

On Domestic Fantasies and Anti-work Politics. A feminist history of complicating automation.

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Abstract:

In this article we place the discussions of automation in post-work imaginaries within and alongside feminist critiques and understandings of domestic technology.

Structured in three parts, the first surveys debates on the future of work, showing how feminist materialist critiques of technology would lend itself to an anti-work rather than post-work politics. The second focuses on both historical and contemporary feminist critiques of domestic automation to situate the post-work condition in this longer lineage. In the final section, we sketch the contours of a distinctly feminist anti-work imaginary drawing on Dolores Hayden's work on collective domestic settlements and Rachel Maine's work on amateur uses and repurposing of obsolete technologies in the name of a politics of pleasure.

Key words: anti-work, domestic technology, domestic labour, feminist, social reproduction

In this article, we interrogate recent debates on post-work, considering how a significant part of the recent scenarios speculating around the impact of full automation and the coming of a post-work society rely on particular assumptions or understandings about the relationship of work to technology. In many of the current

discussions around post-work, we find the analysis of the domestic realm to be lacking and speculations around how it could be possible to dismantle and move beyond the current shape and functions ascribed to the family as a standard are often insufficient. However, accounting for the unpaid work that goes on at home and in the community has long been a focal point of attack of feminist critics. The relation between the status of work between capital and domestic life has always been a crucial point of struggles for feminist movements, a point that exploded again in the 1970s, as feminists began to trace the connections and interdependencies between exploitation in the factories and hierarchies at home and in the community (such as in the well-known case of the transnational campaign Wages for Housework).¹

As the notions of 'separate spheres' became challenged, domestic technologies began to be understood as implicated in practices of production, reproduction and consumption. In relation to post-work scenarios, we therefore find it important to turn to feminist critiques of domestic technologies which have, in multiple ways, dismantled some of the fantasies that technology was meant to bring. They lend an historical depth to contemporary post-work debates, in ways that might help avoid the blind-spots or received notions that have already been debunked.

In this article we place the discussions of automation in post-work imaginaries within and alongside feminist critiques and understandings of domestic technology. We open with a survey of current debates on the future of work, showing how feminist materialist critiques of technology would lend itself rather to an anti-work rather than post-work politics, following Kathi Weeks.² Via this survey, we point to the specific contribution of Marxist feminist debates that critically linked the conditions of work

outside a wage-relation with the unpaid, invisibilised labour that is naturalised in the home, bringing a more nuanced standpoint from which to situate the role of technologies.

The second section traces on both historical and contemporary feminist critiques of domestic automation, culminating in the “smart home”. Such critique helps to situate the post-digital and post-work condition within a in the longer lineage of the development of ‘automatic’ devices or appliances in the home, such as the automatic washing machine. This latter type of device and its contemporaries are well documented and analysed by feminist scholars, who we draw on here.

In this section we bring together a range of perspectives from different disciplines, such as history STS, architecture, sociology and political theory, which could all be considered feminist insomuch as they make gender and class at the centre of their analysis. However, these scholars do not represent a homogenous feminist school of thought nor a single view, as it is always the case for feminisms, but they share some important points of convergence about the relationship between technologies and work from which we depart in order to challenge some of the tenets of the current post-work discourses. Taken together, such feminist perspectives on domestic technologies invite a deeper reflection around the double tie that links the realm of working life with its counterparts, variously conceptualised as private / public, home / factory, production / social reproduction, work / rest, and so on.

What these works also share is the moment in which they were authored. In Anglo-American scholarship particularly, in a period of about fifteen years, roughly between

1975 and 1990, many publications were put forward that revealed a growing attention towards domestic practices as a prolific site of political enquiry around questions to do with the division of labour and how the myths of progress impacted gender roles specifically as they realised themselves throughout the unfolding of the modern industrial era. While these authors did not speak about ‘agency’, we feel this term could be utilised to capture what was at stake in these debates: what were technologies *doing* in terms of transforming relationships at home and with the home? What was not explicitly foregrounded in these conversations was the role played by racialisation in such dynamics, which are thankfully becoming much more prominent now, especially in relation to algorithmic racism and new forms of technological discrimination, as well as invisibilised labour in outsourced platforms for domestic work for hire or delocalised call-centres, and also across researches focusing on the human and ecological impact of the production and disposal of hardware in the context of extractivist globalised operation and new forms of colonialism.

