Still Exhausted

Introduction

Catie Cuan, Douglas Eacho, and Sydney Skybetter

As we were writing this introduction, the performers in SAG-AFTRA were still on strike against Hollywood studios and Silicon Valley streamers, and considering expanding their fight to cover acting for video games (Parrish 2023). Like all workers, these actors demand more compensation for their effort and protected labor conditions. Like many workers, the actors fight against potential attempts to automate and discount the cost of their labor—in this case, through recent advancements in neural-network machine learning known to the public as artificial intelligence (AI). While these advancements have arrived with their share of hype and grift, there is no doubt computers will increase their capacity to generate convincing images and speech at a click. Always engines of simulation and doubling, our ever-theatrical computational systems have become expert mimics of human visual art and language. AI thus presents intriguing questions about our relationship to falsity, the semiotics of language, and the crumbling liberal fantasy of authentic subjectivity (Jucan 2023; Dixon-Román and Amaro 2021; Jarvis 2021). But the actors of SAG-AFTRA were not marching from existentialist commitment. They marched for their interests. They posed the duality of computers v. performance, like so many Hollywood stories of doppelgängers, as antagonistic. As SAG-AFTRA President Fran Drescher put it: "What is our business, our gestures, our likeness, our acting, our voices? That's what we're selling. That's who we are" (in Robb 2023).

Figure 1. (facing page) A NAO robot and its shadow as part of the Time to Compile *choreorobotics installation in progress, December 2017. Created by Catie Cuan x RAD Lab from 2017–2018. Catie Cuan, Amy LaViers, and Ishaan Pakrasi, with additional contributions from Erin Berl, Wali Rizvi, and Novoneel Chakraborty. (Photo by Catie Cuan)*

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Drescher's philosophical concerns, long explored by performance studies, have become headline news as an issue of *labor*.[1] Over our cumulative years watching what the world's live artists have been making, this does not surprise us. Media artists like Anna Ridler and Sam Meech have emphasized the embodied efforts of their practices as they create over-laborious high-tech processes, as in Ridler's hand-created mass dataset of tulips training an automatic tulip-classifier (*Myriad [Tulips]*, 2018), or in Meech's hacked knitting machine slowly weaving "8 Hours Labour" for its audience (*8 Hours Labour—Limited Term Appointment*, 2023). Just as dance artist Michelle Ellsworth has set herself to follow absurdly "efficient" routines of "outsourced" choreography generation (*Clytigation: State of Exception*, 2015), Mariel Pettee has trained an AI pose-detection model on her own movements in a melancholy solipsism, exploring what the work of just one body can produce (*mememormee*, 2023). Working too much or too little, creating effort where none was needed, cutting out effort that seems integral to an art practice: such have become the regular techniques of artists thinking with technology. And this focus on effort in turn orients artists to the field of performance.

Performance *is* work, indeed it "does its work while you watch," and is often concerned with work (Ridout 2006:29). Contemporary employment often takes place at a computer, as does, increasingly, the work of performers: TikTok dancers, Twitch streamers, auditioning actors, and experimental artists alike. This truism may seem banal, but while it is discussed in venues ranging from newspapers to stages to galleries, it has largely escaped scholarship on digital performance. The field-defining writings of the 2000s, wrangling a vast array of art practices into some coherent framework, attended to transhistorical and rather geometric thematic categories: "Liveness," "Space," "The Body," "Time," and "Interactivity" are chapters in Steve Dixon's *Digital Performance* (2007), while Chris Salter opts for "Sound," "Bodies," "Machines/Mechanicals," and "Interaction" in his *Entangled* (2010).[2] Even as writers turned to more explicitly political concerns over the 2010s, whether to surveillance (Morrison 2016; Harding 2018) or to questions of democratic communication (Felton-Dansky 2018; Bench 2020), the politics of labor were frequently unattended.[3] In these prior works, one could think computers were only machines used for leisure, or machines present in the communicative interstices of everyday life (watching us, transmitting our messages), but when we arrived at our workplaces we entered a classically analog realm. Apple's famous 2000s TV advertisements portrayed Windows PCs as work computers and iMacs as tools for fun. Perhaps scholarship in digital performance turned too eagerly to the iMac's association of computation with sociality and consumption, while neglecting the PC's drab sphere of service and production.

