to the point, then, what do we believe by touching? We believe in touch itself, as an ideal interface rubric capable of seamlessly mapping embodied human intention together with computers.

We can trace digital fantasies of the gesturo-haptic by placing contemporary gestural devices beside early memories of video game use, in which we would lean or move the controller in a desired direction as if to augment input from button-pushing alone. Such gestures had no on-screen effect, but we gestured with our non-gestural controllers nonetheless, thus performing the fantasy of a gestural interface that ideally maps body movement into machine code. Idealized representations of advanced computing have appeared in a variety of media – film, television, literature, pop music – and with stunning regularity these imagine the most intuitive interface as gesturo-haptic. Today’s gestural devices answer our expressions of this fantasy. Indeed, the Wii controller rejects the curvy, many-buttoned style of Nintendo’s previous and other current systems, recalling instead the simplicity of the original NES gamepad – the controller so many held (and leaned with) as their earliest digital desires formed (see Figures 5, 6 and 7). A third-party manufacturer has released adapters that allow NES controllers to plug into the Wii, for use with certain Wii games and emulations of the classics; one enthusiast responds by ‘hoping for an experience so authentic I’ll want to blow into my Wii slot’ (Fahey, 2006). Steven Jones, meanwhile, calls the Wiimote a ‘symbolic fetish-object’, successful because it ‘resemble[s] other minimalist design successes such as Apple’s iPod’ and evokes ‘the aura of 1980s Nintendo gaming’ (2008: 132–134). Similarly, iPhone marketing materials stress its almost button-free, blank appearance – casting it as an unmarked brick of pure potential and thus framing technological perfection as a tabula rasa for the performance of future fantasies. We must scrutinize the assumptions about gesture that follow this trajectory from fantasy to achievement; but many take these devices to fulfill cyborg desire, while also engaging a wish for return to a childlike digital simplicity that might be called ‘technostalgic’.

The briefest experience using an iPhone or a Wii confirms that their gestural interfaces remain far from the ideal of naturalized human-computer interaction. A variety of bugs, weird control protocols, and hardware shortcomings keeps gestural control from feeling intuitive or spontaneous. Entering text on the iPhone, for example, requires getting used to the absence of tangible keys. The virtual keyboard sometimes misses a beat or freezes, slowing typing even more. The scrolling function stumbles on large or partially loaded web pages; and the transition from portrait to landscape viewing, accomplished by physically turning the device, is often sluggish. Tellingly, when the iPhone becomes irretrievably frozen, one must force a reboot by holding down a physical
button. With the Wii, the transition from button-based to gestural gaming can yield disorientation, rather than naturalism. Motions involved in *Wii Sports* (2006) games such as bowling, golf, and tennis do resemble their real-world counterparts, but without the heft and momentum of a racket, a club, or a ball, the gestures feel arbitrary, weightless, somehow less real than pushing a physical button. Further, the keys to success at these games do not resemble the principles of the originals. The delicate motions of a long putt prove difficult for the Wiimote’s accelerometers to render, and one quickly realizes that a short flick of the wrist makes for a crisper, less exhausting *Wii Tennis* shot.

**Figure 4.** This print advertisement appeared on the back of several US magazines in July and August 2008. What kind of believing might it mean? (MacDailyNews, 2007)
Figure 5. Controller for the original Nintendo Entertainment System (1985).

Figure 6. Controller for the Nintendo GameCube (2001). Note the transition to a curved design and the proliferation of buttons.
The new gestural controls remain far from achieving the natural, intimate, intuitive interfacing so long anticipated and so loudly heralded when they appeared. Physical products of technological fantasy, the iPhone and Wii are inadequate approximations of the dream of a perfect interface, but their proliferation significantly alters our technological worlds. They change the texture of experience with computers and, importantly, provide a new set of apparatuses for the expression of still newer technological aspirations – hopes whose very structure and performability is conditioned by current devices, by this flotsam of inadequately materialized technological hopes.

The history of gestural interfacing confirms the singularity of current devices. Yes, we spontaneously gesture in a variety of contexts, suggesting that a naturalistic view of gesture may not be misplaced, but this seeming naturalness should obscure neither the impact of the gesturo-haptic ideal on technological history nor the disciplinary effects of the epistemologies that float this spontaneous/conditioned distinction in the first place. All digital controllers require some bodily movement, but current devices differ in concealing the strategies of reduction by which interfaces render gestures as input. The computer mouse, for instance, confines gestures and their representations...
to two dimensions; this prevents freighting the mouse with fantasies of gestural naturalism. One could trace a range of failed attempts at naturalistic gestural interfacing, but not until now has a consumer electronic been successfully designed, marketed, and received as fulfilling our desire for an ideal interface between computers and the body. These devices patently fail to deliver the anticipated cyborg experience, but their appearance underscores important aspects of the discourse on interfacing.

The anticipatory idealization of gesturo-hapticity predominates in new media scholarship and theories of gesture itself. Privileging the tactile relies upon a problematic concept of embodiment. The ideal of gesturo-haptic interfacing imagines a holistic, natural relation between body and computer, rather than an arbitrary segmentation of body parts and movements as significant. It thus presupposes the body’s primary material condensation as un-organized, primordially whole. Under this ‘ontology of the flesh’, as Mark Hansen calls it, a body materialized but not divided against itself founds the primary unity of technicity and humanity (2006: ix). Hansen and others figure this unity as a ‘primordial tactility’ whose ‘protosensory, infraempirical functioning’ positions gesturo-hapticity as an unconditioned ground for embodied life. This view abounds in media criticism. Just before the proliferation of Rumble Paks, critics praised the way haptic devices ‘allow an apparently direct interaction with the computer-generated world without the need for arbitrary software interfaces’, thus approximating the ‘immediate, visceral experience’ of real life (Stallabrass, 1993: 84). Where absolute immediacy seems ‘chimerical’, this is blamed on the ‘technical means available’ – means augmented by current devices. More recently, Jones conflates gesture with a certain naturalism when he speaks of the Wiimote’s ‘simple, intuitive, gestural interface’ (2008: 147).

