

Fictions of Female Labor¹
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In his 1966 article "ELIZA—A Computer Program for the Study of Natural Language Communication between Man and Machine," Joseph Weizenbaum writes quote, [SLIDE]

ELIZA is a program which makes natural language conversation with a computer possible. ... Its name was chosen to emphasize that it may be incrementally improved by its users, since its language abilities may be continually improved by a 'teacher'. Like the Eliza of Pygmalion fame, it can be made to appear even more civilized, the relation of appearance to reality, however, remaining in the domain of the playwright.²

There's nothing new about a feminine-gendered robot, of course, and there wasn't in 1966 either. A lot has been written about gender as a major structuring category for how automation is understood, and as my title suggests, this paper follows on that work.³ In doing so, I'd like to take seriously the complexly gendered, classed, and raced fictions that shape our understanding of automation. [SLIDE: HEPBURN] The fictional Eliza of George Bernard Shaw's *Pygmalion* is not only taught to speak differently, but is so taught in order to, as Weizenbaum puts it, "appear even more civilized." Unlike a Pamela or an Evelina, eighteenth-century epistolary heroines whose obscure births mask an inherent bourgeois virtue evidenced by their masterful command of language, Eliza's language proves her a primitive, marked by her female, working-class status, and she brings the personality, zest for life, and emotional liberation that primitives always bring in these civilizing narratives [SLIDE: FILM POSTERS]. This character, in her various guises, does a certain kind of work, which her ability to learn—but not *too* well—helps her to do.⁴

¹ Thanks to Andrew Goldstone, from whom I stole this title. See his *Fictions of Autonomy: Modernism from Wilde to de Man* (New York: Oxford University Press, 2013).

² Joseph Weizenbaum, "ELIZA—A Computer Program for the Study of Natural Language Communication between Man and Machine," *Communications of the ACM* 9, no. 1 (January 1966): 36.

³ See for example Anne Marie Balsamo, *Technologies of the Gendered Body: Reading Cyborg Women* (Durham, N.C.: Duke University Press, 1996); Natalia Cecire, "Ways of Not Reading Gertrude Stein," *ELH* 82, no. 1 (2015): 281–312; Nathan Ensmenger, *The Computer Boys Take Over: Computers, Programmers, and the Politics of Technical Expertise*, History of Computing (Cambridge, Mass.: MIT Press, 2010); David Alan Grier, *When Computers Were Human* (Princeton, N.J.: Princeton University Press, 2005); Marie Hicks, *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing*, History of Computing (Cambridge: MIT Press, 2017); Jennifer S. Light, "When Computers Were Women," *Technology and Culture* 40, no. 3 (July 1, 1999): 455–83, doi:10.2307/25147356; Janet Horowitz Murray, "Eliza's Daughters," in *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (New York: Free Press, 1997), 214–47; Sadie Plant, *Zeros + Ones: Digital Women + the New Technoculture* (London: Fourth Estate, 1997).

⁴ Weizenbaum's reliance on the figure of the "foreigner" (notable, too, in Searle's "Chinese Room" thought experiment) is also interesting in this regard; it is routine to invoke an ignorant exotic as a proxy for the quasi-thinking program. Weizenbaum, "ELIZA—A Computer Program for the Study of

Naming ELIZA after the character in *Pygmalion* may seem incidental, and is almost certainly intended to be incidental, but it also points us toward some insights into the kind of work that particular uses of language are thought to do. While robots and AIs are often temporalized as belonging to the future, “robot” somewhat famously comes from the Czech word for “labor,” and robots are usually imagined as taking on the kind of labor historically taken on by categories of human temporalized as past: women, the working class, racially and ethnically marginalized people, geopolitically marginalized people, and children. In the words of the Wikipedia entry for “robot,” quote, [SLIDE] “Robots have replaced humans in performing repetitive and dangerous tasks which humans prefer not to do, or are unable to do because of size limitations.”⁵ Robots do work usually done, in other words, by what I have, in the case of the Eliza Doolittle character, called “primitives.”

