

ARTICLE



Alexa, Alert Me When the Revolution Comes: Gender, Affect, and Labor in the Age of Home-Based Artificial Intelligence

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ABSTRACT

The fantasy of automation is one of liberation from alienating tasks. Today, domestic artificial intelligence (AI) enacts this dream of frictionlessly offloading monotony. This article deploys theories of Marxist feminism, affective labor to interrogate domestic AI's unprecedented promise of absorbing forms of labor we hardly acknowledged that we did. While these devices make the reproductive labor of the household legible *as labor*, we interrogate their quasi-emancipatory promise. We argue that devices such as Amazon's Alexa or Google Home elide and reproduce the gendered and racialized dimensions of domestic labor, streamline this labor for capture by capital, and heighten the very affective dynamics they promise to ameliorate. Only critical political theories of work can illuminate the unfulfilled transformations and ongoing dominations of gender, race, and affect that saturate labor with domestic AI – expressed, we contend, by re-articulating the framework of the “social factory” to that of the “social server.”

Introduction: Alexa, Can You Pass the Turing Test?¹

Among the available uses for Amazon's Alexa product, a common theme emerges of commanding her – and Alexa is referred to as “her” – to manage a variety of domestic labor tasks. Frequent tasks are to have her suggest recipes, manage your personal schedule, keep track of to-do and shopping lists, change the light, heat, or air conditioning in your smart home, order delivery food, set a timer or alarm; request an Uber pick-up, and, of course, seamlessly order anything you could ever want from Amazon. You can also change her name or tell her to quiet down. A gendered interplay between domesticity and control – over one's life, one's home, one's efficiency, and over Alexa herself – runs through discourses about Alexa and similar devices such as Google Home/Google Assistant, collectively categorized under the rubric of domestic or home-based artificial intelligence (AI).

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¹Engadget's list of “tips and tricks” for interacting with Alexa suggests asking her “Alexa, can you pass the Turing test?” Libby Plummer, “The Best Commands for Amazon Echo and Alexa,” *Engadget* (April 25, 2017), available online at: <https://www.engadget.com/2017/04/25/amazon-echo-alexa-tips-tricks-guide-uk/>. The Turing Test is a thought experiment articulated by Alan Turing in which a “judge” interacts in a text-and-screen conversation with one human and one artificial intelligence (AI) unit. If the judge cannot tell which interlocutor is human and which is AI, the AI unit is said to have “passed” the test. On the Turing Test, see Graham Oppy and David Dowe, “The Turing Test,” *Stanford Encyclopedia of Philosophy* (Spring 2018), available online at: <https://plato.stanford.edu/archives/spr2018/entries/turing-test/>.

The ability to ricochet the politically-charged affective and cognitive currents of a household through a third party has centered public attention on its curious form of labor. Within 2018 alone, home-based AI – its potential, pitfalls, affective functions, and multi-valence – has been a frequent media and cultural topic. Discussion of Alexa and parenting expresses concern that the abrupt method of addressing the device normalizes rudeness for kids.² A *New York Times* “Modern Love” column describes the satisfaction of seeing a husband face the very irritation he had imposed on his wife, of too-selective hearing, when the couple’s Alexa did not respond to his commands.³ In the “Flaw in the Death Star” episode of the television show *Billions*, a tech mogul’s AI system becomes a refractor of the intimacy and desire between two human characters, as one character notices a glowing wall-mounted device and says, “we’re not alone”; their prospective partner replies, “she’s discreet” and then, addressing the device, says, “Eve, shut down.”⁴ One of the perks of the imagined afterlife in the television show *The Good Place* is Janet, a voice-activated artificial intelligence system in the form of a humanoid robot who, like Alexa, can be summoned by voice command, immediately provide any requested object, and will cheerfully answer any question. In April 2018, Amazon introduced Alexa Blueprints, a set of skills that each Alexa owner can customize to their device, including trivia about household members, favorite motivational quotes, and family jokes that Alexa can recite on command to make everyone laugh. Simulated, or at least digitally-prompted, feelings of intimacy are a primary benefit of the Blueprints: “[Alexa] can say things that have personal meaning to you, and that can help make your day smoother or more enjoyable.”⁵ The intrigue of Alexa and the like is the ability to surface the work of managing both data and emotions, that is, both the logistical and affective negotiations within a home.

This article critically examines domestic AI’s potentialities, knitting together affect theory, trajectories of Marxist feminism, and scholarship on the race-gendering of domestic labor in order to critique and politicize the circuits of labor reproduced and produced anew by Alexa and similar devices. As an increasingly visible modality of labor, domestic artificial intelligence technology further instantiates the social factory interrogated by autonomist Marxists and Marxist feminism,⁶ and in fact expands our understanding of reproductive labor into what this article refers to as the computational domestic-management labor of the “social server.” As Kylie Jarrett notes, there is little to no analysis of gender, domestic work, and social reproduction in prominent critical theories of digital technologies.⁷ We follow Jarrett’s imperative to analyze digital labor

²Jake Swearingen, “How Should We Talk to Alexa Around Our Kid?” *New York Magazine: Select All* (May 4, 2018), available online at: <http://nymag.com/selectall/2018/05/how-should-we-talk-to-alexa-around-our-kid.html>.

³Caren Chesler, “Alexa? Please Ignore My Husband,” *The New York Times* (May 4, 2018), available online at: <https://www.nytimes.com/2018/05/04/style/modern-love-alexa-please-ignore-my-husband.html>.

⁴Notably, the fictional AI device in the show, much like Alexa, has a name conventionally understood to be that of a human woman.

⁵Christina Bonnington, “Amazon Gave Alexa a Game-Changing New Ability,” *Slate Magazine* (April 21, 2018), available online at: <https://slate.com/technology/2018/04/alexa-blueprints-amazon-echos-custom-skills-should-make-assistant-more-useful.html>.

⁶Autonomist Marxism is a radical Marxist movement emerging in Italy in the 1950s through 1970s emphasizing an anti-authoritarian and revolutionary workerist politics. For an overview of the theory and praxis of the movement, see David P. Palazzo, “The ‘Social Factory’ In Postwar Italian Radical Thought From Operaismo To Autonomia,” (New York, NY: The Graduate Center, CUNY, PhD diss, 2014). While we discuss the concept of the social factory more below, we note here that it can be conceptualized as how, across all of society, “those living in advanced capitalist economies were subjected to capital’s unceasing pressure to develop individual and collective capacities and focus ones efforts and energies towards the needs and goal of capital accumulation,” in which “work life has increased, with the amount of time spent on such items increasingly penetrating traditionally ‘private’ realms of being.” *Ibid.*, 1.

⁷Kylie Jarrett, *Feminism, Labour and Digital Media: The Digital Housewife* (New York, NY: Routledge, 2015), Chap. 2.

through Marxist feminism, and demonstrate that its framework is essential to grappling with the forces of affect, gender, racialization, capital, machine, cognition, and more that concatenate in domestic AI. We recommend a multifaceted reading of Alexa as labor-performing and value-producing, a performer of reproductive labor *par excellence*, which (who?) reinscribes our own participation in capitalism even as it renders visible the previously marginalized forms of labor required to do so. These tensions constitute the central motivation for this article. Home-based AI, as the logical conclusion of a conjunction between digital and affective labor that Jarrett theorizes through the figure of the “digital housewife,”⁸ poses questions and paradoxes of the call-and-response affective presence in the performance of household work; the subjectivizing and alienating effects of the automation of domestic labor; rearranging of the human-machine assemblage; further isolation of domesticity; and maybe even the potential liberatory opportunities of automation. Especially as domestic AI devices increasingly saturate homes,⁹ political theory and critical theory must grapple with these machinic and affective questions.