Digitally mapping a totality of human gestures may be structurally impossible. Machine language can correlate numerous gestures with ‘a database of possible moves in a given . . . situation’, but only at the cost of the corporeal unity that privileges gesturo-hapticity in the first place (Jones, 2008: 133). The binarism of machine language, its enabling scission, clashes with the supposedly smooth, holistic immanence of the gesturing body. A unitary model of embodiment meanwhile submerges the disciplinary forces that have always already constituted the body’s materiality. This impedes the recognition of ethico-political stakes for accounts of the body in various contexts. Myriad questions, including that of production, remain obscure within gestural idealism’s ethico-political silence.

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Privileging the gesturo-haptic sensorium yields the body and its movements as an impassive substrate, neither productive nor produced. Positing the body as such a ground complicates the question of production in digital culture. Gesture’s privilege unhitches embodied presence and experience from ends of production and performance, ends that for so many set up gesture as disciplinary. Haraway, for one, realizes this. Even as she heralds increased intimacy with machines, she resists feminisms that have ‘recalled us to an imagined organic body to integrate our resistance’ (1991: 154). She questions ‘the ontological structure of labor or of its analogue, women’s activity’ (158) as a basis for political intervention, since these entail a naive concept of original unity (e.g., unalienated labor, corporeal sanctity). But this does not justify the submersion of productive labor as a key critical term. Precisely those gestures that do produce may impact most directly upon the regimes of embodiment to which, and through which, we become subjected. The smiling images of iPhone Girl present a visible token of some woman whose pleasure and desire and
suffering we will never know. Her V-signs might stand, inchoately, for all the gestures of productive subjugation that she and her colleagues perform to build the apparatus of her own image’s arrival. The images record how organizations of gesture unevenly distribute productive instrumentalizations and violent exposures of the gesturing body, and how in moments of play, gestures themselves seem to belie or weightlessly subvert just such discipline. Inquiry into production, especially electronics assembly, supplements media criticism with this more sobering view of gesture’s role in technocultural embodiment.

The insinuation of production reveals tensions in media-theoretical treatments of the gesturing body. For video game critics, ‘the player’s moves, the player’s body, are central components of the system’ (Jones, 2008: 149). We hear very little, however, about the producer’s moves, those that build ‘the system’ in which we play. Many who insist on the importance of the body and its gestures for digital media also frame gesture as inevitably liberative. This view suppresses the importance of differentially exploited bodies and their productive labor – the *sine qua non* of consumer electronics – and it enables a perverse reversal by which industrial labor appears as a figure for the body at play. The aspirations consumers affiliate with digital media have yielded what Martti Lahti calls a ‘corporealization of the experience of playing’ with these devices (2003: 158). Attending this drive for corporeal intimacy with computers, he identifies a ‘utopian sense of liberation from real-life spatiotemporal constraints’ (163) – a liberation not despite but through this corporealization. The gesturally interfaced body would become ‘unhinged from contexts of social inequalities ... [and] aestheticized as variety itself ... a toy with which we can play’ (166). This essay’s second half traces a set of identity-political crossings that find a less salutary function for corporeal variety, a synergy of prejudice. Many have interrogated the supposed weightlessness of digital embodiment, especially its supposed liquidation of race and gender oppressions. Beyond the digital personae as which we play, we should also remember the bodies by which we play, those whose labor builds digital worlds.

Connections between capitalism and computer interfacing have equally complex ramifications for the laboring body. For Lahti, a video game ‘takes on a distinctly capitalist dimension ... where one must earn enough money to upgrade’ armor and other bodily attributes (2003: 166). Such involvements of labor and digital life take important steps toward introducing production to media criticism, but they remain unsatisfying:

Games commodify our cyborg desires, our will to merge with and become technology. To be able to earn a more spectacular outfit, the player is invited to learn repetitive bodily movements and reactions. That is, *like industrial work*, fast fighting and shooting games are based on repetition of similar movements and their precise timing; our bodies have to develop a sort of prosthetic memory if we (our avatars) are to survive as we melt into electronic worlds. (Lahti, 2003: 166; my emphasis)

One might have hoped the sentence would read, ‘Industrial work, like fast fighting and shooting games ...’, rather than subordinating labor as a figure for play. But the consumerist hierarchy persists. While ‘we melt into electronic worlds’, the electronics assembler seems to remain fixed in this one. It takes no less than a sweatshop to strip the gesturing body of its utopian investments, and the quest ‘to survive’ remains on the side of the consumer and his avatar, rather than describing the laborer whose productive gestures work her through a field of grave risks and disciplines.

One should not deny that electronics assemblers themselves perform their aspirations with digital machines. Doing so would reduce their lives to labor and flatten the affective texture so evident in the iPhone Girl images. It also would go against ethnographic evidence. In *Factory Girls* (2008), Leslie Chang notes how immigrants to manufacturing cities identify with their mobile
phones. ‘I need to recharge. I am upgrading myself’, they say (2008: 96). Many spend free time at places like ‘the Hopeful Computer Training Center’ in Dongguan, whose signage advertises, ‘in English, MICROSOFT WORD’ (110). In both cases, the performance of hopes for and through technology has social effects while also influencing devices’ use and circulation. But proletarian practices presumably enjoy little standing in marketing and design – scenes of wealth and privilege, if not always Western scenes. No one can claim a technological life free of alienation, but it matters that so few analyses of digital culture consider the phenomenologies of productive instrumentalization so central to the lives of those who manufacture consumer electronics. Strictly consumerist practices and theories play a major role in determining which aspirations some workers somewhere will assemble into a future computer.