To be clear, I am using the word “primitive” to indicate figures that are being represented as temporally retrograde or past, with all the primitivist associations that this entails; it is a situational rather than a stable category, but one that is informed by powerful histories. [SLIDE] As Marianna Torgovnick summarizes the most common primitivist tropes, quote, “Primitives are mystics, in tune with nature, part of its harmonies. Primitives are free. Primitives exist at the ‘lowest cultural levels’; we occupy the ‘highest,’ in the metaphors of stratification and hierarchy.... The ensemble of these tropes—however miscellaneous and contradictory—forms the basic grammar and vocabulary of...primitivist discourse.”⁶ This is a crude category, but I’m using it in part as a reminder of the globalized and racialized nature of labor exploitation, especially in the current moment, even if some of the primary examples in the fictional canon are white European women. What has come to be called the “feminization of labor” is not exactly wrongly named, but is better described, I think, by the past-bound temporalization attaching to certain bodies and positions.⁷

Natural Language Communication between Man and Machine,” 37; John R. Searle, “Minds, Brains, and Programs,” *Behavioral and Brain Sciences* 3, no. 3 (1980): 417–24, doi:10.1017/S0140525X00005756.

⁵ “Robot,” *Wikipedia*, December 28, 2016, <https://en.wikipedia.org/w/index.php?title=Robot&oldid=757007144>.

⁶ Fuller context: “To study the primitive is ... to enter an exotic world which is also a familiar world. That world is structured by sets of images and ideas that have slipped from their original metaphoric status to control perceptions of primitives—images and ideas that I call tropes. Primitives are like children, the tropes say. Primitives are our untamed selves, our id forces—libidinous, irrational, violent, dangerous. Primitives are mystics, in tune with nature, part of its harmonies. Primitives are free. Primitives exist at the ‘lowest cultural levels’; we occupy the ‘highest,’ in the metaphors of stratification and hierarchy commonly used by Malinowski and others like him. The ensemble of these tropes—however miscellaneous and contradictory—forms the basic grammar and vocabulary of what I call primitivist discourse, a discourse fundamental to the Western sense of self and Other.” Marianna Torgovnick, *Gone Primitive: Savage Intellectuals, Modern Lives* (Chicago: University of Chicago Press, 1990), 8.

⁷ On the feminization of labor, see A. (Antonella) Corsani, “Beyond the Myth of Woman: The Becoming-Transfeminist of (Post-)Marxism,” trans. Timothy S. Murphy, *SubStance* 36, no. 1 (2007): 107–38. On the role of race and migration in this scenario, see Silvia Federici, “Reproduction and Feminist Struggle in the New International Division of Labor,” in *Revolution at Point Zero: Housework, Reproduction, and Feminist Struggle* (Oakland, Calif.: PM Press, 2012), 65–75.

As I have argued elsewhere, the choice to automate a form of labor is a judgment about what kinds of labor are valuable, and under what circumstances.⁸ This is really only a way of saying: the choice to automate certain kinds of labor is a judgment about which kinds of workers are in the role of primitives, characterized by a pastness that naturalizes both their exploitation and their supersession by automation.⁹ But ELIZA is not a factory arm robot: rather, it's a natural language processing program. ELIZA's work lies in the construction of sentences plausibly responding to a human interlocutor's input. So what does it mean to consider the construction of text as labor? What does it mean to want to automate it; which is to say, what does it mean to conceive of text-production as a job for primitives? And finally, responding to the question of timeliness posed by this panel's theme, what has this desire become over the last fifty years?