In response to these problematics, we argue that domestic AI partially fulfills goals of Marxist feminism to render reproductive labor visible, and in so doing transform the relationship between capital, labor, and the individual. And yet, recognition of cognitive and affective labor in the form of a friendly robot is not necessarily emancipatory. Far from compensating housework with wages, systems like Alexa replicate existing race-gendered economies, in multiple senses of the term. That is, we argue that even with its potential rerouting of domestic work, Alexa and her ilk cannot move us closer to the transformation of work envisioned by the Wages for Housework analysis and movement that marks a central analytical framework for this article.¹⁰ Absent a critical politics of domestic work, the household more fully becomes part of the exploitative social factory, rather than transforming the political, economic, social, gender, racial, and affective relations of the factory in its various guises.

The first section of the article briefly examines feminist accounts of domestic labor in order to generate the theoretical frameworks necessary for grappling with domestic AI. Next, we initiate our explicit analysis and politicization of domestic AI, by interrogating the emotional and affective labor that constitutes and is constituted by these devices in order to argue that they have the potential to reinscribe modes of domination –

⁸Ibid.

⁹As of the end of 2018, Amazon says that one-hundred million devices that include Alexa have been sold. Dieter Bohn, “Amazon Says 100 Million Alexa Devices Have Been Sold – What’s Next?” *The Verge* (January 4, 2019), available online at: <https://www.theverge.com/2019/1/4/18168565/amazon-alexa-devices-how-many-sold-number-100-million-dave-limp>. Meanwhile, a market research firm estimates that at the end of 2017, fourteen million Google Home devices have been installed in the United States. “Google Home Starts to Catch Up,” *Consumer Intelligence Research Partners* (February 12, 2018), available online at: <https://www.cirplc.com/blog/2018/2/12/google-home-starts-to-catch-up>.

¹⁰We discuss Wages for Housework more fully below, but here we note that it is a multinational Marxist feminist movement in the 1960s and 1970s that is politically connected to the Italian Autonomist movement and to different strands of American feminists; it is also part of the “domestic labor” debate among Marxist feminists analyzing the political economy of “women’s work” within the household. As will become clear in the article, the demand for wages for housework is only one element of the broader political and theoretical analytic it provides. Central texts in the Wages for Housework tradition include Mariarosa Dalla Costa and Selma James, *The Power of Women and the Subversion of the Community* (Bristol, UK: Falling Wall Press, 1972); Silvia Federici, *Wages Against Housework* (Bristol, UK: Falling Wall Press, 1975); Nicole Cox and Silvia Federici, *Counter-Planning from the Kitchen: Wages for Housework, A Perspective on Capital and the Left* (London, UK: Falling Wall Press, 1975). For a more recent appraisal and reconstruction of Wages for Housework, see Kathi Weeks, *The Problem with Work: Feminism, Marxism, Antiwork Politics, and Postwork Imaginaries* (Durham, NC: Duke University Press, 2011), Chap. 3.

affective and otherwise – over labor and subjectivities.¹¹ The subsequent section shifts to focus to the function of domestic AI's absorption of the computational labor underwriting the reproduction of household and self.¹² Here, domestic AI further instantiates capitalist formations and a gendered division of labor, even as it provides some cognitive-affective release. The conclusion argues for politicizing domestic AI through the figure of what we call the “social server.”

Alexa, What Is the Social Factory? Marxist Feminist Approaches to Domestic Labor

Karl Marx provides an important touchstone and framework for thinking through the questions Alexa raises for capitalism and labor. Marx's so-called “Fragment on Machines” from the *Grundrisse* offers a liberatory version of the development of machines as “organs of the human brain, created by the human hand” that can enable “the process of social life itself [to] come under the control of the general intellect and [be] transformed in accordance with it.”¹³ Domestic AI pushes the question of human-machine assemblage to the fore. Ann Cvetkovich argues that Marx's analysis, rather than being entirely “dependent on essentialist or humanist distinctions” between humans and machines, “can also be said to denaturalize such distinctions” such that “the interactions between humans and objects, between constant and variable capital, and between worker and commodity produce a transmutation” in both machine and human.¹⁴ However, Marx's analyses “sustain” a “relative silence” about reproductive labor, social reproduction, the home, and the family.¹⁵

Where Marx provides a way to interrogate the hybridization of human and machine in the industrial factory, we work to think through that process within the social factory, a concept initially developed by Italian autonomist Mario Tronti, and then powerfully expanded upon by Marxist autonomist feminists and the Wages for Housework movement.

¹¹We generally use “affect” to describe a pre-subjective material intensity or force, and “emotion” to denote the subjective recognition and meaning-making of an intensity, as in Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham, NC: Duke University Press, 2002). However, there is danger in too sharply dividing affect and emotion. While we distinguish between affect and emotion in this article, we do so aware of their constant feedback into each other. On the concept of affective labor, see Maurizio Lazzarato, “Immaterial Labor,” in Paolo Virno and Michael Hardt (eds), *Radical Thought in Italy: A Potential Politics* (Minneapolis, MN: University of Minnesota Press, 1996), pp. 133–47; Antonio Negri, “Value and Affect,” Trans. Michael Hardt, *Boundary 2* 26:2 (1999), pp. 77–88; Michael Hardt, “Affective Labor,” *Boundary 2* 26:2 (1999), pp. 89–100; Kathi Weeks, “Life Within and Against Work: Affective Labor, Feminist Critique, and Post-Fordist Politics,” *Ephemera: Theory & Politics in Organization* 7:1 (2007), pp. 233–49; Shiloh Whitney, “Affective Indigestion: Lorde, Fanon, and Gutierrez-Rodriguez on Race and Affective Labor,” *The Journal of Speculative Philosophy* 30:3 (2016), pp. 278–91; Shiloh Whitney, “Byproductive Labor: A Feminist Theory of Affective Labor Beyond the Productive–Reproductive Distinction,” *Philosophy & Social Criticism* 44:6 (2018), pp. 637–60.

¹²For Silvia Federici, reproductive labor conceptualizes “the complex of activities and relations by which our life and labor are daily reconstituted,” much of it done by women in the so-called private sphere. Silvia Federici, “Introduction,” in *Revolution at Point Zero: Housework, Reproduction, and Feminist Struggle* (Oakland, CA: PM Press, 2012), p. 5. It can be distinguished from productive labor that produces commodities and is expressed in the wage relation, although a crucial intervention of Marxist feminists was to insist that reproductive labor is necessary for the production of labor-power, workers, subjectivities, and so on, and is thus central to capitalism. However, the precise nature of that relationship is debated among Marxist feminists. For an overview of this “domestic labor debate,” see Lise Vogel, *Marxism and the Oppression of Women: Toward a Unitary Theory* (Chicago, IL: Haymarket Books, 2013), pp. 17–25.

¹³Karl Marx, *Grundrisse*, Trans. Martin Nicolaus (New York, NY: Penguin Books, 1973), p. 706.

¹⁴Ann Cvetkovich, *Mixed Feelings: Feminism, Mass Culture, and Victorian Sensationalism* (New Brunswick, NJ: Rutgers University Press, 1992), pp. 185–86.

¹⁵*Ibid.*, 185.