Two recent waves of scholarship have paved new theoretical pathways. Phenomenology has offered more precise accounts of our encounters with and constitution by devices that envelop our senses, while providing a clear avenue for performance studies (particularly practice-as-research methods) to offer its corporeal expertise to media studies (Jarvis 2019; Kendrick 2017). Though historically phenomenology has been charged with a depoliticization of the subject, Liam Jarvis and Lynne Kendrick have noted the high stakes of digital devices transforming the human sensorium. There may be ample opportunity for weaving phenomenological methods into questions of performing digital work.

Meanwhile, the interrelated threads of posthumanism, new materialism, and speculative realism have proven popular in discussions of mechanical, robotic, and AI performances (Eckersall et al. 2017;

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1. Not for the first time. Academic study of Twitch streamers and web-based pornography performers stand out for their rich explorations of the interfaces between bodies and screens, and for their primary focus on labor relations (Woodcock and Johnson 2019; Berg 2021). All recognizable by performance studies as *performers*, these repetitive and scored bodies share a threat from AI deepfake copy. Could performance theory help these workers articulate the value of their labor against its exposure to nonconsensual theft?

2. See Bay-Cheng, Parker-Starbuck, and Saltz to see this approach spun into joyfully baroque ends (2015).

3. Simone Browne's *Dark Matters: On the Surveillance of Blackness* (2015), which has inspired much performance theory, can be read as a text on the paradigmatic work-relation of the Americas: African slavery. How could her writing guide study of technological racialization as a technique of labor exploitation?

Rae 2018; Lucie 2019; Condee and Rountree 2021). Such scholarship argues that emerging technologies should prompt us to broaden our conception of agencies and actors beyond the animal, in hopes that a decentering of human self-conception might foster a more cooperative and ecological political perspective. As some have responded to these scholars, however, this approach risks reifying and even valorizing technical objects that are the products of commercial enterprises and help maintain unequal social relations (Cotter 2016). Against the claim that ecological thought entails humbled passivity, moreover, we might instead decide that the climate emergency requires deliberate human action (to block pipelines and liquidate oil firms, for instance) (Malm 2018; Saito 2023). New materialist thought has certainly inspired the work of many media-performance artists over the past decade, but we note that many others employ these same technologies within different narrative frames, perhaps with an "old" materialist politics against the "new."

Far from portraying a world in which humans are thrown out of activity by ever-more-active technology, these latter artists stage the tools of automation *failing*. In Sun Yuan and Peng Yu's *Can't Help Myself* (2016), a robot arm is tasked with repeatedly sweeping up its own leaking viscera, failing to prevent its inevitable shutdown. In Ian Cheng's *Emissaries* (2015–17), algorithmic simulations fail to cohere into dramatic action. In Kyle McDonald's *Discrete Figures* (2018–22), a live AI-generated dance fails to shed its glitchy confusion, interrupting McDonald's cool aesthetics with the rough mediation of live computation. In Liz Santoro and Pierre Godard's *For Claude Shannon* (2016), dancers likewise fail to keep up with an algorithmically generated score, forgetting it as they progress. This last slip from technical objects to humans, easily made within performances of similar dramaturgy (what Ulf Otto has termed the "phantasm of displacement" [2021]), indicates the identification at their common root. The machines that are supposed to work instead of us perform exhaustion. A hypothesis, then: *we* are the ones who are exhausted. Even, and especially, when using machines at work.