Asking about the status of productive labor within discourses of digital media reveals tense relations between the material bases of consumer electronics, the aspirational affects that influence what we do with them, and the logics of development determining the nature of emergent technologies. The electronics assembler does not radically interrupt critical discourse with the truth of her suffering. She appears as a term within the discussion itself – one that may enrich scholarship by forcing a contradiction. On one hand, we must avoid imagining electronics assemblers as a homogeneous field of wretched others; iPhone Girl’s gleeful face reminds us that every life has its playfulness. On the other hand, reading gestural interfacing with a constructivist concept of the body’s materiality shows the impossibility of a situation in which techno-cultural practice would not have disciplinary effects. We must not see iPhone Girl’s smile as proof that such workers do not endure hardship under the systems that make consumer electronics. Such a view perpetuates the submersion of productive labor within the discourse on new media. The case of gesture reveals a feedback between technological constraints on embodied action and the productive energy of a user’s performing technological aspirations, but we must not therefore fail to address the bodies of electronics assemblers themselves, bodies both making and made by digital culture. Such an omission limits critical possibility, not to mention calls for social justice, by suggesting that a critique of technology’s disciplinary effects can remain within the same consumerist frame that articulates fantasies of an undisciplined, naturalized relation to computers. iPhone Girl’s smile may ‘seduce us to take pleasure in a sort of Taylorian effectivity and the commodification of the mechanization of work and bodies, making it a pleasurable experience’, like a video game (Lahti, 2003: 167). But the question remains: whose pleasure? The playful enjoyment, in virtual worlds, of disciplinary repetition does not fairly describe the embodied relation with technology to be found on the factory floor. Yet iPhone Girl’s poses show her capable of just such play in just such a place. Rather than try to resolve this tension, I have traced the transit between aspirational feelings that inform consumer uses of technology and a sense of the materiality of bodies and machines – a transit through which new technologies get built and a variety of bodies get formed by an unevenly distributed set of disciplinary forces. Having suggested how the question of productive labor might trouble the study of new media, I will now address how the figure of the electronics assembler intersects with other significances in digital culture.

The makings of iPhone Girl

The second link between iPhone Girl and the discourse of new media works with the understanding that aspirational affect informs technological development and specifies the fantasies structuring electronics assembly’s significance. The primary response to iPhone Girl appeared on the MacRumors.com forum where markm49uk posted the images. The forum posted 689 responses in
the 129 days after its creation, on 20 August 2008, and it has logged over 770,000 visits. A ‘ground zero’ for the images, it allows us to track their spread. For instance, the first respondent claiming to write from China appears on 24 August, while Chinese media may have covered iPhone Girl two days earlier. Given the scarcity of photographs of electronics assembly, responses tend to see her as emblematic of a large, homogeneous group. Generally resolving that ‘you don’t know who it is and will never find out’, forum respondents make the images a synecdoche for electronics assembly within a network of codes about class and employment, race and nationality, gender and reproduction (MacForums, 2008a – 7). Such discourses maintain the exclusions underpinning digital life, and their intersections signal the complexity of a culture managing the meaning of those who build its apparatus. Recuperating iPhone Girl from this network of appropriations would assume her capacity to ‘express’ or ‘represent’ herself, but her image and its reception become available through the very system of constraints that the expressive individual would resist. The worker’s exploitation and the possibility of her images emerge together, as a production process. Rather than seek the genuine iPhone Girl, I will trace how her images and other texts of electronics assembly transition between the frames that situate them – between age and race, for example, or gender and nationality – thus complicating the significance of production in digital culture.

Interpretations of iPhone Girl that speak directly to her job do not thereby give a clearer view of her. The first forum response reads, ‘she is so fired’ (2008a – 2). The fate of her job remains important in the forum, media coverage, and statements from Foxconn, her employer. No one mentions the more likely punishment, docked pay. Even at the most severe factories, unruly workers tend to lose pay rather than jobs; dismissal would disrupt an already volatile logistics (Ngai, 2005: 80–93). As Chang puts it, ‘Getting into a factory was easy. The hard part was getting out’ (2008: 4). Other forum posts stress iPhone Girl’s exploitation, writing ‘smile if you make $0.40 an hour!’ or simply ‘poor girl’ (MacForums, 2008a – 134, 20). Her profession may guarantee exploitation, but quality controllers in electronics factories fare better than most line workers in China.

Pun Ngai’s Made in China (2005) further shows the difficulty of thinking electronics assembly in terms of a laboring class. Using post-Marxist terms, Ngai pursues a class ontology for contemporary dagong (factory work). She differentiates it from the grongren (proletariat) of the Maoist era; the new class faces ‘new bosses from global capitalist societies’ and greater emphasis on ‘casual labor’, among other changes (2005: 12). Ngai’s concept of resistance occasionally lacks the nuance that her class ontology enjoys. Asking what practices ‘prevent disciplinary power from producing a reified, unitary image of [workers’] bodies’, she claims that Michel de Certeau’s ‘concept of “tactile bodies” highlights the richness and nuances of quotidian practices’ (78). My critique of tactility’s liberative promise casts doubt on this. Ngai risks reifying ‘power’ in order to formulate its ‘interstitial’ vulnerabilities (91). Chinese labor certainly necessitates rethinking class and social justice. But what Ngai sees as workers’ ‘dyslexia of class’ has led me to trace how labor’s coding through other discourses complicates struggles for social justice.