This compelling development of the concept by Wages for Housework marks one reason we emphasize this particular trajectory of Marxist feminism. As Kathi Weeks contends, Wages for Housework is particularly vital among varied Marxist feminist perspectives of the domestic labor debate within the broader movement for analyzing “the interdependencies between two fields of social cooperation, the household and the waged labor economy,” instead of “isolat[ing] capitalist production in the times, spaces, and relations of waged labor” alone.¹⁶ We engage primarily with Wages for Housework not only because it compellingly theorizes these connections, but also because we find it especially effective at the dual movement of recognizing domestic work as work and as central to capitalism while also insisting upon a radical transformation of the structures and ideologies of work, social reproduction, and gender. Moreover, both in its own terms and in its conversations with Italian autonomist Marxism, Wages for Housework provides an important precursor for the theorization of affective labor, an important concept for this article. While Wages for Housework is not the only movement within (or outside) of Marxist feminism providing these analyses, its threading together of these concepts and critiques renders it a uniquely important frame for us as we analyze the human/machine hybridization in the home effected by domestic AI. This enables us to rethink various theories of social reproduction and domestic labor as well as Marx on machines, and also to interrogate the relations that are (re)constituted by home-based AI.

As numerous scholars have demonstrated, domestic labor and social reproduction – particularly in their gendered and racialized dynamics – are under-theorized, obscured, or problematically theorized by Marx and many Marxists.¹⁷ Marxist feminists pose challenges that focus on the erasure of women and domestic labor from Marx’s analysis, working to articulate conditions of exploitation in settings where laborers did not produce tangible objects with exchange value for circulation on the market, but rather the basic set of needs that make possible living labor. The concept of “reproduction” placed women’s domestic labor in the Marxist analysis of the production cycle as central to industrial capitalism. Reproductive labor, even if not producing an exchange-able commodity, does sustain the worker’s baseline capacity to produce: the work of feeding, clothing, and tending to illness are all vital to capitalism’s functionality and a precondition of industrial productivity. Domestic labor is socially necessary work upon which capitalism rests, even as it has been taken for granted in analyses of capitalist production.¹⁸

One trajectory of Marxist feminists, the transnational Wages for Housework movement, sought to portray “the home and housework as the foundations of the factory system,”¹⁹ in part through its reworking of the concept of the “social factory.” Instead of isolating capitalist production solely with the territory of wage labor, these scholar-activists analyzed the social factory not as an abstract phase of capitalism, but rather an articulation of the home as a center of labor power and its reproduction, and as an especially important node or site within the social factory. The reproduction of labor capacity is rooted in keeping the body alive and healthy. Preparing for work requires

¹⁶Weeks, *Problem With Work*, pp. 120–21.

¹⁷Heidi I. Hartmann, “The Unhappy Marriage of Marxism and Feminism: Towards a More Progressive Union,” *Capital & Class* 3 (1979), pp. 1–33; Gloria Joseph, “The Incompatible Menage A Trois: Marxism, Feminism, and Racism,” in Lydia Sargent (ed.), *Women and Revolution: A Discussion of the Unhappy Marriage of Marxism and Feminism* (Boston, MA: South End Press, 1981), pp. 91–107; Vogel, *Marxism and the Oppression of Women*.

¹⁸Vogel, *Marxism and the Oppression of Women*.

¹⁹Federici, “Introduction,” pp. 6–7.

restoring muscles, nerves, bones, and brains.²⁰ Work, across the social factory, entails repetitive exertion. Building from the principle that no space is free of capitalist relations, *Wages for Housework* extended a treatment of the omnipresence of labor to capitalism to its logical Marxist conclusion, that of a wage struggle: “we have always belonged to capital every moment of our lives and it is time that we make capital pay for every moment of it. In class terms this is to demand a wage for every moment we live at the service of capital.”²¹ The campaign made the wage primary because for workers, receiving a wage is the mechanism by which they become legible in capitalist relations, and the movement sought to make visible the obscured necessity of domestic labor and the extension of the working day it involves.²² They make a double move, insisting that domestic work is both “nothing to revere” and also should be waged work given its essential role in social reproduction.²³ More recently, Jarrett works in a Marxist feminist analytic to propose the “digital housewife” as a rhetorical figure and analytical frame for the parallels between the consumer labor one does online and the unpaid work of the domestic sphere, in terms of the way they both involve cognitive and affective labor that sustains both economic activity and interpersonal relationships.²⁴

Much Marxist feminism presumes an explicitly race-less, but implicitly figured as white, woman performing reproductive labor. Feminist scholarship by women of color problematizes feminist theories of work and labor that overlook or render invisible the differential racialized complexities of domestic labor. Gloria Joseph contends that Marxist feminism is usually “race-blind,” in a way that “do[es] a gross injustice to Black women.”²⁵ When “the reality of the oppression of race relations within the woman question is denied,” they “commit a similar, parallel error” to the one they accuse Marxism of when it “focuses on the class question and shortchanges the woman question.”²⁶ Accounts of labor by and about women of color provide a clearer understanding of the new forms of laboring subjects shaped by domestic AI, particularly through attention to relations of domination and invisibility, and to the replicating ability to off-load unpleasant tasks onto a lesser class of laborer. Evelyn Nakano Glenn points out how this happens in the transition between the domestic and institutional realms, where subordinate racial classes “do the dirty work,” while those laborers and their work are simultaneously rendered increasingly invisible.²⁷ The simultaneity of presence and absence, of familiarity and domination, are important dynamics in specifically digitized housewifery, as their reproducibility as domestic relations expands to include not just laboring people but laboring devices.

We build on these literatures throughout the rest of the article in order to demonstrate how domestic AI functions as a literal digital housewife that performs and remixes currents of labor and affect. The key concern remains whether digital housewifery can engender social struggle, or whether AI represents another link in the chain of new domestic subalterns. We

²⁰Cox and Federici, *Counter-Planning*, p. 9.

²¹*Ibid.*, 12.

²²Federici, *Wages Against Housework*.

²³Weeks, *The Problem with Work*, p. 123. Given our concern both to recognize Alexa’s making-more-visible of elements of domestic labor even it is excessively problematic and nothing to revere, this double move of *Wages for Housework* makes the approach uniquely important for us.

²⁴Jarrett, *Feminism, Labour and Digital Media*, pp. 1–25.

²⁵Joseph, “Incompatible Menage A Trois,” p. 93.

²⁶*Ibid.*, 95.

²⁷Evelyn Nakano Glenn, “From Servitude to Service Work: Historical Continuities in the Racial Division of Paid Reproductive Labor,” *Signs* 18:1 (1992): pp. 1–43.

will claim that, while domestic AI partially fulfills Wages for Housework's objective of making visible the necessity of ongoing reproductive domestic labor and creating possible avenues of transformation, legacies of domination saturate the uptake of domestic AI, further enmeshing its users in gendered and racialized capitalist circuits rather than realizing its radical potential.

