Art in the Age of Machine Learning by Sofian Audry, and:
*Working Backstage: A Cultural History and Ethnography of
Technical Theater Labor* by Christin Essin (review)

Douglas Eacho

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Art in the Age of Machine Learning. By Sofian Audry. Cambridge, MA: The MIT Press, 2021; 193 pp.; illustrations. $45.00 cloth, e-book available.

Working Backstage: A Cultural History and Ethnography of Technical Theater Labor. By Christin Essin. Ann Arbor: University of Michigan Press, 2021; 286pp.; illustrations. $80.00 cloth, $34.95 paper, e-book available.

In his 1943 essay "Pythian Heritage," the exsurrealist Roger Caillois—whose *Man, Play and Games* (1958) would inform early work in performance studies—took aim at the artistic tradition of valuing chance, accident, and spontaneity. The surrealists he had broken from tended to oppose their unconscious automatism against the suffocations of rational planning. Caillois replied that the true surrealist repression was not planning, but skillful work:

> It does happen that wonders seem produced by chance or by fortuitous encounters in the depths of oblivion—which consciousness can barely reach, and which are bestrewn with fermenting shameful lusts and vague thoughts. But in fact, what people receive from inspiration is merely the fruit of their disquiet. Their sudden talent actually stems from sleepless nights. (2003:270)

Creative work may seem accidental and lucky to those engaged in it; audiences too may take an almost religious interest in the graceful results of "chance" composition. But in all cases, Caillois stresses, we confront nothing less than the lifelong labor of individuals and the cultures that produced them. As the past decade has seen a rise in digitally generated "surreal" images, "dadaist" poetry, and "automatically" produced art—along with an increased attention to the politics of labor—Caillois's critique resonates anew.

Two books, different in style and topic, recall this argument. Sofian Audry's *Art in the Age of Machine Learning* introduces readers to how "AI art" is actually made: with a lot of work and skill. He largely neglects, however, that these same computational techniques have influenced the world outside of artistic practice. Might the issue of "automated art" be broadened to encompass automation in the art-making workplace—such as the theatre? For an introduction to this other history of art-automation, and a spirited rebuttal to its attendant ideologies, readers can turn to Christin Essin's *Working Backstage: A Cultural History and Ethnography of Technical Theater Labor*. This rousing book intervenes not just in the fields of theatre and performance studies, though
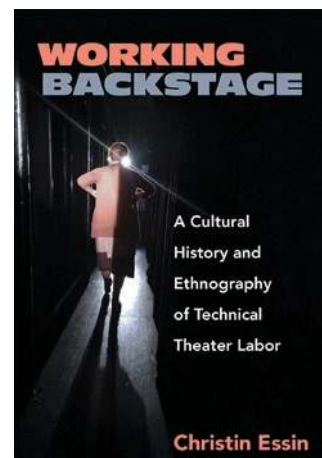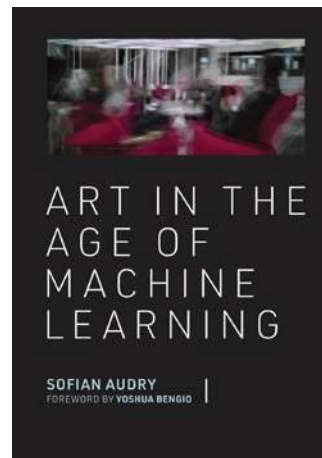
those interventions are pronounced throughout; it suggests that all art emerges from social effort—and the history of conflict that has defined modern society.

Art in the Age of Machine Learning seeks primarily to introduce a range of artworks from the past 30-odd years, explain their construction to nonspecialists, and offer a provisional scheme for classifying them. Despite its grandiose title, it offers neither a theory nor an encyclopedic survey of AI-art practice. Instead it supplies clear, term by term, generously diagrammed explanations of artificial intelligence, machine learning, neural networks, and the various tools within these categories that artists have taken up. As the first serious primer yet published on AI and art, amply illustrated and indexed, it can serve as an excellent introduction to AI in general for a humanities reader.

The Montreal-based Audry, who earned an MA in computer science before joining his city's thriving media-art scene, speaks with technical authority and blunt prose. He opens by dispelling "myths," such as "Myth 3: Machine learning can create art without artists," and "Myth 4: Machine learning will soon give rise to superhuman intelligence and creativity"; his flat language here will aid many over-eager undergraduates (5). Machine learning (ML), referring to a type of AI whereby computer programs autonomously adapt their techniques to their tasks, has come to dominate computational research since the 2000s, when researchers took advantage of large datasets (culled from the Web) and new graphical processing units (mass-produced for video gaming). The same chipsets that render virtual worlds, it turns out, can be trained in classification and extrapolation from any sufficiently large set of data: modeling what photographs of human faces look like thanks to Flickr captions, for example, or modeling passable English paragraphs thanks to the corpora of Reddit and Wikipedia. Often bizarre in their results, these systems have naturally been seized by artists.