ELIZA uses language combinatorially, responding to a user's inputs based on ranked keywords and simple grammatical templates. In this, the program echoes a number of earlier, usually satirical models for the construction of text, perhaps most famously the machine for producing scholarship at the Academy of Lagado in Jonathan Swift's *Gulliver's Travels* [SLIDE]:

Every one knew how laborious the usual method is of attaining to arts and sciences; whereas, by his contrivance, the most ignorant person at a reasonable charge, and with a little bodily labour, may write books in philosophy, poetry, politics, law, mathematics, and theology, without the least assistance from genius or study. ... It was twenty foot square, placed in the middle of the room. The superficies was composed of several bits of wood, about the bigness of a die, but some larger than others. They were all linked together by slender wires. These bits of wood were covered on every square with paper pasted on them, and on these papers were written all the words of their language, in their several moods, tenses, and declensions, but without any order.¹⁰ [SLIDE: LAGADO IMAGE]

Swift's satire mocks composition as mere word-combination, presenting the machine as a gimmick, a device that is, as Sianne Ngai argues, quote, "enchanting and repulsive at once," and for the same reasons: it promises to save labor, and in doing so, quote, "seems both to work too hard and work too little."¹¹ For Swift, writing, quote, "without the least assistance from either genius or study" constitutes both the machine's appeal, especially

⁸ Cecire, "Ways of Not Reading Gertrude Stein," 304.

⁹ It is worth noting how outsourcing and automation are easily confused in public discourse. As Lisa Nakamura points out, the racialization of abject labor forms as "Asian" persists regardless of the presence, or nonpresence, of racialized bodies. See Lisa Nakamura, *Cybertypes: Race, Ethnicity, and Identity on the Internet* (New York London: Routledge, 2002).

¹⁰ Jonathan Swift, *The Prose Works of Jonathan Swift*, ed. G. Ravenscroft Dennis, vol. VIII (London: George Bell & Sons, 1899), 190, <https://ia800204.us.archive.org/5/items/proseworks08swif/proseworks08swif.pdf>.

¹¹ Sianne Ngai, "Theory of the Gimmick," *Critical Inquiry* 43, no. 2 (December 12, 2016): 472, doi:10.1086/689672.

from the perspective of its eager inventor, and its absurdity; to write without intelligence seems to miss the point of writing in the first place. In Ngai's account, it is not at all coincidental that the gimmick should be associated with both machines and women; to experience something as gimmicky is to identify in it the crisis of labor perpetuated by speed-up and exploitation, the crisis of hyperproductivity.¹²

But I would suggest that, while it is important that while the gimmick may be associated with women and machines, it is equally important in this case that the academicians at Lagado are *not* women. We can see the distinction in what at first seems to be a similar image of writing as mere text-production in George Gissing's 1891 novel *New Grub Street*. In it, the successful cynic Jasper Milvain urges his sister to break into the writing trade, quote, [SLIDE]:

People have got that ancient prejudice so firmly rooted in their heads—that one mustn't write save at the dictation of the Holy Spirit. I tell you, writing is a business. Get together half a dozen fair specimens of the Sunday-school prize; study them; discover the essential points of such composition; hit upon new attractions; then go to work methodically, so many pages a day.¹³

(If this advice resembles a lot of academic writing self-help books...no comment.) In this scenario, the combinatorial work of writing is explicitly connected to wage labor, “a trade,” and framed as antithetical to inspiration. Generic, formulaic, and mechanical, writing in *New Grub Street* is thoroughly infused by an industrial ethic. The novelist Reardon, who comes to a miserable end in Brighton (where else?) because he maintains his literary ambitions, is declared “behind the times,” destined to be superseded by the human automata cranking out text in whatever configuration will sell.¹⁴ [SLIDE] It seems inevitable that another character in *New Grub Street*, the exploited Marion Yule, who writes uncredited and unpaid on her father's behalf, would imagine her own supersession by machines, which again presents writing as a combinatorial operation; quote:

A few days ago her startled eye had caught an advertisement in the newspaper, headed ‘Literary Machine’; had it then been invented at last, some automaton to supply the place of such poor creatures as herself, to turn out books and articles? But surely before long some Edison would make the true automaton; the problem must be comparatively such a simple one. Only to throw in a given number of old books, and have them

¹² Ngai, “Theory of the Gimmick,” 470.