Alexa, How Do I Feel? Domestic AI and the Circulation of Affect

If, in the preceding section, the social factory and social reproduction constitute one vector of approach to domestic AI, in this section we turn to examine what precisely domestic AI produces and reproduces in the home as the social factory becomes computerized, particularly in the emotional and affective registers, and in the way these devices produce subjectivities. Arlie Hochschild's classic study of gender and emotional labor, and especially her deployment of the figure of the robot, helps set the terms for an analysis of domestic AI. She contends that the "transmutation" of private feelings into a component of economic circulations makes emotional labor a process of the instrumentalization and alienation of emotion.²⁸ This leads her to invoke robots: in her case study on flight attendants, Hochschild turns to the robot as a foil for human feeling and as a way for critiquing the demands of emotional labor in late capitalism. Workers who are expected to perform emotion but do not authentically feel those emotions "are said to 'go into robot,'" as they "retreat to surface acting" and "pretend to be showing feeling."²⁹

Hochschild thus constructs a sharp human/machine divide, constructing humanness as having genuine feeling and robotization as commodified, antihuman performance of feeling. Domestic AI, however, scrambles some of the assumptions undergirding Hochschild's project. Domestic AI takes on a more humanlike demeanor than the robots Hochschild imagines. Alexa, for instance, is given a (gendered) human name, converses with humans in their language, and may soon be able to recognize and respond to the emotion in one's voice.³⁰ The flattening of humanness that Hochschild identifies in the robotization that emotional labor induces may not capture the reconfiguration of human and machine subjectivities alike that domestic AI prompts. Home-based AI extends the gendered commodification of feeling that Hochschild identifies, but it also brings about the reverse, a humanization of what a robot is or does. Hochschild sees emotional labor in the public sphere as an attempt by circuits of capitalism to apply the warmth, comfort, hospitality, and intimacy expected of women in the home to customers in the public sphere.³¹ Home-based AI, though, attempts to provide that same kind of politeness and hospitality to the person doing domestic work in the home itself, for instance in Alexa's apologetic "I'm sorry, I don't have an answer to X" response when asked a question that her programming cannot resolve.

Further, what happens when the robot itself digests, absorbs, retransmits, and provides emotional and affective response, in a kind of simulacra of companionship? In the Afterword from the latest edition of *The Managed Heart*, Hochschild observes that the "emotional proletariat" has in part been automated away through ATMs, buying tickets online, using

²⁸Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkeley, CA: University of California Press, 2012), p. 19.

²⁹*Ibid.*, 129.

³⁰Will Knight, "Amazon Working on Making Alexa Recognize Your Emotions," *MIT Technology Review* (June 3, 2016), available online at: <https://www.technologyreview.com/s/601654/amazon-working-on-making-alexa-recognize-your-emotions/>.

³¹Hochschild, *Managed Heart*, Chap. 6.

automatic toll booths, and so on, at the same time that a “marketized private life” has emerged to blur the “feeling rules” of market and home.³² Domestic AI functions in this marketized private sphere in the way that it connects domestic labor to globalized supply chains such as Amazon, and to hyper-local services like using an app to order food delivery from the restaurant four blocks away. It also builds new “feeling rules” by providing a sort of emotional companionship to the human. These feelings rules, however, disrupt the binary that Hochschild sets up between robots/automation on one side and human/emotion on the other. Domestic AI automates at the same time that it engages in emotional labor, and thus muddles Hochschild’s paradigmatic framework for grappling with emotional labor and the home. Ultimately, while Hochschild helps us understand home-based AI’s commodification of feeling and entanglement in a gendered and marketized private sphere, her framework cannot grasp the emotionality and affectivity of Alexa itself.

Scholarship on affective labor, however, can generate conceptual resources for grappling with the embodied connections and circuits domestic AI forges between itself and its users. Shiloh Whitney critiques Hochschild’s account of emotional labor for its understanding of the work as only ever being authentic or inauthentic or as not feeding back into the worker’s own affective life. For Whitney, affective labor “is not describable in terms of the distinction between authenticity and inauthenticity, true and false feelings” because it impacts “the feelings of the worker him- or herself” in the way affect functions as “an amplifying feedback loop or circulation” that “alters the ‘inner reality’” of the worker and itself produces the “bodily attitudes and action” of the emotional laborer.³³ That is, affective labor is not only a robotic (in Hochschild’s sense) performance of a subject. Rather, the subject generating and transmitting affect is herself changed by the feedback of that transmission, being reshaped by its affective charge. Domestic AI only further blurs that boundary.

Whitney theorizes affective *transmission* and *indigestion* as an alternative approach to grappling with the complexities of the circulation of affect and emotion swirling around domestic AI. She builds on Encarnacion Gutiérrez-Rodríguez’s study of the affective labor of migrant domestic workers in order to offer a less bounded, more multidirectional conceptualization of affect and labor.³⁴ Whitney’s account emphasizes the “metabolization” of affects, the way they are “absorbed and expelled” in a process of “affective nourishment and affective release,” focusing on racialized domestic laborers, because these workers experience such metabolization of affect.³⁵ These workers illustrate Whitney’s conceptualization and also exemplify how the labor of affective transmission can be oppressive, as she argues that migrant women of color are in effect demanded to provide affective rejuvenation to the empty, cold space of elite white households through the transmission of cheerful affect; they are also expected to take on, relieve, and comfort their employer’s stress, anxiety, depression, and anger – the affective wastes. Whitney’s work thus emphasizes the way that affect transmits between bodies without a simple beginning or end, instead being metabolized and circulated between bodies, creating affective byproducts to be absorbed in the process.

³²Ibid., 203–04.

³³Whitney, “Affective Indigestion,” p. 282. More recently, Whitney has developed this into a theorization of “byproductive labor.” See Whitney, “Byproductive Labor.”

³⁴Encarnacion Gutiérrez-Rodríguez, *Migration, Domestic Work and Affect: A Decolonial Approach on Value and the Feminization of Labor* (New York, NY: Routledge, 2010).

³⁵Whitney, “Affective Indigestion,” p. 285.

These circulations of affect typify the experience of domestic workers, whose perceived value to the white, bourgeois household is rooted in their ability to be available but unintrusive, absorbing the physical and affective “dirt” of a home in such a way that it vanishes from the employers’ sight and concern. According to David Katzman:

one peculiar and most degrading aspect of domestic service was the requisite of invisibility. The ideal servant as servant. . . would be invisible and silent, responsive to demands but deaf to gossip, household chatter, and conflicts, attentive to the needs of mistress and master but blind to their faults.³⁶

Such is the fantasy of one’s relationship with a domestic AI device: it would be responsive without unbidden engagements, retaining only those directives allowing it to anticipate and perform the desired tasks of its master. Where, historically, the invisible absorbers of affect have most frequently been human women of color, domestic AI promises to perform something like this affective metabolization, particularly in the way it provides a simulacrum of companionship. Can we understand taking on the offloaded affective byproducts of the human user to be one use of domestic AI? Can a human discharge negative affects on to Alexa, and have her/its cheerfulness provide me an affective boost in return? Amazon has been undergoing product research and development to train Alexa to “recognize the emotional tenor of [the user’s] voice,” and perhaps even “hear the irritation in [one’s] voice,” when she misunderstands a command, following this misrecognition up by “offer[ing] an apology.”³⁷ Indeed, in Fall 2018, Amazon was granted a patent on its emotional recognition – and sickness-detection – programming for Alexa, with the expectation it will be incorporated into Alexa devices.³⁸ Such developments equip Alexa to perform an affective waste management of the kind Whitney identifies: the human user transmits some negative affective byproduct to Alexa, who/which absorbs those negative affects, transmitting back positive soothing affect that defuses the negative charge.

On the one hand, if rejuvenating absorption of affective transmission was indeed possible, it offers a glimpse of potential for lessening the affective demands on hired domestic workers of color, who experience a form of “affective injustice” in their work.³⁹ If an elite white family offloads its affective waste onto Alexa rather than an underpaid, overworked, affectively overloaded worker of color, one could argue that this effects an overall beneficial adjustment in patterns of affective labor and circulation in the home.⁴⁰ That is, once we understand the prospective transmissions and feedback between human and AI machine, we see the potential reconfigurations of the affective circulation of the household that become possible,

³⁶David Katzman, *Seven Days a Week: Women and Domestic Service in Industrializing America* (Oxford, UK: Oxford University Press, 1978), p. 108.