Given the historical production of the divisions of paid/ un-paid, productive/ un or re-productive labour, the case of the domestic and domestic technologies complicates any assumption that technology might be inherently emancipatory. Similarly, those technologies complicate the perspective that the home is somehow a site that is autonomous from capital and that emancipation from work can take place without revisiting the organisation of social metabolism, reproduction and the redistribution of its responsibilities as made possible by specific technical imaginaries. Following Kathi Weeks, we suggest that in order to criticize and debunk the myth of work one must also reconsider the family in parallel.³ In the third and final section, we

therefore take automation and domesticity as two central concepts to sketch the contours of a distinctly feminist anti-work imaginary. Here we draw on Dolores Hayden's work on alternative collective domestic settlements and the different forms of technologies that they developed.⁴ We take this alongside Rachel Maine's work on amateur uses and repurposing of obsolete technologies in the name of a politics of pleasure.⁵ This helps to refocus the attention given to automation in its role, not so much as a tool for production, but rather seen as providing an infrastructure of an emancipatory social reproduction.

THE FUTURE OF WORK

The future of work, or better yet, its demise due to the growth of available automated processes, has become a topic of enormous political interest in recent years. The projection data are indeed powerful: according to the different methodologies used, most reports speak of a minimum loss of 10%⁶ up to a maximum close to 50%⁷ of all jobs in the next decades; and these calculations become more impactful if we take into account that entire industries that could disappear as a secondary consequence of automation.⁸ Post-work society has become somewhat of a fashionable expression to sum up the eventuality of such epochal changes, but perhaps its popularity is due precisely to the fact that this term conjures up a vast array of imaginaries about the near future without revealing too much of the politics and values lying at their core. The post-work scenarios in circulation range from the dystopian vision of a world marked by extreme inequalities and total government of lives, to more optimistic proposals based on a fully automated luxury communism and the possibility of a universal basic income.

On the one hand we have an interest in post-work coming from the capitalist position of those belonging to what McKenzie Wark names the 'vectorialist class,'⁹ those who are ruling over the informational infrastructure of the present. This position can be well represented through the various bombastic declarations of the likes of Mark Zuckerberg (CEO of Facebook), Richard Branson (CEO of Virgin) and Elon Musk (CEO of Tesla), top exponents of the vectorialist class recently converted to the idea of some kind of basic income.¹⁰

The key protagonist found in the reflections of these billionaires is technology itself, via the advent of mass automation, made possible by more efficient artificial intelligences and by algorithmic predictions applied to management. Here, it is the machine that is at the centre, and a resulting society freed from work emerges as a problematic reality to be managed, either with 'the carrot or the stick'. What do you do with it, what is redundant humanity for, too, once this can no longer be valued as a "reserve army" of the unemployed, ask Zuckerberg, Branson, Musk (and their many acolytes)? And so, the various basic income models advocated for by these entrepreneurs also share the specific trait of maintaining the idea of a quantifiable performance, subjected to metrics, in exchange for a basic sustenance is at the centre of their paradigm. The sphere of non-remunerated labour is ultimately expanded, encouraging and accelerating the mutation of welfare systems into workfare ones, where compulsory unpaid work is required in order to gain access to subsidies. These are the imaginaries brewing among the (well-meaning and unaware, sometimes) accelerationist right: a societal re-design where technologists

get to shape the very values and life choices of everyone, at an unprecedented level.

In a 2013 TED Talk, economist Andrew McAfee enthusiastically reported how:

When I talk about this with my friends in Cambridge and Silicon Valley, they say, 'Fantastic. No more drudgery, no more toil. This gives us the chance to imagine an entirely different kind of society, a society where the creators and the discoverers and the performers and the innovators come together with their patrons and their financiers to talk about issues, entertain, enlighten, provoke each other.' It's a society really, that looks a lot like the TED Conference.¹¹

Echoed a few years later by another TED talker addressing post-work:

Suppose you know that at some point in the future, no matter what, you're going to get the same basic income as everyone else. Now, to my mind, that creates a very perverse incentive for you to simply give up and drop out of school. So I would say, let's not structure things that way. Instead, let's pay people who graduate from high school somewhat more than those who simply drop out.¹²

The idea that machines will free us from an economy of scarcity is an old trope in political conservative thinking, found for instance in Alvin Tofler's *Future Shock* of 1970,¹³ or in the *Triple Revolution* report, delivered to President Lyndon Johnson in March 1964.¹⁴ But one that, we would argue, misses the mark on many levels by

misinterpreting the scarcity of jobs in the economy as a problem of productivity, rather than one of redistribution of wealth, division of labour, violence and power.