If mechanical and AI performances refer to problems of energy and fatigue, dance studies may be well positioned to point the way forward for a labor-attentive digital performance theory. In Felicia McCarren's classic discussion of Taylorist modern dance (2003), the human emerges as a source of energy set to a maximally efficient and productive pace, doubly epitomized by the regulated Tiller Girls or the frenzied Josephine Baker. Fatigue appears only as an unfortunate depletion, refuse discarded by industrial capitalism's rapid expanse. In André Lepecki's *Exhausting Dance*, fatigue then becomes a mode of resisting the energetic and kinetic mandate of white patriarchal capitalism (2006). Hiccups and breakdowns mark a radical friction against the human-motor-machine that will spiral along unless we slow it down. We are struck by the relevance of this 2006 work to the stages of 2023, and how little the intervening developments of smartphones, machine learning, social robotics, and a commodified web have altered Lepecki's basic formula of *movement* and its *exhaustion*. It is not as if this technology has stepped in to do our work for us, whether at the theatre or at the office. We are exhausted, still.

Yet we note one shift: in these stage portrayals of robotic, mechanical, and algorithmic slow-down, one gets the sense that the machines are, themselves, rather exhausted. They may be tools for work, but they are not necessarily tools of efficient production. Computers are scenes of employment *and* obstacles to getting work done. Productivity growth has declined for decades and this century's disruptive technological inventions can barely be glimpsed on macroeconomic charts (*The Economist* 2017, 2022). After years of tech-boom cycles in which social media, or self-driving cars, or the internet of things, or the blockchain, promised to kick global innovation into gear, the current mood (and tech-stock valuation) is one of skepticism.[4] Will AI speed up production and

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4. Well before the emergence of electronic computation, John Maynard Keynes famously predicted that work by the century's end would decline to 15 hours per week ([1930] 1963). One can conclude that expectations about impending worklessness have little to do with technological capacity, and more to do with widespread suspicions about the utility of the work we in fact perform.

ease labor through automation? Or will AI be a new version of email, whose efficiencies drown workers in unproductive busywork? After decades of global economic stagnation and political stasis, and with the US and China both apparently caught in a mutual imperial downturn, exhaustion now seems not just a resistance to a kinetic modernity, but an intrinsic feature of contemporary life at its centers and margins alike (Benanav 2020; Smith 2020). Productivity, effort, labor, technological change, social progress, historical revolution—all show symptoms of a slackening, of inertia. Exhaustion has universalized.

Where might the study of digital performance go once free of techno-determinist teleologies of "progress"? What if computers are not building the world of our future, but are waiting to be better utilized in a different social system, or are even preventing that future from coming into being? Indeed, lessening our science-fictional expectations may help us better appreciate the bizarre idiosyncrasies that are so often constructed with digital tools. Virtual reality headsets or social robot companions become *more* appealing to artists and audiences, we venture, once they arrive as discarded dreams rather than as the bleeding edge of tomorrow. And the sheer strangeness of what computers can make possible, particularly with machine learning, can be better demonstrated in the present by shedding the burden of predicting the future. The tedium of laboriously setting motion on individual robot joints appears as an artistic project precisely because of its strain, because of the sheer quantity of coding labor required, not because robots will soon do our work for us. Even artists and scholars working with the purportedly effortless manifestations of AI have emphasized the vast array of social labor required to train large image and language models in the first place: see musicians Holly Herndon's and Mathew Dryhurst's *HaveIBeenTrained* (2023), which back-solved the image generation model Stable Diffusion so artists could learn whether their images had been lifted to train it. Where better for these impulses to turn than the very domain of showing human activity, collaboration, and exhaustion: performance?