Many turn iPhone Girl’s representation of labor into an occasion for Sinophobia. Several forum posts joke that she faces execution or reeducation as punishment. Chinese respondents correct these misconceptions, but this should not erase the vulnerability of laboring bodies. As Ngai puts it, ‘the dream of modernity in Chinese society . . . is permanently inscribed with factory fires’ and other industrial disasters (2005: 1). Coding labor exploitation as national narrative thus seems neither helpful nor unwarranted. Similarly, respondents can deplore China because iPhone Girl does or does not represent a coherent class. If so, she is a lazy socialist who should be working instead of goofing off – though she will still make other nations ‘indebted to Communist China’
If she does not represent a cohesive proletariat, one can deplore the lack of regulation that allows sweatshops, ‘infanticide’, and so forth. Others attack China by comparing iPhone Girl to Chinese figures from the 2008 Summer Olympic Games, which were happening in Beijing when she appeared. A forum post jokes that ‘She’s not the one actually assembling iPhones, she’s just the stand-in for the uglier girl with buckteeth who does all the real work’ – a reference to Yang Peiyi, the girl made to sing ‘Ode to the Motherland’ for the Opening Ceremony while a prettier girl lip-synched onstage. An article from *PCWorld* later visualizes the same joke (see Figure 8). The article asks, ‘If she is just an assembly-line model, then who is the real “iPhone Girl”? ‘ (Slattery, 2008) Setting aside the ‘real’ iPhone Girl, how does this reworking of her image complicate the significance of electronics assembly? A similar image appears on another iPhone Girl forum; here she is a member of China’s gold-medal women’s gymnastics team, accused of fielding underage athletes (see Figure 9). The team was cleared, but not before livening Sinophobic and racist discourses of government honesty and ‘body type’. iPhone Girl thus serves a variety of functions within Sinophobic systems of meaning.

The labor of electronics assembly often gets ciphered through other identity categories including age, gender, and race. Some suggest that women predominate in factories because they are ‘more diligent’ (Chang, 2008: 56); but most see them as ‘easier to regulate and control’ (Ngai, 2005: 15) – a rationale confirmed by the factory owner in David Redmon’s documentary, *Mardi Gras: Made in China* (Redmon, 2005). The preference for women fuses with the logic of factory labor itself. ‘The bio-power of the production machine has no interest in a general body’, but ‘only in a particular body, a feminine body, that is imagined as more obedient, tolerant, and conforming to the factory machine’ (Ngai, 2005: 15). Some studies of Chinese labor exceptionalize the female,
as when Chang complains of ‘the smell of migrants’ but notes that ‘the young women were immaculate: They never smelled, and their hair was always sleek and shiny’ (2008: 17, 35). Sleek hair insinuates race as a way of rereading a gender distinction. Race also ciphers discussions of age. In response to concerns about iPhone Girl as an underage laborer – ‘She looks about 12/13 to me!’ (MacForums, 2008a – 42) – other posts explain that ‘Asian girls tend to look a lot younger than their Western counterparts’ (2008a – 678). A vapid argument unfolds over whether this age/ethnicity correlation is racist. Those casting iPhone Girl as underage can choose racial or national frames – the Asian as childlike or China as allowing child labor. The overdetermination of iPhone Girl as underage finds its consumerist analogue in the ‘danger’ of children posing as adults online to access ‘adult’ content. iPhone Girl must be underage, whatever her appearance, just as the online poser must be juvenile because he could be. What Lisa Nakamura has said of race online – that it is “whited out” in the name of cybersocial hygiene’ (1995) – applies even more to age. The internet has outgrown age in favor of a global childishness: everyone is recognized as ‘18 or older’, but the seeming weightlessness of online sociality makes everyone also a kid again.

The discourse of iPhone Girl challenges existing arguments for digital machines as an apparatus for identity-political struggles. Many of these rely on consumerist frames. Theorists who praise the ease of ‘passing’ online, of destabilizing social categories by ‘trying on’ new identities, articulate...
an ableistic rhetoric that ignores those for whom digital culture means more exploitation, not transformative possibility. The praise of abundant options makes clear that the user is the only node of the production–consumption circuit considered. In her seminal ‘Race In/For Cyberspace’ (1995), for example, Lisa Nakamura praises online worlds in which gender and racial passing enables ‘critical rearticulations and recombinations of race, gender, and class’. While she scrutinizes ideas of ‘the Internet as a social leveler’, she assumes ‘access’ and elides its differential distribution – not to mention the distribution of labor involved in building computers. Describing how in white collar offices ‘the line which divides work from play has become increasingly fluid’, she bounds the liberative potentials of digital life within practices of leisure that ‘pass’ as work.\textsuperscript{18} While the iPhone Girl images depict a stolen moment of play, that distinction for her is likely far from ‘fluid’. In any case, the hostility with which many greet her images indicates a gulf between the consumerist we inhabiting digital worlds and the often invisible others making these worlds possible.