This is the situation on the right end of the spectrum. But what about the imaginaries circulating in more progressive debates, positioned on the left and dedicated to an idea of post-work becoming a chance for furthering social justice? Here, the post-work hypothesis in circulation can be grouped mainly in two types, which can be summarised as full automation and full autonomy.

The first, 'full automation' has been perhaps best captured by the sentence *Fully Automated Luxury Communism*, which was indeed circulated as a meme amongst the UK radical left before it became the title of an article by Aaron Bastani, recently turned into a book;¹⁵ but it is also found in Srnicek and Williams' *Inventing the future: Postcapitalism and a world without work*,¹⁶ among others. Here, automation and ecologically sustainable technologies make it possible to surpass the scarcity of capitalist austerity and transport us in the unbounded space of abundance economy. In this scenario, the common intelligence of the general intellect would become a networked entity of extreme sophistication that would be able to take care of satisfying the enormous variations of needs and desires that traverse the social body.

This version has the merit of placing the emphasis on the richness of possibilities that come with the all too human capacity of embedding knowledge in automatons and machines that could finally enable our species-being to transform many of the burdens currently linked with toiling for social reproduction. Moreover, they have the

merit of emphasizing the nonetheless social and interconnected nature of life after work, thus giving an incentive to complicate the vision of small utopian and happy municipalities from which they would immediately want to escape. In this sense, this machinic imaginary of luxury avoids a certain nostalgia for a return to a simple and frugal life in a small, idyllic communities that fascinates many on the left, an image that could lend itself to easy superimpositions with fantasies of a much more far-right flavour, however, as demonstrated by the current rise of eco-fascist initiatives and worldviews.¹⁷ The problem however, remains that by positing plentiful consumption as 'the' alternative to work, we risk forgetting how much of this consumption is also a kind of work in the present moment, a work of consumption, acquisition and prosumption fully enmeshed in capital exchanges. The metabolic needs of a society that equates luxury with access to automated consumption paths would be, given the current technological infrastructure, astronomical and unsustainable not only ecologically, but perhaps also psychically and affectively.

On the other hand, we find a second family of imaginaries that, rather than focussing on automation, emphasises a post-work scenario based on what we call 'full autonomy'. This can be found in the literature connected more directly from a famous expression that Marx and Engels outlined in the *German Ideology*, as they briefly sketched how life could look like in realised communism:

For as soon as the distribution of labour comes into being, each man has a particular, exclusive sphere of activity, which is forced upon him and from which he cannot escape. He is a hunter, a fisherman, a herdsman, or a critical critic, and must remain so if he does not want to lose his means of

livelihood; while in communist society, where nobody has one exclusive sphere of activity but each can become accomplished in any branch he wishes, society regulates the general production and thus makes it possible for me to do one thing today and another tomorrow, to hunt in the morning, fish in the afternoon, rear cattle in the evening, criticise after dinner, just as I have a mind, without ever becoming hunter, fisherman, herdsman or critic.¹⁸

Here, as in other more contemporary version of this kind of convivial frugality for instance found in David Frayne's *The Refusal of Work*, the imagined organizational blueprint is based upon a combination of self-organized sustenance activities (such as rearing cattle) and intellectually stimulating endeavours (such as critiquing after dinner).¹⁹ The merit of this second kind of post-work imaginary is that it avoids another popular left-wing nostalgia for a return to the welfare state or a Keynesian economic model, hinting towards a more autonomously managed social landscape. However, there are at least two different problematic aspects at play in this proposal. One is the danger of assigning value to those activities that are still recognizable as 'useful' in a rather classic sense as found in the protestant ethics, on the one hand; and the second has to do with the fantasy of self-sufficiency as something that can open the door to images of self-managed communities organised in self-contained productive estates, thus once again resembling a right-wing idea of a big society organized around an industrious *oikos*.