Audry has curated a few dozen descriptions of artworks putting his sequentially introduced tools to use. Buzzy terms such as neural network, GAN, latent space, and deep learning are all given clear definitions, helpfully associated with artworks and reinforced by an indispensable end-matter glossary. I was taken by Natalia Balska's installation in which a program learns to sustain a live plant with a vanishingly meager amount of water; Nicolas Baginsky's trio of iteratively self-improving and auto-strumming guitars; and Suzanne Kite's solo-performance explorations of Lakota cosmology through a wired-up hair-braid interface with ML-driven soundscapes and projections. A former student of Chris Salter, author of media-performance bible *Entangled*, Audry shares his advisor's taste for performative, durational, and environmental works and loses interest in pieces trapped on screens; Google's trumpeted DeepDream digital-image creator is dismissed as "viral marketing" (100). Audry further shows an unremarked bias towards Canadian art, and includes almost nothing from outside North America and Europe.

Dividing his book by the different components of any ML process—Training, Models, and Data—Audry's enthusiasm seems to wane. He is enthralled by the mock-biological autonomous systems he begins with, emphasizing their decades-long history, liveness, and "performance" (see Pickering 2009:45–56). Much recent AI art, however, has taken readymade commercial ML products and fed them unusual data to emphasize how AI reflects racism and sexism, encodes hierarchy, and flows from its creators rather than its autonomous-emergent self. Audry dutifully ends with a tour through this work, focusing on excellent pieces but offering little in the way of analysis or context, and never considering its implicit critique of the performance-based tradition he prefers. Since machine learning encodes the values and politics of its creators, might performances that stage ML systems as unpredictable vibrant agents obscure the cultures that produce them, and are reproduced by them in turn?

As an engineer and artist, though, Audry emphasizes the labor-intensive nature of working with AI (118). He complains of naive audiences who misattribute emotional subjectivity to robots and programs rather than crediting their artist-creators (66). And he reserves particular disdain for "attempts to *automate* art using artificial intelligence" (31). Noting that every dataset derives from past human activity, he quotes the artist Brian House: "AI is not spontaneous, but socialized. It is

uncanny not because it acts *as if* it were human, but because it *is* humans, plural" (127). Much the same can be said about the theatre. Few have done so more passionately than Christin Essin.

Working Backstage, while not a traditional "digital performance" text, strikes me as the most important publication on theatre and technology in many years. Through interviews, observation, and archival history, Essin describes so-called technical theatre from the perspective of the unionized crews of New York's Broadway venues, largely represented by the International Alliance of Theatrical Stage Employees Local One (IATSE). She details the activity of spotlight operators, dressers, child guardians, the scenic construction team, makeup artists, and many more, affectionately writing out their hurried actions-in-time to the pointed effect of casting them as performers much like their onstage colleagues. Noting that actors have regularly joined IATSE strikes in solidarity, Essin insists that more people "act" in performance than journalistic and scholarly accounts credit.

Essin, a historian whose first book cast designers as the modernist revolutionaries of US theatre, sees theatre as a thoroughly material practice, supplying an effectively postdramatic description of dramatic production. Considering automation; the gendering of skill, race, and class consciousness; and affective labor, she could readily link her work to that of more theoretically inclined scholars such as Shannon Jackson, Michael Shane Boyle, or Nicholas Ridout. She does not, admitting a distaste for "theory"; others will nevertheless have a strong (and thoroughly indexed) foundation here when making such connections. Moving from two ethnographic chapters to three historical narratives, she demonstrates how attention to theatre's labor history transforms various performance-scholarly modes. Her interviews with Broadway workers (introduction, ch. 1) detail the scale of daily tasks required to stage such spectacles, orienting ethnography towards the material activity of handicraft and attention. The historical chapters, discussing IATSE's own commemoration of its history (2), the history of New York journalism's treatment of backstage labor (3), and labor disputes that intersected with particular productions (4), each recapitulate a century of workers fighting for recognition of their value. Ending with three brief essays on dramatic narratives that reflect on backstage work, her argument thus implicates historians, theorists, and dramatic critics alike.