Our contributors take up what Michael Shane Boyle has called the "workerist turn" in performance studies (2017) and bring it into discussions of performance and digital technology. Artists, historians, theorists, critics, and roboticists, this varied group has joined together—often literally, with several coauthored works—to explore how an increasingly politicized discourse around technology has manifested in performance. In this spirit, we feel it appropriate to begin with a manifesto from outside the university walls: Annie Dorsen and Sam Gill's "The Work of Art in the Age of Digital Commodification: The Digital Political Economy of the Performing Arts." This rousing call charges arts institutions, particularly those devoted to performance, to understand that the digitization of social life has played a major role in the crises they now face. Rather than approach the web as a neutral channel for advertising and broadcast, as so many arts presenters have done, Dorsen and Gill carefully articulate the driving capitalist motives structuring how the internet works and for whom. In the midst of a long necessary and ongoing reckoning around the racial and social hierarchies embedded in their canons and practices, arts institutions face the urgent need to draw digital infrastructure into their task of transformation.

The issue then turns to three pieces setting out the landscape of contemporary performances that engage with AI, algorithms, autonomous systems, and robotics. In "Training Humans Not Machines: Artificial Intelligence and the Performance Culture of Its Critique," Lisa Moravec considers how live algorithmic work has taken on the project of critique through three approaches: visualizing, experiencing, and mapping. She sketches an institutional sociology of where such works emerge from and how they are funded to arrive at a coherent picture of how this critical turn in the arts has articulated itself. One of Moravec's case studies features an ex-stockbroker, Gerald Nestler, explaining the role of machine learning in market volatility. Marc-André Cossette and Chris Salter then plumb more deeply the legacy of cybernetics and its ties to neoliberal thought. In "Performing AI: Labor and Complexity on the Contemporary Stage," they place Cossette's own work on a human-and-machine-learning-system dance duet within the shadow of Friedrich Hayek. Hayek's theories of "complexity" strike Cossette and Salter as profoundly perceptive about digital

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systems and the capitalist markets they are embedded within: yet Hayek's larger political project is one many artists of "complex" media arts would reject. Bravely spelling out the problem without promising easy answers, Cossette and Salter leave the untying of this knot to the future of artistic practice.

To understand where that practice might head, Kate Maguire-Rosier, Naoko Abe, and Fiona Andreallo document the growing field of contemporary robotic dances. In "What Other Movement Is There?: Rethinking Human-Robot Interaction through the Lens of Dance Performance," they analyze two dozen human-robot dance works and categorize their approaches. They introduce the term "super-machinic" to describe how robots adopt human movement and emulate it into "speed, efficiency, and precision." The article suggests what dance artists can offer the study of human-robot interaction, while showing *TDR* readers what dramaturgies robotics engineers might offer practitioners—and how central the thematics of labor and movement are across this body of work.

The issue then turns to practitioners reflecting on concerns that have emerged in their own practices. Alex McLean and Kate Sicchio's "Live Notation for Patterns of Movement" discusses the complexities and possibilities of real-time notational programming processes and their collaborative efforts to create a live coding language for algorithmic choreography. This plural, prismatic contribution is grounded in choreographic practice and considers embodied relations to the physical labor of computation, robotics, weaving, and dance. In the process, McLean and Sicchio also introduce necessary terminological distinctions and explanations to cut through popular yet imprecise discourse. Turning to the laborious efforts of her own practice, E.B. Hunter's "The Human Labor of Digital Humanities: A Note from the Trenches of Fabula(b) Theatre + New Media Lab" documents the lengthy production timelines and complex labor structures involved in producing VR performances. Demystifying operational hallmarks of digital performance, including financial structuring, personnel management, and project scoping, Hunter insists that the apparent enthusiasm for digital humanities needs to reckon with the overworked reality of humans producing all things digital.

Composer and musician Ken Ueno similarly turns from his considerable experience working with emerging media to advance his skepticism about their racial and economic effects. "Presence and Physiovalence: Artful Resistance against the Neoliberal Digitization of Our Lives" begins with Ueno's reflection on bias, curation, and filtration, and offers his embodied practice as a mode of resistance. Ueno constellates performances ranging from Boston Dynamics' dancing "Spot" robots, Tom Hanks's piano dance in *Big* (1988), and Michael Jackson's 1993 Super Bowl performance, to argue against pop culture's technocratic erasure of difference. As a coda to these reflections, Lisa Talia Moretti's poetic provocation, "I Become a Pattern," considers the embodied tone and feel of humans contra machines—and considers the interrogative nature of motion, captured. Her syllabic traipse formally plays with mechanistic tedium and our everyday performance of proving to a machine that we are *not* a machine.