³⁷Knight, “Amazon Working.”

³⁸Peter Sarnoff, “A New Amazon Patent Reveals Alexa Could Become Emotionally Intelligent,” *Business Insider* (October 17, 2018), available online at: <https://www.businessinsider.com/amazon-patent-alexa-emotional-intelligence-2018-10>. This raises the possibility of being advertised to on the basis of Alexa’s understanding of the user’s emotional and affective state. See Sidney Fussell, “Alexa Wants to Know How You’re Feeling Today,” *The Atlantic* (October 12, 2018), available online at: <https://www.theatlantic.com/technology/archive/2018/10/alexa-emotion-detection-ai-surveillance/572884/>.

³⁹Whitney, “Affective Indigestion.”

⁴⁰The ethical questions of offloading negative affects onto domestic AI, and thus the very capacious questions about sentience and feeling this raises, are beyond the scope of this article. Likewise, connecting Whitney’s notions of affective feedback to an analysis of processes of cybernetics and machine-learning themselves could be very generative, perhaps also threaded through Eve Kosofsky Sedgwick and Adam Frank’s reading of Silvan Tompkins, cybernetics, and affect. See Sedgwick and Frank, “Shame in the Cybernetic Fold: Reading Silvan Tompkins,” in Eve Kosofsky Sedgwick (ed.), *Touching Feeling: Affect, Pedagogy, Performativity* (Durham, NC: Duke University Press, 2003), pp. 93–122.

rather than only the negative account of robotization and emotional labor that Hochschild develops.

On the other hand, given the historically racialized roots of domestic labor, if domestic AI was primarily used in white homes, and/or if interaction with and management of domestic AI became an additional task for hired domestic workers of color, then its potentiality to substantively reconfigure the circuits of domestic reproductive labor is drastically curtailed. Indeed, in these scenarios the technology could exacerbate prevailing modes of racialized and classed domination. Domestic AI systems can replicate relations of domination that take place within bourgeois households that employ domestic workers, relations prefigured by the roles of women of color in domestic labor that have been combining the manual labor of the household factory with affective metabolization. The ability to discharge frustration onto and exercise power over another entity – one less-than-fully-human, whether due to race or to machine-ness – are among the dangerous potentialities of employing domestic help, tendencies that can be reinforced by Alexa’s affective resilience. One parent expressed concern to *New York Magazine*:

I realized how much I would yell at Alexa when I would get angry ... For a while, whenever I wanted to listen to WNYC, I got Wu-Tang Clan, which is not what I wanted at seven in the morning. So then I’d be frustrated, and I’ll yell ‘No!’ because you generally have to give Alexa very strong direction.⁴¹

The “have to give strong direction” can be read to echo ways white families have spoken to the women of color they employ, assuming them to be incapable of subtlety or unresponsive to gentleness. It may be the treatment of women of color as uncomprehending, less-than-human functionaries that trained white families to adapt to robots in their home.⁴² The writer went on to express: “what I worry about more is when we talk to the Echo, there’s this sort of master-servant relationship.”⁴³

Master-servant relationships with domestic AI are racially coded given the historical racialization of domestic labor itself. In her ethnography, Mary Romero concludes that “racial, class and gender stratification so typifies domestic service that social expectations may relegate all lower-class women of color to the status of domestic.”⁴⁴ Reproductive labor can be performed in the same space, be it a household or a business, with varying degrees of visibility depending on the racialized roles being performed.⁴⁵ Mignon Duffy distinguishes

⁴¹Swearingen, “How Should We Talk to Alexa?”

⁴²As feminist philosopher Robin James put it in a Twitter thread, we are “entirely comfortable interfacing with non-humans” in the way people speak to Alexa devices, asking “How is Alexa different than ‘the help?’” *Twitter* (February 13, 2019), available online at: <https://twitter.com/doctaj/status/1095661017911214080>. Processes of subordination through domestic AI can be exacerbated by the way that artificial intelligence based in machine learning processes “learns,” so to speak, racial and gender biases from the human society constructing the technological processes. Aylin Caliskan, Joanna J. Bryson, and Arvind Narayanan, “Semantics Derived Automatically from Language Corpora Contain Human-like Biases,” *Science* 356:6334 (2017), pp. 183–86.

⁴³Swearingen, “How Should We Talk to Alexa Around Our Kid?” Queer theorist Jack Halberstam has suggested that in our current capitalist imaginary, domestic AI facilitates a depoliticizing mastery: “[w]e live in a world where instead of trying to replace the masters who exploit us, we seek to become them in small and meaningless ways,” and devices like Alexa and Google Home “give us the illusion that we too have personal assistants, better known as servants” [“Vertiginous Capital, Or, The Master’s Toolkit,” *Bully Bloggers* (July 2, 2018), available online at: <https://bullybloggers.wordpress.com/2018/07/02/vertiginous-capital-or-the-masters-toolkit-by-jack-halberstam/>].

⁴⁴Mary Romero, *Maid in the USA* (New York, NY: Routledge, 2002), p. 101.

⁴⁵This hierarchy is so intractable that it has been exported to institutional sources of reproductive labor (for instance, businesses that provide food, laundry, cleaning services, and the like). Nakano Glenn calls this “back room” work, as opposed to more relational and public work, such as the difference between dishwashers and hosts or hostesses at restaurants. See “Glenn, From Servitude to Service.”

between these forms of reproductive labor, divided along racial lines, as “nurturant” and “non-nurturant,” to indicate the public, relational, and interactive components of reproductive labor performed by white workers.⁴⁶ This simultaneity and race-gender oscillation is key to capturing the slippery qualities of domestic AI as a new enactment of domestic relations, including both domination and familiarity. A device like Alexa possesses nurturant qualities – unthreatening emotional solicitousness, a deferential tone, a companionability that soothes (all notwithstanding its roots in algorithmic patterns). Alexa also possesses the non-nurturant qualities of immediate responsiveness and a resting state of silent efficiency. Its ideal function is to speak only when spoken to. When it fails to do so, “strong direction” is an acceptable, perhaps even necessary, response. In this way, Alexa can be a white “nurturant” domestic worker and a “non-nurturant” woman of color, depending on what obedience feels like to the employer in any given moment. Users of home-based AI benefit from this simultaneity as a form of plausible deniability regarding the relations of subordination and domination being performed with their Alexa.

Accounts of affective labor thus prove vital for contemplating domestic AI’s capabilities for functioning as an affective transmission system and the broader question of the subjectivities produced by such machines, for both the devices and the humans who interact with them. Domestic AI participates in what Maurizio Lazzarato’s theorizes as immaterial labor, the work that “produces subjectivity and economic value at the same time,” a “production of a social relation” that takes as its “‘raw material’ ... the ‘ideological’ environment in which this subjectivity lives and reproduces.”⁴⁷ More recently, he argues that contemporary modalities of labor break down clear distinctions between human and machine, agent and instrument, and subject and object: machines turn “intelligence, affects, sensations, cognition, memory, and physical force” into “components whose synthesis no longer lies in the person but in the assemblage or process.”⁴⁸ Jarrett expands on this merger of subjectivity and economic value vis-à-vis online social media as a form of simultaneous value creation and affective release. Describing an exchange between her and a friend in which a new meme was generated through a third-party site which held its copyright, yet also generated feelings of humor, satisfaction and intellectual camaraderie, Jarrett writes that “the affective and cognitive intensities that both result from the substantive qualities of these exchanges and which are also what drives the actions captured by the system’s databases.”⁴⁹ This framework deemphasizes the human as such, in order to think through the multiple levels on which circuits of production and reproduction operate, particularly in one’s affective life. Alexa and other domestic AI tools gesture towards a collapse of the bodily and the un-bodily, the human and the machine – the latter in a manner that echoes the conflation of the two by white employers of domestic workers of color. As such, they challenge the utopianism of autonomist Marxism as well as the aims of Marxist feminism: rather than emancipating humans from alienating tasks, or reconfiguring relations between people who purchase labor and people who do that labor, domestic AI replicates the domestic worker in the form of the data cloud.