Both of the scenarios outlined above tend to assume rather than unpack the concepts of automation and of the private biography as the site of autonomy, relying on fantasies that we can debunk. When opening the door of the private sphere,

where the exercise of luxurious consumption or autonomous activities would occur, the imaginary fall short of exposing the impact of a refusal of work upon a transfigured “domestics.”²⁰ Whether one speculates on the technological drive of automating more and more functions of the living, or whether one emphasizes autonomy as a kind of spontaneity of intentions and passions, what is missing here in these two dominant keys used in popular left discourses is a theory of how to think of economics as a deeply libidinal issue that is implicated in questions of intimacy, interdependence and reciprocity, as much as of autonomy and volition.

In other words, there is no sophisticated vision of consumption and use that can accompany and support the overcoming of work conceived as a rejection of relationships dictated by capital. We suspect that one reason for this blind spot in recent conversations around the end of work might be due to the fact that many post-work scenarios developed out from a conception of automation as a process that mainly impacts the sphere of processes that are already identified as ‘productive’ in a capitalist sense, that is, as immediately able to generate a profit. However, there is another line of thought, that of the rejection of work, elaborated mainly in the context of the two different political experiences of autonomist Marxism and materialist feminism, which unlike the post-work discourse does not imagine the question in terms of overcoming (post-), but maintains political action at the centre of the thinking of the two terms of the question: that is, decentralizing technology as a locus of emancipation and denaturalising work as a remunerated service, develops critical insights and practices that would be most aptly defined as anti-work.

There are important differences between the premises from which the speculations related to a post-work and anti-work society take shape. To challenge the post-work in a Silicon Valley style techno-solutionist key, the rejection of work needs both the thought of autonomous Marxism and that of materialist feminism. Paraphrasing an important concept exhibited by Kathi Weeks, the destruction of the myth of work requires an equally intense criticism of the normalized domestic sphere, of the family, at the idea of private life.²¹ To do this means, in the first analysis, to dismantle the idea that the technological problem is a problem only relevant to production and that instead personal relationships are an ambit of impulses desires and immediate or "natural" interlacements. In this sense, some analytical tools that come from the critical feminist debate around technologies and home automation can help us avoid the impasses linked to a policy of full automation that fails to focus on collective intelligence as something stubbornly alive and not exhausted in its contact with the technological object.

CRITIQUES OF DOMESTIC AUTOMATION

One of the primary assumptions in post-work scenarios, the belief that technology is inherently 'labour-saving', is problematised when turning to the pioneering work of the historian Ruth Schwartz Cowan, who, writing in the 1980s, demonstrated that technological innovations for the home in the 1800s and 1900s United States were not 'labour-saving' but rather that domestic technologies *reorganised* work processes in such ways that reduced work for some, and increased work for others (impacting women, working class, and men and women of colour especially).²² While machines

did much to alleviate the so called 'servant problem' for those families who hired domestic help, it is important to highlight that the introduction of new technologies did not provoke what they termed the crisis of servants. In keeping with the anti-work hypothesis, the introduction of domestic machines could instead be seen as a consequence of a growing resistance of working class men and women to enter into service, as this was a form of life that was miserable and isolating, preferring instead to take on other kinds of paid work.²³ In charting emerging innovations in domestic technologies Schwartz Cowan demonstrates how they in fact gave rise to new types of work (such as consumption work) and significantly brought more work for women. Schwartz Cowan, and others like the sociologist Elizabeth Shove, clearly demonstrated that while domestic technologies did remove 'drudgery' and the physical toil of household labour, domestic innovations were accompanied with greater expectations about what that work should deliver.²⁴ The coal powered stove, for instance, Schwartz Cowan argues, ultimately meant that more than one dish could (and therefore should) be cooked at once, or technologies like the car, resulted in an increase of the labour that enables consumption.²⁵

Another insight feminist scholarship lends is that not only technological 'labour-saving' innovations increase work but significantly do so in uneven ways, which coincide with and reinforce gender, race and class inequalities. In her research on city of Pittsburgh, historian Susan J. Kleinberg explains the ways that domestic technologies, such as running water, were not extended to working class women, who were tied to older, more laborious methods of doing housework.²⁶ They had no capital to invest nor any income independent of their husband (who did not value these devices), which was compounded by a lack of municipal technologies and the

wider urban conditions in which they lived, in a poor neighbourhood with increased industry, pollution, no paving, no sewage, no water infrastructure making it harder for those working class women to keep their houses clean and increasing their work burden.²⁷ Namely those women who would have most benefitted from those technologies did not have access to it, but were subjected to more and harder work.²⁸