Assumptions about invisibility further complicate theories of digital identity politics. While Nakamura (1995) rightly notes that ‘choice is actually an illusion’ in the assumption of a gender or race online, the perceived possibility of invisible anonymity lingers as a grounding for the user-agent’s action in virtual worlds. In part because she writes before the proliferation of an image- and video-rich internet, and before government’s frequent surveillance of network activity, Nakamura does not ask how increasingly panoptical cultures may enforce visibility and thus undermine a user’s control of a given situation – as iPhone Girl’s image circulates beyond her grasp. Indeed, in her more recent article on the ‘decidedly anti-Asian flavor [of]… protests against “Chinese gold farmers”’, Nakamura concerns herself less with the ideal of invisibility than with the problem of visibility online (2009: 130). She studies the predominantly Asian ‘gold farmers’ who play online games in gruelingly long shifts, earning in-game currency that they sell to presumptively western players who do not wish to spend time earning this virtual loot themselves. This group’s obtrusive visibility interrupts the consumer’s play and his sense of fairness, making gold farmers targets for racist scorn. For Nakamura the position of these ‘virtual “service workers”’ mimics that of illegal immigrants and other low-end workers in service economies in the global South (133–134). Service industries make the worker more visible to the consumer than manufacturing does, keeping the latter largely out of the picture. Gold farming follows narratives of dematerialization that should not obscure the traditional labor exploitation that makes digital worlds materially possible. Online anonymity obtains both for gold farmers and for those harassing them, but this ideal of invisibility remains implicitly consumerist because it focuses on identitarian ramifications for users of these devices, rather than their makers. Nakamura has linked the ideal of invisibility with a ‘utopian belief system prevalent in’ virtual worlds (1995). Our attraction to this ideal stems from fears ‘that the virtual may not sufficiently allow for meaningful departures from the real’ (Sharpe, 1999: 1089). If the ideal of invisibility appears among other ‘libidinal investments’ (1090) in digital machines, including gestural investments, then we may wonder if the desire for invisibility does not likewise have disciplinary effects as it feeds back into the material determinations of future technologies.

The phenomenology of computer use shows how identity-political meanings ramify into the formal aspects of digital machines, such as the interface. In pursuing the promise of ideal interfacing, recent gestural devices open a field of gendered and erotic significance. Steven Jones argues that the Wii attracts women not just through marketing and design; rather, with gestural interfacing
‘a possibility space is created . . . for women, especially, or for anyone not [a serious gamer] to flail around in a silly way’ (2008: 135). Jones pursues an idea of neuter ‘fun’ that has informed responses to a range of devices, from video games to digital cameras, but his treatment of femininity in this regard calls up images of the flailing hysteric. Meanwhile, the perceived intimacy of gestural interfacing also makes it erotic. Praising how ‘tactile feedback . . . literalizes the implied bodily sensations’ of a video game, Lahti argues that ‘Such technologies . . . encompass the space around the player, wrapping itself around her body’ (2003: 162).19 This wrapping-around sounds both sexual and uterine – gestural interfacing as both a swaddling and a dildonics. It matters that when we talk about tactile feedback, we’re talking about a vibrator. If such devices result from the ‘desire for a cybernetic relation with the computer’, then they may also entrench a heteronormative, reproductivist, genital-centric erosics by facilitating the technological expression of normative sexual practices and postures, while stymieing others. We will address the normative effects of gestural interfacing for gender and sexuality at greater length later.

Gender provides a site for binding racist discourse together with other systems of meaning for Asian labor. As Nakamura notes, online ‘performances of Asian female personae . . . are doubly repressive’ because they create synergy between racist and misogynistic discourses (1995). The Asian-female combination structures numerous ‘familiar stereotypes from popular electronic media’. The Chinese Street Fighter character Chun Li – the first playable woman in a fighting game, though Nakamura mistakenly lists her as male – allows male players to ‘adapt the samurai warrior fantasy’ while also pretending to be female. A post on the iPhone Girl forum visually compares her to Chun Li, thus involving production in this orientalist-sexist complex; the user posts an image of Li and an enigmatic question, ‘Wasn’t it her?’ (MacForums, 2008a – 669). For Nakamura the Asian female’s ‘sexual lure’ casts her as ‘submissive, docile, a sexual plaything’, but the laborer’s productive power does not exempt her (1995). Indeed, Nakamura lists ‘MaidenTaiwan’ among usernames exemplifying the fetishization of Asian femininity. The production line’s ‘microphysics of power over the Chinese female body’ may thus become, in digital fantasies, an eroticized form of bondage and discipline (Ngai, 2005: 20). Chang, meanwhile, conflates factory labor with prostitution. She peers in ‘wherever prostitution thrive[s]’ and spies ‘young women . . . sewing’ in a dim room, itself ‘a factory too, the worst kind’ (2008: 111). One wonders if the ‘worst kind’ of factory involves sex acts or needlepoint. These gendered significances trouble recent efforts to ‘include’ women in digital cultures. The Wii’s designer, Shigeru Miyamoto, avows that it is made ‘for women in particular’ (quoted in Jones, 2008: 142). Its ‘avoidance of pink-hardware essentialism’ has garnered much attention (Jones, 2008: 143). But the popularity of figures such as Wii Fit Girl – the panty-clad star of a viral video – reveals the impulse to bring women into male-dominant digital cultures while also maintaining the female body as an erotic object. The entanglements of gender and labor in digital culture show another sense in which maker and made mutually inform each other.

Statements about age and the erotic female appear in close proximity on the iPhone Girl forum and many other texts of Asian femininity. One wonders if concern about iPhone Girl’s age refers to her labor or to anxieties about finding her sexually attractive. One post puts it bluntly: ‘She looks as if she is 10, a hot ten year old at that’ (MacForums, 2008a – 451). Prevalent insistence on her childishness amounts to paranoia about wanting to find a young girl sexually appealing – even when faced with an adult. Many compare iPhone Girl to the famously underage Ellen Feiss, who acts stoned in her advertisement for Apple (dir. Errol Morris, 2005). The response to Feiss centered on ‘concern’ about child intoxication; this deferral of erotic desire matches concern about child labor in responses to iPhone Girl. Chang too conflates age and sexuality. She translates chuqu, the
word for migrating to factory work, as ‘to go out’. The threat of a pun on ‘to go out with’ abounds, as in ‘Almost all the young people in her village had gone out’ (2008: 10). (Ngai translates the word as ‘getting out’ [2005: 3].) This suggestion of child erotics echoes in the iPhone Girl forum, where ‘cute’ may be the most common response. Respondents make clear that cuteness does not rule out erotic attraction. The online popularity of kawaii, lolicon, and related cultures may have encouraged ciphering images of Asian femininity and Asian labor through narratives of child-ishness and erotic attraction.