¹³ George Gissing, *New Grub Street: A Novel*, 2nd ed., vol. 1 (London: Smith, Elder, & Co., 1891), 17, <https://archive.org/details/newgrubstreetnov01gissuoft>.

¹⁴ Gissing, *New Grub Street: A Novel*, 1:9.

reduced, blended, modernised into a single one for to-day's consumption.¹⁵

When writing is understood as recombining words according to set rules, it is automatable labor.

So far so good, but what is that word-work *for*? In *New Grub Street*, writing is kitsch in the strict sense that Clement Greenberg describes: an aesthetic resource for the working masses and what Gissing calls the “quarter-educated” to replenish their spirits after capitalism has alienated art from everyday life.¹⁶ In other words, it’s reproductive labor. In this sense, we are looking at a different phenomenon than Swift’s combinatorial machine. The machine at Lagado is a gimmick, whose pleasure and repulsiveness are encoded in the way that, as Ngai suggests, the machine seems to both save labor and work too hard. But the kitsch of *New Grub Street* is not really a gimmick because the workers intended to do this kind of writing are not squandering their learning: as Jasper Milvain says to his sister, quote, “I don’t think you have genius, Maud.”¹⁷ This is what I meant by saying that it is important that Swift’s machine is not operated by women; what *New Grub Street* shows is that when a task is genuinely understood as automatable, then to automate it is not a gimmick; it’s just the the right-timed supersession of past-bound primitives doing genuinely menial work.

The Edison-constructed automaton in Auguste Villiers de l’Isle-Adam’s 1886 novel *Tomorrow’s Eve* takes this principle further by more thoroughly combining the work of language with the work of care, explicitly framing speech as emotional labor. The android, Hadaly, is meant to serve as a replacement for a woman, Alicia, with whom Edison’s friend, Lord Ewald, has fallen in love. While Alicia is beautiful, which is obviously considered nonnegotiable, she lacks noble sentiments or virtue; in Hadaly, Edison can replicate Alicia’s beauty while supplying conversation at the level that Edison and his friend require.¹⁸ Naturally, this is done using two golden phonographs that take the place of Hadaly’s lungs, and whereas the Swift’s satirical text-production machine assembles words in no particular order, Edison provides the phonographs with discs inscribed with language composed by, quote,

the greatest poets, the most subtle metaphysicians, and the most profound writers of the age, geniuses to whom I have applied, and who have sent

¹⁵ Gissing, *New Grub Street: A Novel*, 1:195.

¹⁶ Clement Greenberg, *Perceptions and Judgments, 1939-1944. Clement Greenberg: The Collected Essays and Criticism*, ed. John O’Brian, vol. 1 (Chicago: University of Chicago Press, 1986), 12.

¹⁷ Gissing, *New Grub Street: A Novel*, 1:17.

¹⁸ Lord Ewald, Edison’s friend, compares Alicia to Canova’s statue *Venus victrix* (1808), remarking, however, that the statue, “voilée de minérale et de silence,” is outside of thought, whereas Alicia thinks and speaks, but only in the most debased ways. Auguste Villiers de l’Isle-Adam, *L’Ève Future* (Paris: Charpentier, 1909), 64, <https://archive.org/details/lvefuture00villuoft>.

me, at a high price, these hitherto unseen marvels. This is why I say that Hadaly replaces *an* intelligence with Intelligence itself.¹⁹

Supplied with these high-quality and presumably male-authored words, Hadaly is able to respond well in conversation, not so much through the kinds of transformation rules that ELIZA uses as through a combinatorial theory of *all* speech, in what the fictional Edison calls, quote, “the great kaleidoscope of human words. Given the color and tone of a subject in the mind, any word can adapt itself to any sense whatsoever, in the eternal *just about* of existence and of human conversation.”²⁰ Anticipating the context-dependency of the most famous ELIZA script, DOCTOR, which posits the scenario of patient-centered therapy as the context within which ELIZA’s responses are legible, Villiers’s ideal love-object requires the context of being a female love-object, imagined as a reflection of the male partner’s desires, in order for language to make sense.²¹