As sociologist Elizabeth Shove more recently proposed, consumer goods and domestic technologies never operate in isolation, but are integrated, or 'cohere':

relatively little has been written about how suites of technologies and products are used together and how they cohere, socio-technically and symbolically, in shaping the meaning of what it is to be comfortable or to keep oneself and one's clothes appropriately clean. This theme of integration proves to be especially important when thinking about the temporal coordination of everyday life and the self-fulfilling dynamic of the endless pursuit of convenience.²⁹

This theme of integration it seems to us a crucial one to focus on for future research into post-work scenarios, as it challenges any easy assumption around the possibility of simply converting existing infrastructures for different anti-work living.³⁰ As Schwartz Cowan noted, the perception that the technologies which come to be dominant and prevalent in everyday life are so because of their technical excellence (a kind of technological Darwinism, if one likes, presupposing the survival of the fittest or most performative technologies as the sole factor at play in their societal

adoption) does not bear out when studying the practices of those objects design and manufacture. One of the most famous insights of her book, emerges from her examination of some of the technologies that 'didn't make it', died out, or for a variety of reasons became untenable for its users, including the 'death' of the gas refrigerator in favour of the electric one. In the development of the electric and the gas domestic refrigerators each experienced comparable technical problems, yet according to Schwartz Cowan the gas refrigerator had considerable advantages to the consumer, being cheaper to make, cheaper to run, quieter to run, and cheaper to maintain as it had no moving parts that would break down.³¹ Yet the electric one won, not because it was the better product or had more potential, but because of the considerable sums invested in its development, provided by General Electric who were keen, not only to sell refrigerators, but through those products and other household appliances, increase the regular sale of electricity to every household.³² In describing the emergence of household technologies as co-emerging with infrastructures, relying on the development of national power grids and domestic wiring, sockets and so on being commonplace, Kleinberg, Schwartz Cowan and Shove thus show the wider lesson is that domestic technologies do not 'get rid' of work and housework in and of themselves, but by creating new demands, new standards and new inequalities they tie users ever more into (wage) dependence, both through the consumption of objects and devices as well as to the costs levied to enable access to the infrastructure they depend on. All of which, as Shove argued, are enmeshed in evolving standards and practices that particularly give rise to increased consumption and intensifying uses of environmental resources.³³

A third insight coming from a feminist perspective, revolves around the recognition and problematization of the ways in which domestic labour has been reorganised to mirror the techniques and the pace dictated by 'scientific' management, as first applied in the factory. Broadening the scope of what is understood as domestic technology, from objects to environments, the application of technological and scientific knowledge to the home is especially evident in the field of architecture in the particular case of the Frankfurt Kitchen. Designed by Margarete Schütte-Lihotzky in 1926, the Frankfurt Kitchen can be seen as part of a wider movement in Germany at the time to Taylorise the housewife and to rationalise the working-class home. Despite being a communist activist, Lihotzky followed Taylor's studies of workflows in factories and offices that aimed to make them more efficient, and considered that the same method could be applied to work in the home. The design for the Frankfurt Kitchen, was driven by a rationale to use as little space as possible, and making a woman's movements in the kitchen minimal and compact.³⁴

This drive for domestic modernisation found support from a range of diverse parties and agendas: to feminists, it was seen as means of relief from drudgery and a recognition of domestic labour; for industrialists, she explains, it was seen as a means to make the workforce more productive, and for unions seen as part of a modern, progressive future.³⁵ Yet as historians Susan Henderson and Mary Nolan separately note, the act of modernising the home did not liberate women's time, with the benefits going "first and foremost to others- husbands, children, industry and the national economy, the political party and the state."³⁶ Henderson argued that ideas around domesticity in the Weimar republic at that time were a significant aspect of the retrenchment of feminism (and part of being a good German housewife).³⁷ Noting

that there was nothing sentimental about ideas of the home here, the household was seen as part of a national economy and therefore subjected to the same rules and analysis. Crucially, the domestic was not seen as separate sphere, but rather became subject to the pervasive “[adoption of] the language of production.”³⁸

The time saved by an appliance or the application of ‘scientific knowledge’ to domestic processes to increase quality and save time was never for women’s own leisure or development. Thus, a significant lesson that we can learn from the history of feminist critiques of domestic automation specifically, is that the very definition of what counts as undesirable work and what counts as desirable work is always already at stake in the development of new technologies, and that the focus on the technological component which is the starting point of analysis for many post-work enthusiasts remains partial to a key political component, which is the use of time.