iPhone Girl’s attractiveness also refers to her (re)productive power, including production of the devices by which we see her. Indeed, ‘labor’ connotes both a sweatshop and a childbed. For a female factory worker to be ‘in labor’ might mean getting caught up in multiple bio-capitalistic production cycles – making digital machines, images for desire, and maybe more workers – such that ‘sexual reproduction is one kind of reproductive strategy among many’ (Haraway, 1991: 162). Jones notes that ‘many overlapping factors come into play to define any platform, including technologies of production and reproduction’ (2008: 131); but few media theories address the (re)productive labor of the Asian female body, which itself gets reproduced, re-engineered, and reimagined through and in the service of emergent technologies. Digital interfacing ‘relocates and doubles our body in such a way that it is simultaneously and interconnectedly present in two places at once’ (Lahti, 2003: 164). This promise of corporeal doubling holds fantastic power in the consumerist imaginary. Reading the iPhone Girl images, we have seen how the body of the Asian female gets doubled – sited both in the factory, where she makes our computers, and onscreen, in orientalist fantasies of sex and domination.

iPhone Girl’s correlate in this colonial structure of corporeal doubling may be Lara Croft, of the Tomb Raider franchise. Originally a video game avatar, Croft plunders foreign lands in search of treasure. She combines adventure with buxom sexiness, and she is not absent from discussions of iPhone Girl. A forum post notes that ‘for some it seems that Lara Croft is about as real as it gets’, in response to a suggestion that those fixated on iPhone Girl mistreat women in ‘real life’ (MacForums, 2008b – 185). Angelina Jolie plays Croft in the film versions. Jolie has adopted multiple children from Southeast Asia, part of the humanitarianism she began in Cambodia while shooting the first Tomb Raider film. For those whom Jolie adopts, at least, Croft’s forays into foreign lands, her tendency to bring home loot, are indeed ‘as real as it gets’: filming Tomb Raider ignited Jolie’s maternal philanthropy, which therefore might never have emerged without Croft. As with gestural fantasies, the technological rehearsal of an imaginary world (Croft’s) feeds back into real life (as Jolie’s colonialist motherhood). A colonial framework reads the productive work of Croft/Jolie and iPhone Girl as (re)productive forms of maternal femininity, while in both cases maintaining erotic intensities.

The logic of ‘fun’ further inflects the femininity of both figures. Lahti reads avatars like Lara Croft as examples of a ‘phallicized and triumphant female’ promising adventure (2003: 168). Thus, if ‘femininity for men has been associated with passivity and weakness, for instance, “trying on” femininity within the context of such games remains a kick-ass experience’. But do the playful gestures of iPhone Girl bespeak a similarly kick-ass time? Her appearance must not obscure the difficult questions her image raises for analyses of digital culture. The ideas of fun and wonder – which, for example, allow us to see the Wii ‘as cool . . . because it’s just “fun”’ (Jones, 2008: 135) – must be rethought and contested when they guide criticism away from the questions of materiality and social power that structure digital life. We continually lose track of the ‘real’ iPhone Girl and the reality of electronics assembly in this deadly playful mix of technological possibility and discipline. But we get to hold onto the images, which may replace the fantastical investments in the digital that my reading has identified.
I want to return to the iPhone Girl images themselves, not as evidentiary artifacts or signs in the discourses traced earlier, but as potential fetish objects with more to show about affect and new media. Ontologies of the digital image lead too often to a vulgar realism or an idealized digitality by which everything melts into air. As early as the ‘Ontology of the Photographic Image’ (1958), André Bazin identifies the photograph’s ‘virtualités esthétiques’ (16) – its aesthetic virtualities, mistranslated by Hugh Gray as ‘aesthetic qualities’ (Bazin, 1960: 8). Bazin’s virtualist photo-ontology solicits a refusal to arbitrate between model and copy: ‘Every image should be felt as an object and every object as an image’ (1958: 16; my translation). Remaining with the iPhone Girl images as objects, rather than taking them as windows onto a reality we might intimately know, helps to identify the ‘spiritual filth’, the strange feelings for technology, that motivate narratives of achievement with which many greet emerging devices. Having taken these images as an occasion to explore how affective investments materially inform technological development, we may find the images as a remainder to be fixated upon in their specificity – their singularity not as representations of a scene, but as image-objects for affective attachment.

If I draw upon the iPhone Girl’s smile, but to the blurred fingertip of the photographer, who remains even more radically anonymous and unrepresented than her subject. If, as some suggest, iPhone Girl has fled her fame and returned to her village, then perhaps the photographer’s finger remains in the company of those moving lines in the foreground, the variable trace of an ongoing productive motion.

**Coda: Aspiring for production**

Finding meaning for the gestures of electronics assembly entails a productivist reading of feelings about technology. We guide technological development by using current consumer electronics to express aspirations for future computers. This developmental feedback constrains technological aspirations yet to appear, by determining what apparatuses may be available for expressing them. My pursuit of electronics assembly’s impossible visibility thus emerges alongside other ‘digital ideals’, and the question of production itself arises as a response to technocultural development, not as a clean break from it. Toby Miller holds that new media critics must ‘follow the money, follow the labor’ if we hope our young discipline will ‘contribute to the public interest’, but we also need to ask how the productive systems of digital culture shape these questions of labor and economics themselves (2006: 9). We might say of the electronics assembler’s ideal visibility what Derrida says of the ideal in Husserl: ‘this ideality is not an existent that has fallen from the sky; its origin will always be the possible repetition of a productive act’ (1973: 6) – the desire for a view of production as itself produced, determined by and imbedded in the discourses of digital media.