Her attention to automation, for example, introduces a major performance-historical event that has largely passed scholarship by: the digitization of light, sound, and scenic control. Computers, Essin reminds readers, made the 1980s resurgence of commercial musical spectacles possible (109–13). They also pitted designers against operators, made backstage work newly dangerous, transformed the content of workers' labor, and drove major strikes (127–38, 151). Has the field of "digital performance" forgotten how many performances are now "digital"? Has an exclusive focus on artworks rather than infrastructural history shown only the wonders of digital generativity, eclipsing how computers have intensified and destabilized labor?

In her most indignant (and wryly comic) chapter, Essin relays 100 years of the *New York Times*'s disdain for backstage-worker unions. Disparaging references to "anachronistic" wages, to "managers being forced to employ men who are too old and fatigued to do their work," and stories like "Strike Dampens the Moods of Many Tourists" have dominated the paper's influential theatre pages and taught readers to consider backstage workers as parasitic on true art (97, 108, 114). Essin argues, moreover, that her academic readership shares this fault. Most favor the work of non-unionized "downtown" theatres over that of Broadway, and praise the autonomous value of art as exceptional to its capitalist organization. Worse, she concludes in her "Coda," university theatre departments treat technical labor as a deskilled and unimportant student requirement, insisting that acting, directing, and design share a status that operation and construction lack. If any theatre could stand for the equal dignity of all its workers, would it not be that of the academy?

Essin's depiction of theatre as a site of mass coordinated labor provides a microcosmic stage for what Audry's AI art may ask us to see across society at large. As contemporary computation integrates vaster chains of productive, circulatory, and data-generating activity into any single output, the analytic demand to peer at the efforts behind the scrim becomes more urgent. "Inspiration,"

Caillois wrote, "is simply an act of restitution" (271). Performance, that "act of restitution" as medium, bears the privilege of showing its work.

—*Douglas Eacho*

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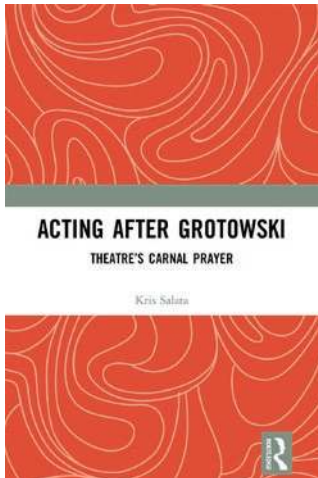
Acting After Grotowski: Theatre's Carnal Prayer. By Kris Salata. London: Routledge, 2020; 150 pp.; illustrations. $128.00 cloth, $39.16 paper, e-book available.

Although there is much lip service paid to the importance of interdisciplinary frameworks in today's academia, interdisciplinarity is a hard row to hoe. In *Acting After Grotowski: Theatre's Carnal Prayer*, Kris Salata, an internationally acclaimed Grotowski scholar, takes on the challenge.

In his earlier book, *The Unwritten Grotowski: Theory and Practice of the Encounter* (2013), Salata explored Grotowski's work as a practical philosophy of the encounter. In *Acting After Grotowski*, he extends that exploration but cautions:

> I don't simply pick up where I left off [...;] rather, I build an argument upon the theoretical foundations I have already developed, introducing some major themes contained in *The Unwritten Grotowski*, and presenting and developing them as it best suits the subject of this book. (2)

The subject is embedded in the subtitle: the carnal (i.e., nonverbal) prayer.

To some, the subtitle may sound intriguing; to others, odd, if not extravagant; to others still, preposterous, sensationalist, even off-putting. Salata is quick to point out that the baffling concept of the carnal prayer comes from Grotowski. Grotowski first used this term (in Polish, "modlitwa zmysłów"; literally, "a prayer of the senses") in 1990 while discussing Ryszard Cieślak's legendary performance in the Laboratory Theatre's production of *The Constant Prince* (1965–70). It is Salata's argument that Grotowski's notion of the carnal prayer, along with his idea of the secure partner, described in *Towards a Poor Theatre* (1968) as a sort of virtual entity that demands from an actor a complete self-revelatory act, "provides a unique insight into his theory of acting as well as an opportunity to discuss the intersection of performance and religion" (xi). Read in relation to one another, the two concepts—the carnal prayer and the secure partner—push our understanding of Grotowski's work forward in critical and ambitious ways.

Acting After Grotowski aims "to overcome the religious/secular binary by treating prayer both as a pre-religious, originary deed performed daily inside and outside of religious contexts, and as an action that grounds the process of the actor" (xi). At the same time, the book examines the nexus