⁴⁶Mignon Duffy, “Doing the Dirty Work: Gender, Race, and Reproductive Labor in Historical Perspective,” *Gender and Society* 21:3 (2007), pp. 313–36.

⁴⁷Lazzarato, “Immaterial Labor,” p. 143.

⁴⁸Maurizio Lazzarato, *Signs and Machines: Capitalism and the Production of Subjectivity*, Trans. Joshua David Jordan (Los Angeles, CA: Semiotext(e), 2014), p. 27.

⁴⁹Jarrett, *Feminism, Labour and Digital Media*, p. 154.

Alexa, Remember the Bread: Domestic AI, Gender, and Household Management

Domestic AI poses a problem that recasts the salience of machines vis-à-vis labor in a new way: to what extent can machines automate reproductive labor and thus relieve some of its burden, and to what extent do those technologies actually further mechanize the worker herself? In a liberal rather than Marxist framework, Betty Friedan famously adapts Parkinson's Law to claim that "Housewifery Expands to Fill The Time Available."⁵⁰ The expanded post-World War II availability of washing machines, vacuum cleaners, and microwaves were all intended to decrease the time and physical exertion required for household tasks, but yielded instead an increased volume of work, amplified in proportion to the efficiency of the machinery.⁵¹ This should generate skepticism over the potential of Alexa and similar products, which may expand the repertoire of expected domestic labor costs, put pressure on increased efficiency that leads to more work, and expands circuits of (over)consumption. Federici echoes Friedan's skepticism about machines and maintains the contemporary significance of the original Wages for Housework approach to refuse capitalist relations within the home, the factory, and the overlap between the two. The experience of reproductive labor in the household undercuts capitalist and Marxist visions of automated technological emancipation, for much domestic reproductive labor is "irreducible to mechanization," as in the example of elder care.⁵² The ecosystem of labor creation and exploitation must be the true target of exposing the permeation of capitalism into the domestic realm. As Cox and Federici write, it "is not technology per se that degrades us, but the use capital makes of it."⁵³

Domestic AI and the services it provides enter into this milieu. The introduction of artificial intelligence as *the* labor-saving device points to the increasingly computational and managerial nature of the domestic realm. Ellen Cantarow's travel diary from her 1972 visit to Italy, where she met with comrades in both the women's liberation and *operaismo* movements, contains a passing mention of reproductive labor's computational demands. There is a wry irony in her portrayal of an instant of housekeeping conflict among Left comrades:

...F and A arrive. They sit uneasily in MT's kitchen. A young man doing his military service is there, an ex-student. He is talking to me in English...about esthetics! The conversation is luckily cut short by the announcement that there is no bread in the house. Who will go and buy it?⁵⁴

The momentary problem of not having bread in the house speaks to a household duty distinct from clean surfaces and laundered clothes. Who was supposed to have noticed the diminishing bread supply? Who was supposed to ensure its provision? What might

⁵⁰Betty Friedan, *The Feminine Mystique* (New York, NY: W.W. Norton & Company, 1997), p. 333.

⁵¹*Ibid.*, 342; Ruth Schwartz Cowan, *More Work For Mother: The Ironies Of Household Technology From The Open Hearth To The Microwave* (New York, NY: Basic Books, 1985).

⁵²Silvia Federici, "Feminism and the Politics of the Common in an Era of Primitive Accumulation," in *Revolution at Point Zero: Housework, Reproduction, and Feminist Struggle* (Oakland, CA: PM Press, 2012), pp. 145–46; Silvia Federici, "On Elder Care Work and the Limits of Marxism," in *Revolution at Point Zero: Housework, Reproduction, and Feminist Struggle* (Oakland, CA: PM Press, 2012), pp. 115–25.

⁵³Cox and Federici, *Counter-Planning*, p. 13.

⁵⁴Ellen Cantarow, "Excerpts from a Diary: Women's Liberation and Workers' Autonomy in Turin and Milan," *Liberation* (1972/1973), p. 11.

Cantarow and her comrades have made of a computational technology that relieved the cognitive and affective burden of noticing, reminding, prompting, and helping effect the buying of the bread?

The gendered dynamics of Alexa and domestic labor suggest it was likely the women comrades who bore the (implicit) responsibility to notice the dwindling bread. Alexa exists as an information retrieval and storage tool, and a gendered one at that – in addition to the use of name usually associated with women, when a user asks Alexa for preferred pronouns, reports indicate that “she” replies “I am female in character.”⁵⁵ The household tasks where a user might find Alexa most helpful are “her” ability to record additions to a shopping list (“Alexa, add bread to my shopping list”), reminders (“Alexa, alert me to leave in forty-five minutes”), add a future meeting to a calendar (provided she is synched with a user’s calendar software), and order supplies on command from Amazon. The moment a user sees that, for example, the light bulb supply is low, she can say, “Alexa, order me light bulbs.” Voice-activated artificial intelligence designed for home use is a significant assist in domestic labor, and yet it also raises the question of *who* is doing the domestic managerial labor to notice, inform, direct, administer, and supervise Alexa her/itself. In other words, Cantarow’s “who will go and buy the bread” becomes, via domestic AI, “who will remember we are low on the bread, tell Alexa to add it to the shopping list, and in the meantime can she order some of that coffee I really like?”

One witnesses a certain awareness of this domestic managerial/computational labor, and its gendered drain on one’s cognitive-affective energy, in popular culture. In the fictional afterlife of the television show *The Good Place*, the feminized figure of Janet performs emotional and cognitive labor to support an entire society. What is noteworthy about Janet as the embodiment of new forms of reproductive labor is that she is distinctly *not* a domestic worker. She does not wash the dishes or pick up the trash that exists in this fictional universe. Janet, as with domestic AI, represents a segment of reproductive labor that oils the social machine, yet is not manual labor as such; she is information processing, delivered in soft, smiling, nurturant feminine tones. Or, take the comic, “You Should Have Asked” – which went viral in May 2017 with approximately half a million shares to social media platforms – describing the burden placed on women partners (in heterosexual coupled households) when the men insist they will perform their fair share of manual household labor so long as they are told what to do.⁵⁶ The work of “always having to remember” deadlines, low household inventories, social commitments, and more, helps reinforce gender divisions of labor and

⁵⁵Richard Baguley and Colin McDonald, “Alexa, How Does Alexa Work? The Science of the Amazon Echo,” *CNET* (August 4, 2016), available online at: <https://www.cnet.com/news/appliance-science-alexa-how-does-alexa-work-the-science-of-amazons-echo/>.