Our performance of technological aspiration never produces a technology fully adequate to our desires, yet dreams of such adequation persist. The reiterated gaps opened up through this misalignment, this persistent failure of our desires’ products to deliver, constitute the unstable space of technological development. In other words, the horizon of the technologically desire-able does not advance toward the purification of an ideal, but shifts in response to devices’ latest shortcomings. Any attempt to recover the laboring body for digital culture likewise produces further formations of that figure, rather than unveiling the truth of production. As Brian Massumi suggests, any description of the logic of technological emergence is itself provisional: ‘if feedback from the
dimension of the emerged re-conditions the conditions of emergence, then ... conditions of emergence change. Emergence emerges. Change changes’ (2002: 10). It does not stand to reason, then, that after recognizing affect’s productive energies, we might aim for a more just or satisfying world by managing our feelings – not just because feelings are slippery and obscure, but because the very relation between affect and production is unstable.

Within this writing, this instability produces a misdirection. The search for the laboring body in digital culture leads right to the scene of consumption, where ‘mere feeling’ finds a role in the constitution of our technologies and thus in the lives of those who build them – conditioning, in the process, our desire to know both. The iPhone Girl images also circulate in this production–consumption circuit; an encounter with them offers no clear answer to the question of electronics assembly but suggests a strategy for approaching images. We might begin by addressing such images not as representations of a state of affairs, but as objects produced. The iPhone Girl images emerge through inscription in the memory of a specific device – itself just then emerging from its own production – and through networks of electronic dissemination. Their circulation entrenches a variety of meanings for production in digital culture, from racist understandings of labor to theories of interfacing that elide productive gesture. Our encounter with these images does not escape the consumerist framework, but attention to the irreality of their representational work – to the impossibility of making plainly visible digital culture’s conditions of possibility – may challenge new media aesthetics by insinuating production as the basis for a theory of representation.

Husserl calls intention the productive working-together of the just past and the barely anticipated, a weaving of past and future into the world seen ‘now’ (1991). For him too, affect may provide a grounding for phenomenological thought’s reflective self-presence. Dominant readings of Husserl – such as Lévinas (2006) and Henry (2008) – further specify pathos as this affective ground’s basic character. By contrast, I take aspirational affect to ground technological experience, thus privileging Husserl’s theory of time over his theory of intersubjectivity. Intention’s centrality calls us to privilege anticipation, aspiration, anxiety, and other futuristic affects – just those feelings that mark our use of computers. These combine with the reification inherent in any techno-genesis, forming what we might call a ‘very long now’ of technological development, a temporal degree-zero that interweaves the ideals of an imagined technological future with the imperfections of the technologically just-past. This focus on time extends the Husserlian reading of intentionality as a productive, world-making function: like intention in general, technological aspirations function as a combination, in the present, of the given and the anticipated.

Within the very long now of technological development, the performance of a-spiration, a breathing-toward, emerges as the fleeting self-presence of affect’s productive work, which makes the substance of our worlds. Aspiration here breathes toward and breathes as the technological future – a labored breathing, a breathing as labor that is yet as evanescent as any unsecured future. For technological development, practices of aspiration form the breath of silent soliloquy that haunts the classical phenomenologists, the silent voice that says, ‘You have gone wrong, you can’t go on like that’ (Husserl, 1970: 280). The question of hearing or heeding such aspirated words may remain indefinitely open.

Notes
1. The relative singularity and homogeneity of electronics assemblers as a social class remains contested. Some studies (e.g., Chang 2008) do not mark electronics assembly’s difference from other manufacturing centered in Southeast Asia, while others do. Though many prefer the Mandarin dagongmei (roughly, ‘factory girl’), I use electronics assembly and electronics assembler to specify those predominantly
female factory workers, in China and elsewhere, who build consumer electronics – a specific problematic of production for new media criticism. For more on electronics assembly in contemporary debates about class ontology, see Ngai (2005: 1–22).


3. John Caldwell’s Production Culture (2008) offers an account of labor in the production of film and television. As with some new media criticism, factory labor serves here as an extended metaphor – in Caldwell’s case, one for the types of exploitation suffered by ‘below the line’ workers. I am interested in labor ‘on the line’ in the Fordist sense, the literal factory labor that enables digital culture.

4. See Jan Harris and Paul Taylor’s Digital Matters (2005) for an extended theorization of techno-genesis and technology’s ambivalent materiality – which the authors call ‘im/materiality’.

5. The synergy between racist and misogynistic representations intensifies stereotypes of the Asian female. From the very first playable female character in a combat-based video game, the Chun Li of Street Fighter II (1991), to the eroticized Asian women of contemporary games, such as Kurenai in Red Ninja: End of Honor (2005), orientalist fantasies about the martial arts encourage portrayals of Asian women as brave, deadly warriors, but without sacrificing their erotic charge. Tellingly, both Chun Li and Kurenai fight to avenge the murder of their fathers; their victimhood keeps them available as submissive objects of desire, despite their deadly skills.

6. In his edited volume, Cyberspace Divide (1998), Brian Loader provides an introduction to consumer-oriented questions of agency and socio-political justice in digital cultures. Contributions by Holderness (on access) and Adam and Green (on gender and labor) are particularly relevant in the present context. Haywood (1995) provides more basic analysis of ‘information poverty’.

7. I do not mark generic differences between video games and non-gaming practices with digital media. Video game critics have articulated a compelling set of genre-specific terms – ‘fun’, for example, and ‘play’ – and I have recourse to these later in the article. However, given the increasing possibility of gaming on a variety of devices, and given the hybridization of games as marketing tools, serious hobbies, or economic ventures for the player, I do not take the division between game and non-game practices as relevant here.