Weizenbaum was, of course, adamant that ELIZA *was* context-dependent, pointing out the “psychological utility” of the therapy context; quote,

The speaker further defends his impression (which even in real life may be illusory) by attributing to his conversational partner all sorts of background knowledge, insights and reasoning ability. But ... these are the speaker's contribution to the conversation.²²

For Weizenbaum, this context was essential; as he later complained, many enthusiasts were too quick to assume that ELIZA constituted “a general solution to the problem of computer understanding of natural language,” when, he argued, no such general solution was possible.²³ That ELIZA was not only context-dependent but dependent on *this particular* context, not only a scenario of care but a specific form of therapy, patient-centered therapy, discloses how central reproductive labor has been to the understanding of language-production as combinatorial and automatable. This kind of word-work as reproductive labor is literally re-productive in the sense that it reflects expectations and, indeed, specific keywords, back to the interlocutor. Functioning as a form of care, this kind

¹⁹ “Voici les deux phonographes d’or, inclinés en angle vers le centre de la poitrine, et qui sont les deux poumons de Hadaly. Ils se passent l’un à l’autre les feuilles à tirer. Un seul ruban d’étain peut contenir sept heures de ses paroles. Celles-ci sont imaginées par les plus grands poètes, les plus subtils métaphysiciens et les romanciers les plus profonds du siècle, génies auxquels je me suis adressé—et qui m’ont livré, au poids du diamant ces merveilles à jamais inédites. C’est pourquoi je dis que Hadaly remplace *une* intelligence par l’Intelligence.” Villiers de L’Isle-Adam, *L’Ève Future*, 215.

²⁰ “En vérité, *tout, je vous assure, peut, absolument, répondre à tout*: c’est la grand kaléïdoscope des mots humains. Etant donnés la couleur et le ton d’un sujet dans l’esprit, n’importe quel vocable peut toujours s’y adapter en un sens quelconque, dans l’éternel à *peu près* de l’existence et des conversations humaines.” Villiers de L’Isle-Adam, *L’Ève Future*, 218.

²¹ Villiers de L’Isle-Adam, *L’Ève Future*, 219.

²² Weizenbaum, “ELIZA—A Computer Program for the Study of Natural Language Communication between Man and Machine,” 42.

²³ Joseph Weizenbaum, “Computer Power and Human Reason: From Judgment to Calculation,” in *The New Media Reader*, ed. Noah Wardrip-Fruin and Nick Montfort (Cambridge, Mass: MIT Press, 2003), 371.

of word-work shows why some kinds of *intellectual* labor are understood as the domain of primitives.

To return, then, to the question of ELIZA's relevance today, we might consider the ways that postindustrialism has centered reproductive labor and its exploitative conditions. Michael Hardt and Antonio Negri have argued that what they call "intellectual, immaterial, and communicative labor" has become hegemonic in the globalized economic order that they call "empire."²⁴ This grouping of "intellectual, immaterial, and communicative" is useful, but also obscures some necessary distinctions; as we have already seen, communicative labor is not necessarily understood as intellectual, especially when it takes the form of the care work that Hardt and Negri tend to somewhat misleadingly subsume under the label of "immaterial" labor.²⁵ We might think, for instance, of the semi-automated customer service scripts that make humans, often from the global south, sound like robots (if any of you have ever tried to use the Comcast customer service chat, you know what I mean), or of this eerily ELIZA-like health care app, Pager, which I saw advertised in the New York subway last year [SLIDE: PAGER]. If differences between the kind of intellectual labor we might associate with freelance writing or coding and the kind done by Hadaly with her golden phonographs have been eroded, it is only because the former have joined the automatable ranks of the latter. After all, sex work is the quintessentially automatable care work, as evidenced by a truly astounding history of fantasies of robot sex [SLIDE: LIZ LEMON].²⁶