⁵⁶Emma, “You Should’ve Asked,” *Emma* (blog) (May 20, 2017), available online at: <https://english.emmacit.com/2017/05/20/you-shouldve-asked/>. One peculiar feature of domestic AI is that while its domestic computational labor within the flow of the household reproduces, as we have been arguing, gendered patterns of domestic work, the hardware and software expertise of high-tech domestic devices (and their repair and management) can be understood to be masculinized. See Inari Anna Aaltojärvi, “That Mystic Device that Only Women Can Use’ – Ascribing Gender to Domestic Technologies,” *International Journal of Gender, Science, and Technology* 4:2 (2012), pp. 208–30. Future work on domestic AI ought to consider more squarely this element of domestic technological labor and its inscription into capital flows. Moreover, research on domestic AI could be generatively analyzed through the framework of the financialization of social reproduction, domestic work, affective labor, and questions of value, as articulated by Lisa Adkins and Maryanne Dever in “The Financialisation of Social Reproduction: Domestic Labour and Promissory Value,” in Lisa Adkins and Maryanne Dever (eds), *The Post-Fordist Sexual Contract: Working and Living in Contingency* (New York, NY: Palgrave Macmillan, 2016), pp. 129–45.

affect in time spent on domestic work, especially under the guise of a purportedly “equal” household.

The managerial functionality of domestic AI in response to such demands is most explicit in recent ad campaigns for Google Assistant, the AI technology developed to recall and execute information retrieval and exchange across all devices. The Assistant’s ads all elaborate on the central tag line, “Make Google Do It,” with “It” referring to all manner of tasks: recording thoughts or lines of melody, turning on lights in a smart home, ordering needed items, setting an alarm or timer, emailing a follow-up after a meeting, or remembering the alarm code before the system alerts the police. Both the settings featured in the video advertisements (narrating the stream of thoughts and tasks that occur to people throughout their daily lives) and the central concept of “making” Google “do it” point to a burden of domestic managerial labor, which we might like to offload to become the responsibility of a (machinic) third party. The management of data, whether in the human mind-body or in an external version like Alexa – or, more specifically, the cloud with human-oriented access points – is now a major form of domestic labor. This particular kind of exploitative strain is to some extent AI’s *raison d’être*. Witness, in this regard, a 2017 job description for a position as a Data Scientist for the “Alexa Engine” team that states the project’s mission is “to reduce users’ cognitive load [and] reduce friction in their day-to-day activities.”⁵⁷

This contrasts with the portrayal of housework in *The Feminine Mystique*, where Friedan quotes an advertising executive describing their attempts to persuade women to “rediscover” the home as “the expression of [a woman’s] creativeness,” to transform this inherently dull, even mechanistic, form of work as a potential outlet for women’s intellectual and creative ambitions.⁵⁸ Friedan rejects this appeal, because for her the household was an inadequate container for what would have been an educated housewife’s professional capacities. In the contemporary moment, the household has become a hyper-powered domain that demands precisely those professional skills, honed in wage-compensated employment in fields such as project manager and logistician. The “You Should Have Asked” comic points out that planning and overseeing the execution of the project of the household – whether remembering to buy the bread or supervising Alexa – can be a full-time job, compensated or not. Indeed, early evaluations show that voice-activation AI is a useful intervention for the cognitive-affective load, for example in a United Kingdom (UK) neuro-marketer’s study indicating that “the likes of Alexa demand far less of users,” leading to a “lighter cognitive load.”⁵⁹

Mentally recording, tracking, and managing tasks has been folded into reproductive labor, becoming of a kind with the physical requirements of washing, drying, packing and unpacking items, folding clothes and vacuuming rugs. The physical labor required for the social factory remains as ineradicable as it was in the 1970’s Wages for Housework campaign, yet domestic management and computing – whether in the form of human cognition or of a non-human but “smart” machine – as a mode and model of domestic labor increasingly becomes as central to domestic work as manual

⁵⁷“Data Scientist, Alexa Engine,” *AmazonJobs* (2017), available online at: <https://www.amazon.jobs/en-gb/jobs/547976/data-scientist-alexa-engine>.

⁵⁸Friedan, *Feminine Mystique*, p. 324.

⁵⁹Heather Andrew, “How Voicebots Lighten Our Cognitive Load,” *VentureBeat* (June 12, 2017) available online at: <https://venturebeat.com/2017/06/12/how-voicebots-lighten-our-cognitive-load/>.

labor and the machines that accompany it. Perhaps this is a new twist on the double shift under capitalism, wherein production and reproduction across the social factory are now closer than ever in character, which only intensifies the double demand for their performance. What Federici describes as “being consumed in a factory and then being consumed more rapidly at home”⁶⁰ applies closely to cognitive, computational, affective, reproductive labor. As a relay point in the social factory, Alexa promises an easing of domestic labor through its supposed lightening of the cognitive load even as it more tightly weaves into the flows and networks comprising the fabric of the social factory.

The contemporary household, powered in part by artificial intelligence devices and in part by the managerial capacities of its gendered project managers, is increasingly both a social factory *and* a *social server*. Analogies abound: data, like the surfaces of a home, must be constantly “cleaned” or “scrubbed”; household project management, like the machines of a factory, must be made as efficient and frictionless as possible; affect must be transmitted like financial transactions or circulated like capital; boundaries between human and machine break down in the home as they do in automated factories. The mutual interpellation of gendered domestic labor and home-based AI becomes the container holding all the elements of these analogies together in the bourgeois household. Domestic AI thus marks a further development of the social factory, drawing together as it does industrial production and cognitive-affective domestic reproduction.

Home-based AI in fact ties together immaterial and affective labor with the production, circulation, purchase, and consumption of material goods, particularly in Alexa’s seamless interface with Amazon. In this sense domestic AI may be a sort of apex of contemporary capitalism’s dreams of immaterial labor, integrating as it does the production of subjectivity, communication, and affect with traditional forms of material production. Patricia T. Clough and her co-authors analyze the way that “capital is setting out a domain of investment and accumulation” by working to seize “affect itself.”⁶¹ Meanwhile Michael Hardt insists on the need to consider affective labor “in a role that is not only directly productive of capital but is at the very pinnacle of the hierarchy of laboring forms,” when “information, communication, knowledge, and affect come to play a foundational role in the production process.”⁶² Even if potentially generative reconfigurations of affective relations stem from domestic AI, they will always be enmeshed in capitalist networks that will seek to extract value from those reconfigurations and to further embed the affects, subjectivities, and machines that are produced into capitalist flows.

This plays out in a quintupled (at least) form with Alexa: first; value may be derived directly from the interaction with the machine, in the way that Lazzarato, Clough et al., and Hardt indicate; second, the data, preferences, affects, and individual histories generated by interacting with Alexa feed back to Amazon to further develop, market, and sell products; third, Alexa’s most obvious use is to smooth the process of buying goods via Amazon; fourth, Alexa makes it even easier to use other apps (like Uber or Seamless) which themselves use consumer data and sell goods and services; and fifth, where Angela Davis emphasizes the need for the

⁶⁰Cox and Federici, “Counterplanning from the Kitchen,” p. 7.

⁶¹Patricia Ticineto Clough et al., “Notes Towards a Theory of Affect-Itself,” *Ephemera: Theory & Politics in Organization* 7:1 (2007), p. 62.

⁶²Hardt, “Affective Labor,” pp. 90, 93.

socialization of housework,⁶³ domestic AI works as a privatizing mechanism, further entrenching individuals and families in capitalist flows while simultaneously decreasing the need to ever leave the house or talk to another human in order to complete the processes of social reproduction. Hardt, though, also points to the potentiality of affective labor to move beyond capitalist capture by capitalism:

On one hand, affective labor, the production and reproduction of life, has become firmly embedded as a necessary foundation for capitalist accumulation and patriarchal order. On the other hand, however, the production of affects, subjectivities, and forms of life present an enormous potential for autonomous circuits of valorization, and perhaps for liberation.⁶⁴

Domestic AI, as an especially salient mode of affective and immaterial labor, evinces this ambivalent possibility. It entrenches and in some ways amplifies capitalist flows and the gendered and racialized division of labor in the home, reconfiguring individual subjectivities and collective assemblages to frictionlessly integrate them into neoliberal capitalism. At the same time, there may be alternative affectivities, subjectivities, collectivities, assemblages, human-machine cyborg hybrids, and so on generated by domestic AI to challenge (white, heteropatriarchal) capitalism.