Our final essays articulate cases of computer-artist antagonisms in the production processes of theatre, dance, and classroom performance. Martin Young reveals a scene of automation and deskilled labor hiding in plain sight: the digital light control board. Exploring this board's origins, "In Memory of the Q-File: Spontaneity, Digital Automation, and Deskilling in Theatre Lighting" advances a powerful historiographic argument for integrating backstage technology into our models of digital performance. In a conversation that dovetails with Dorsen and Gill's concern for web-based performance commodification, Alexandra Harlig interviews dance journalists Makeda Easter and Margaret Fuhrer for "The 'Joy Hook,' 'Weird Feedback Loops,' 'Quick Hit Pieces,' and 'Usefulness': Covering Digital Dance in Digital Journalism." Documenting the binds and ethical quandries facing critics and artists as both increasingly confront each other on commercial web platforms, Harlig shows the ways in which media coverage simultaneously illuminates and "extracts value" from the creators of dance works on and offline. Recording a cue, watching a

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TikTok dance clip, writing up a review: the very pervasiveness of computational media has created a context whereby the increasingly critical social attitude towards computing entails a critical attitude towards previously naturalized, unnoticed actions. Indeed, perhaps the latter has caused the former.

Our opening reflections stress the not-yet-past nature of "modernist" industrial labor and its persistence into digitally embedded performance situations. We close by turning to a primal scene of computational production: Chinese computer factory lines as introduced by Ilinca Todorut's searching and angry "Mobilizing Workers Poetry: A Pedagogical Journal." Teaching theatre during the pandemic at a private high school in Changshu, China, Todorut confronted professional challenges familiar to many *TDR* readers: teaching performance over streaming video to anxious and frustrated students, in her case within the especially intense Chinese lockdowns. Within this historical caesura, Todorut led her students to collaboratively devise a physical theatre piece based on the poetry of migrant factory workers including Xu Lizhi, a Foxconn employee who died by suicide in 2014. Excerpting several translations of these poems, Todorut deftly circles between her pedagogical report, her disciplinary call to consider factory work as a full part of our contemporary world, and nuanced considerations of class consciousness and organization when working with young people. Like Dorsen and Gill, Todorut leans on the Marxist tradition to reorient consideration of what actions today's bodies perform and why.

As a coda, we direct readers to a digital video supplement to the issue: Lisa Müller-Trede's "Breathing Down My Neck: Nonfiction Gone Wrong" (doi.org/10.1017/S1054204323000606). In it, Müller-Trede restages a 2022 performance in which she interrupted her own talk at a conference in affective computing—having hired an actor to deliver the talk—bursting open the academic norms that forbid consideration of the violent uses to which AI research, especially when connected to human bodies, can lend itself.

Whether as artists, historians, researchers, theorists, engineers, or teachers of practice, *our* work is ultimately implicated across "Still Exhausted." We all work with computational media and have all become more aware of how those work processes have been transformed, why, and for whom. But as those who work with live events and fleshy bodies, we are also particularly well-situated to see through any overreaching claims of *how* transformational these technologies have been. Performance can never quite forget the toil of being a body carrying out an action. "Virtual" performances can never shed the rough efforts of creating their smooth landscapes, "algorithmic" performances can never lose the human hierarchies and judgments they reproduce, and "distanced" performances can even draw the absent bodies of deceased workers back into the present for attention from those using the commodities they were once compelled to make. These articles seek to develop a new suite of approaches to writing about performance and new media that attend to work. Yet their legacy, we hope, will center performance and its artists within the growing urgent conversations about digital labor. Where better to set our exhausted bodies that still sit beside our tiring, tired machines?

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