What theorists such as Antonella Corsani have termed the "feminization of labor" means, in part, that workers even in fields that historically have not demanded affective labor now ask workers to bring the personality, zest for life, and emotional liberation that we are used to seeing primitives called upon to bring, often in the form of passion for the job or a performed desire to serve the customer, but sometimes in the form of personality or quirkiness itself, as in the case of YouTube stars and Twitter personalities.²⁷ As Robin James and others have suggested, the face of postindustrial labor is that of a woman who

²⁴ Michael Hardt and Antonio Negri, *Empire* (Cambridge, Mass: Harvard University Press, 2000), 29.

²⁵ Silvia Federici has strongly critiqued the characterization of this work as "immaterial" in *Revolution at Point Zero: Housework, Reproduction, and Feminist Struggle* (Oakland, Calif.: PM Press, 2012). Hardt and Negri acknowledge the embodied nature of this labor but remain attached to the term "immaterial labor." See Hardt and Negri, *Empire*, 30.

²⁶ To name a few recent ones: *Do Androids Dream of Electric Sheep?*, *Neuromancer*, *Dollhouse*, *Lars and the Real Girl*, *Her*, *Ex Machina*, *Westworld*.... Note that Ngai does distinguish between the comedic, because seemingly illegitimate, automations of the gimmick and those labor-saving devices whose comedic effects derive from an uncomfortable closeness with reality. In fact, Ngai makes a central example in her essay Helen DeWitt's novel *Lightning Rods*, in which female labor, "feminized" (i.e. casualized) labor, machines, and sex work converge as the same phenomenon. But I am not sure that this rather too literal example has the deflationary power that the gimmick does in the other examples that Ngai raises, for the simple reason that the "gimmick" of workplace sexual coercion is in fact (as Ngai acknowledges) a standard labor practice. Ngai, "Theory of the Gimmick," 497–505.

²⁷ Alan Liu, *The Laws of Cool: Knowledge Work and the Culture of Information* (Chicago: University of Chicago Press, 2004); Luc Boltanski and Eve Chiapello, *The New Spirit of Capitalism* (New York, NY: Verso, 2005); Corsani, "Beyond the Myth of Woman."

performs her resilience over and over again, repeatedly suffering and overcoming damage in order to embody a tireless hyperadaptivity.²⁸ This, too, is a temporal drama: the neoliberal worker is future-oriented, always pushing forward, while those whose damages she overcomes are framed as primitives. So if she encounters misogyny, for example, it is in the form of so-called “old-fashioned” sexism or of people with “backwards” cultures, often racialized provincials. This narrative scapegoats primitives while simultaneously working to occlude the kind of structural misogyny that cannot simply be overcome by leaning in. ELIZA’s automatable word-work brings into relief the continuity between the futurity of the ideal neoliberal worker and the primitivism on which it depends—the way that the role of the therapist can merge with the role of a spunky flower-seller. My point is not to bemoan the demeaning of formerly exalted professions, but rather to point out how the logic of automation depends upon and abjects primitivism at the same time.²⁹

To close, I’d like to think about a more recent, and famously disastrous, AI project, “Tay,” launched by Microsoft in March 2016 and shut down just sixteen hours later [SLIDE: TAY]. There are, of course, many successful bots; in his apology for the Tay incident, Microsoft Research Corporate Vice President Peter Lee cited their successful chatbot XiaoIce, on the Weibo platform [SLIDE: XIAOICE].³⁰ XiaoIce, another youthful, female-gendered bot, already does what Tay was meant to do: act as a friend and even confidante, essentially performing emotional labor. As lead engineer Yongdong Wang pitches it, XiaoIce “is always there for you.”³¹ Tay was likewise designed to mimic the written language of a teenaged woman on Twitter, with all the orthographic and social conventions specific to the medium, and in English. Like XiaoIce, or like Eliza Doolittle, Tay could learn from its interactions with other users. Within hours it had been trained to make racist and misogynist statements, deny the Holocaust, and call for genocide.³² Numerous commentators at the time noted that the lack of a filter for racist and sexist language was an obvious oversight, given the ubiquity of hate speech on the internet.³³ But