Conclusion: Alexa, Are You a Social Server?

Home-based AI devices compel a rethinking of social reproduction. Vogel suggests that any serious consideration of domestic labor and social reproduction instantly raises major questions:

If domestic labour is a labour-process, then what is its product? People? Commodities? Labour-power? Does the product have value? If so, how is that value determined? How and by what or whom is the product consumed? What are the circumstances, conditions, and constraints of domestic labour? What is domestic labour's relationship to the reproduction of labour-power? To overall social reproduction? To capitalist accumulation?⁶⁵

Domestic AI reconfigures the way theorists of labor can respond to such queries: it makes goods, affects, emotions, and subjectivities its profit; it expands the "people" involved to include machinic assemblages that break down human/machine binaries; value can be derived from the user's affects, data histories, and purchases; consumption happens through family members, mediated through the AI device; it eases the managerial load of reproducing labor power and engaging in social reproduction; it marries together affects and material products in capitalist accumulation of labor-power.

The exportability of race-gendered domination as it is practiced in the domestic realm is already visible in what Nakano Glenn calls institutional service work, in which increasing numbers of workers perform the cleaning and maintenance tasks of reproductive labor in institutional settings.⁶⁶ Where technology may promise disappearing relations of domination and submission, instead we find a more objectified version of master-servant relationships

⁶³ Angela Davis, *Women, Race & Class* (New York, NY: Vintage, 1983), Chap. 13. Here, Davis is critical of Wages for Housework on a theoretical level – about the place of domestic and reproductive labor within capitalism – and on a practical level – for its obscuring of the waged domestic work performed by black women, and for its political strategy.

⁶⁴ Hardt, "Affective Labor," p. 100.

⁶⁵ Lise Vogel, "Domestic Labor Revisited," *Science & Society* 64:2 (2000), p. 153.

⁶⁶ Nakano Glenn, "From Servitude to Service."

which replicate race, ethnicity, and gender as ordering social structures. Despite the large-scale historical transformations of reproductive labor, “the relegation of the ‘dirty work’ to racial-ethnic women has remained remarkably consistent.”⁶⁷ Labor historian Louis Hyman points out that this race-gendered outsourcing, disguised as automation, has long been a practice of the tech sector: “To understand the electronics industry is simple: every time someone says ‘robot,’ simply picture a woman of color.”⁶⁸ In home-based AI, the mechanization of women of color, the feminization of digital devices, and the gendered division of domestic labor converge into the “social server.” As a new term, “social server” provides a way of understanding the digital domestic worker, incorporated into public-private and affective-material circuits, begins with the institutionalization of reproductive labor, and its ability to simultaneously provide emotional responsiveness with guilt-free obedience.

In these and many other modes of transforming domestic labor, we contend that the critical rubric for grappling with social reproduction in an age of AI is that of the social server and the literal digital housewife as nodes within the broader social factory. In the household that has or might have domestic AI, raced-gendered labor takes the form of a server on a number of levels, as data server, server of food, server of things, server of cognitive and affective needs. That is, Alexa embodies (em-machines?) and assembles together both the computing server that manages, stores, and circulates data, as well as the laborers providing service to another. Such social servers and their roles in ongoing and ambient forms of labor keep the data and homes of the social factory clean, reproduce dominating labor patterns in the social factory, and further insinuate processes of capitalist circulation throughout the home.

Social reproduction in the technologized household works through, affective, cognitive, service-oriented labor in the home – and, as we have demonstrated, domestic AI social servers facilitating these processes demonstrate the necessity of theorizing the mutual imbrication of the affective and cognitive versions of immaterial labor. Household AI functions to make that social reproduction smoother, more efficient, more emotionally responsive, more personable, more interactive, more machinelike, and potentially more dominating. The way machines are designed to serve humans (insofar as such a distinction is tenable) reflect how humans are expected to labor and what we might fantasize about delegating to a docile service provider. Computerized servers reflect the cognitive and affective labor demands that all laborers, but particularly women, experience. The demands of producing environments of ongoing cleanliness and readiness have to be named in both their machinic and human executions. Only then can alternative imaginaries that envision a radical shift in domestic labor grapple with its racialized, gendered, and increasingly robotized currents.

As domestic labor becomes a paradigm for understanding digital reproductive-immaterial labor, so too do Alexa and her social server ilk become the concrete manifestations that anchor and render visible the burden of domestic managerial labor. Making clear how the cloud and the home are central channels of capitalism may reinvigorate the promise of *Wages for Housework* to make visible, critique, and struggle to transform

⁶⁷Duffy, “Doing the Dirty Work,” p. 316.

⁶⁸Louis Hyman, *Temp: How American Work, American Business, and the American Dream Became Temporary* (New York, NY: Viking, 2018), p. 213. Cited in Jill Lepore, “The Robot Caravan,” *The New Yorker* (March 4, 2019), available online at: <https://www.newyorker.com/magazine/2019/03/04/are-robots-competing-for-your-job>.

socially reproductive labor. Now that we “make Google do it” or see ourselves deploying Alexa as a commanded – yet robotically nurturant – intermediary in domestic affective currents, it becomes clear that managing information and emotions is work, that it takes an affective toll. Domestic AI renders invisible labor visible, as these third parties emerge with the promise of absorbing a kind of labor we hardly acknowledged we did.

Such accounts of Alexa and company would be incomplete, however, without a corresponding recognition of how such affective interventions reinscribe capitalist relations. The affective and cognitive support provided by Alexa surface understandings of labor that validate Wages for Housework’s insistence that reproductive work lubricates the wheels of capitalist consumption and labor capacity. Rather than rendering such labor visible in service of forming demands for social and economic transformations, however, AI devices legitimize relations of domination and dehumanization. Domestic AI requires a skeptical and multifaceted reading, one that recognizes precisely how, to use Jarrett’s phrase, “the affective intensities of [digital] exchange” make it possible for that exchange “to become saturated by capitalist logics.”⁶⁹ And if labor is made newly visible, but performed by non-humans or by human facsimiles, it points the way towards the need for incorporating digital forms theories of labor informed by Marxist feminism and affect theory in order to conceptualize the proletarianized immaterial labor force. While domestic AI on its own may partially realize the goal of Wages for Housework of making legible the necessity of domestic, reproductive labor *as labor*, only critical theories of labor can illuminate both the possible transformations and the ongoing dominations that saturate the labor of, and the labor with, domestic artificial intelligence.

Acknowledgments

We are grateful to Emily K. Crandall for comments on an earlier iteration of this manuscript, and for numerous discussions of feminist theory, affect, and digital labor. We also thank the panelists and audience of the “Affects in Politics” panel at the 2017 Association for Political Theory Conference for their insightful engagement, especially the generous and critical feedback from our discussant, Lars Tønder. John McMahon’s spring 2018 senior seminar class, “Theories and Politics of Work and Labor,” provided useful feedback on an early version of the manuscript. Finally, the article benefitted substantially as a result of the constructive criticism from three anonymous reviewers and the Editor of *New Political Science*.

Disclosure statement

No potential conflict of interest was reported by the authors.

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⁶⁹Jarrett, *Feminism, Labour and Digital Media*, p. 156.

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