8. Lahti (2003) explicitly links this topology with gesturo-haptic interfacing: when “‘realism’ is based ... on the tactility of playing ... it is a seamless loop between the computer (controller) and the player’ (163). Despite the material grounding of his and Gibson’s formulations, many attack what Mark Hansen has called the ‘clichés of disembodied transcendence’ (2006: 2) that sanction digital idealism. Notable discussions of disembodied computer consciousness appear in Kurzweil (2006: 198–203) and Doyle (2003). Yes, theories of mind-uploading sometimes assume indifference to a consciousness’s material substrate and thus float a bad dualism – ironically, the very problem that Gilbert Ryle’s much-appropriated ‘ghost in the machine’ derogation finds in Descartes. But writers including Hansen replace this bugaboo of disembodiment with what might be called ‘clichés of embodied immanence’, uncritical concepts of embodiment with equally pernicious effects. I mean ‘uncritical’ in the technical sense; Hansen’s and similar studies involve speculative, rather than critical, phenomenologies of the relation between body and world.

9. With particular attention to Apple’s iMac G5, Peter D. Schaefer and Meenakshi Gigi Durham (2007) have examined the social implications of minimalist design aesthetics and ‘invisible’ hardware: ‘the reduced physical presence and attenuated shape of the iMac G5 naturalize the machine by reducing its physical presence, which in turn camouflages the politics of technology’ (48).
10. I borrow *gesturo-haptic* from Brian Rotman (2002), who appears to have coined it. I share neither Rotman’s idea of embodiment nor his preoccupation with inscription, but his pairing of gesture (input) with hapsis (output) is helpful. I use *gestural* to characterize the latest devices because haptic output has succeeded on the mass market since at least 1997, when the Rumble Pak was released for Nintendo 64.

11. *Technostalgic* indicates tendencies that show nostalgia’s influence upon technological practice (e.g., emulating obsolescent video games). Vestberg (2007) suggests that the earliest use of *technostalgia* is Richard Francaviglia’s *Hard Places* (1991). Its seminal use in new media scholarship may be Gill 1997. I do not follow Gill in taking it to mean a writing of alternative histories through technological idealism, nor do some other contemporary writers (e.g., Swalwell, 2007: 265).

12. Those who idealize gesture as a natural, spontaneous, intimate form of expression often draw upon theories of the body as primordially unified in its own tactile self-presence. Recent expressions of this view often ground themselves in post-Husserlian phenomenology, especially Merleau-Ponty (2002). For an extended study of the primordial coupling of gesture and corporeal unity, see Gil 1998.

13. For more on iPhone Girl in relation to specifically Asian consumer cultures, see Lisa Nakamura’s ‘Economies of digital production in East Asia: iPhone Girls and the transnational circuits of cool.’, (2011) issue 2 of *Media Fields* – an article I encountered only after approving final revisions to the present study.

14. Various photographs of electronics factories have circulated online. The iPhone Girl images are unusual in depicting a worker so directly. For more on the history of photographing (factory) labor, see Corwin (2003) and Braun (1995).

15. Numbers following quotations from the MacRumors.com forums indicate the response number. User names and timestamps remain available online.

16. Working on Apple products further suggests above-average conditions. In 2006, the UK’s *Mail on Sunday* reported substandard conditions in Foxconn factories in Longhua and Suzhou (AppleInsider, 2006). Per posts on the iPhone Girl forum, investigations and intensified oversight by Apple and workers’ rights groups resulted in better conditions for Apple lines than for others.

17. Because factories assembling electronics often enjoy closer scrutiny and require more skilled work than, say, garment or footwear manufacturers, they tend to employ slightly older women. The minimum working age is 16, and most judge that iPhone Girl meets this standard.

18. Fraser (2002) and Ross (2003) address how the ‘information society’ and ‘knowledge industry’ have changed the nature of office work, with special attention to the less formal work environments that digital culture occasions.

19. The new gestural devices are quite sexually suggestive. The iPhone offers a ‘two-finger zoom’, a spreading with vaginal connotations; and the Blackberry Pearl (2006) features a trackball (the ‘pearl’) whose name, shape, and use suggests clitoral stimulation – also true of the small ‘pointing stick’ on many laptops. A *New Yorker* review of the Amazon Kindle calls the five-way switch a ‘control nipple’ (Baker, 2009), and commentators still identify ‘something stupidly magical about blowing the [NES] cartridge’ (Sliwinski, 2006). One phallic equivalent would be the frantic shaking of the Wiimote, suggesting masturbation, required in Wii games like *Rayman Raving Rabbids* (2006). For more on sex and interfaces, see Springer (1991).

20. The films are *Lara Croft: Tomb Raider* (Simon West, 2001) and the aptly titled *Lara Croft Tomb Raider: The Cradle of Life* (Jan de Bont, 2003).

21. My interest in affect may recall the phenomenologies of the ‘theological turn’, but by stressing aspirational affect as a temporal function, rather than pathos as an intersubjective phenomenon, I part ways with the negative theologians. For more on the theological turn and phenomenology, see Janicaud et al. (2001). Henry (2008) provides an instructive reading of Husserl and affect, as well as an authoritative proposal for a Christian phenomenology (2002).
References


**Biography**

Seth Perlow is a doctoral candidate in English at Cornell University, USA. His research focuses on digital media, critical theory, and American poetry. His dissertation, ‘Lyric Ignorance: American Poetry and Its Equipment,’ examines how the rhetoric of ignorance has shaped the afterlives of lyric poetry in the period of digitization. He has received a HASTAC Scholarship from the Humanities, Arts, Science, and Technology Advanced Collaboratory, and his criticism has appeared in *In Media Res, Mantis, The Wallace Stevens Journal*, and elsewhere. His poetry and literary translations have appeared in a variety of journals and anthologies.