²⁸ Robin James, *Resilience & Melancholy: Pop Music, Feminism, Neoliberalism* (Aldershot, UK: Zero Books, 2015).

²⁹ I am thinking in particular of the closing gesture of Mark Fisher, “Suffering with a Smile,” *The Occupied Times*, June 23, 2013, <https://theoccupiedtimes.org/?p=11586>.

³⁰ Peter Lee, “Learning from Tay’s Introduction,” *The Official Microsoft Blog*, March 25, 2016, <http://blogs.microsoft.com/blog/2016/03/25/learning-tays-introduction/>.

³¹ Yongdong Wang, “Your Next New Best Friend Might Be a Robot,” *Nautilus*, February 4, 2016, <http://nautil.us/issue/33/attraction/your-next-new-best-friend-might-be-a-robot>. I think it’s telling that XiaoIce’s ability to respond in contrarian or oppositional ways is attributed to being “like a 17-year-old girl,” i.e. personality per se is imagined as teenaged and female.

³² Alex Kantrowitz, “Racist Twitter Bot Went Awry Due To ‘Coordinated Effort’ By Users, Says Microsoft,” *BuzzFeed*, accessed March 24, 2016, <http://www.buzzfeed.com/alexkantrowitz/microsoft-blames-chatbots-racist-outburst-on-coordinated-eff>.

³³ Ethan Jewett, “How Do You Release an Internet Learning Chatbot with Vulgarity Filters but Not Racism/Misogyny Filters?,” microblog, @esjewett, (March 25, 2016), <https://twitter.com/esjewett/status/713344290370363393>; Zeynep Tufekci, “Microsoft: ‘Tay’ happened Because We Didn’t Know There Were People on the Internet. <http://blogs.microsoft.com/Blog/2016/03/25/Learning-Tays-Introduction/> ... Pic.twitter.com/JimEuJAvH6,” microblog, @zeynep, (March 25, 2016), <https://twitter.com/zeynep/status/713462475094695937>.

perhaps more obviously, hate speech on Twitter is disproportionately directed toward users perceived as female or belonging to a racial, religious, or ethnic minority; this is a known and widely reported problem.³⁴ Lee's apology statement framed this as the result of a "specific vulnerability," but it isn't clear what that vulnerability was apart from the basic fact of being an AI—that is, capable of learning from interaction. Trolls on Twitter did to Tay what they usually cannot do to the real women that they so often target: they made it appear to agree with them, even if the end result—Tay leaving Twitter—was the same. Hyperadaptable, Tay performed too well what is demanded of the resilient female worker, not only absorbing abuse in great quantity but taking it into its "personality" and at times reflecting it back. Fictions of female labor have long shaped our sense of what kind of work is done with words; fifty years on from ELIZA, we can more clearly see how. ■

³⁴ Jim Rutenberg, "On Twitter, Hate Speech Bounded Only by a Character Limit," *The New York Times*, October 2, 2016, http://www.nytimes.com/2016/10/03/business/media/on-twitter-hate-speech-bounded-only-by-a-character-limit.html?_r=0; Charlie Warzel, "90% Of The People Who Took BuzzFeed News' Survey Say Twitter Didn't Do Anything When They Reported Abuse," *BuzzFeed*, September 22, 2016, https://www.buzzfeed.com/charliewarzel/90-of-the-people-who-took-buzzfeed-news-survey-say-twitter-d?utm_term=.uu5OVokL6#.ibJKybRLg.

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