A fourth significant strand of feminist critiques of domestic technology, made by Susan May Strasser amongst others, is the resulting individualisation of domestic labour that previously had a social dimension.³⁹ The observation that technology reorganises agency and tasks socially, remains relevant today, and as in the case of the Frankfurt Kitchen, “each household and each housewife was to be rationalised, but unlike in industry, each would perform all tasks.”⁴⁰ So unlike the factory, labour is not fragmented, but multiple tasks became undertaken individually in isolation, with women effectively self-managing or self-Taylorising. This isolation was not only tied to the introduction of the new appliances, designed and manufactured to be installed in individual homes, but combined with a political outlook that valorised individual productivity as a mark of social standing for the housewife. To realise how different

political views of social time and rest for women would have resulted in a different planning, one can turn for comparison to the mass housing projects constructed at a similar time in Vienna described by Eve Blau, which experimented instead with collectivisation of domestic technologies for working class women.⁴¹

As a counterpoint to the Frankfurt Kitchen, individual dwellings in the new mass housing in Vienna also had taylorised '*WohnKuche*', but the city was also concerned with the collective and public spaces of the houses, including the provision of collective domestic spaces. Images publicising the projects shows these spaces in operation and highlights them as sites for innovative technologies - such as steam powered washing machines, steam irons, electric dryers - that would not be otherwise available at the scale of individual dwellings.⁴² The illustrations of individual interiors, Blau notes, show families at leisure, with girls in particular shown "as engaged in intellectual pursuits: reading, studying, lost in thought."⁴³ The efficiencies afforded by the architectural design and new technologies would enable girls and women to use their time for their own study and greater participation in political life, where "the new political and economic life of the proletarian city was to be shaped not in the private space, but in the public and communal space provided in the new buildings."⁴⁴ Although the collective laundry rooms and ironing rooms were still accompanied by problematic gender assumptions that left wider divisions of labour unchallenged, yet they prefigured a different path to overcome the isolation of housewifery and participated in an imaginary of free time as self-determined but as socially embedded.

The domestic as the site of this private enjoyment of time is thus in need of analysis and unpacking here. As the history of domestic automation and feminism has more generally demonstrated, this privatised notion of time produces subjectivities that are atomised and confined into practices of consumption at best, or might suffer isolation, psychological distress (brought about by isolation, rather than solitude) and social stigma at worse.

As a recent report on the reduction of working time summarises,

the added value of time is abstract and the added value of time is, to a large extent, collectively determined [...] Depending on the free time of your peers, your own free time will be more or less valuable.⁴⁵

In this respect, post-work scenarios that emphasize the role of technologies in freeing up time or that simply embrace personal inclinations as a driver for leisure remain insufficient, insofar as they under conceptualize the problem of free time as something to be enjoyed in private, rather than as something that needs to be collectively assigned meaning and value, even (perhaps mostly) when it might be spent in activities involving self-care.

In concluding this brief excursus, today feminist criticism of technology in the home is coming to terms with the questions raised by the automation of objects in the home, improperly termed the Internet of Things (IoT). In looking at the discourses used to promote such new automated and connected domestic technologies, the tendencies identified in feminist scholarship that surrounded earlier moments of innovation in the

home, seem to continue unabashed. Domestic automation, devices and spaces, from the robot-vacuum cleaner and 'Effie' the automatic ironing robot to self-cleaning glass, the self-cleaning oven, or the fridge that will order your shopping for you, are examples of technologies whose stated aim is to *reduce maintenance work*, to *reduce social reproduction*. In new 'smart' home, appliances are presented as allowing their users a greater capacity for 'multi-tasking' and productivity through time saving, a promise that is not so far removed from their Victorian counterparts [insert images]. Thus, the multiplication of tasks; the redistribution of labour and changing expectations; increased consumption labour and increasing dependence on both public and private infrastructures, remain just as relevant and visible. Similarly, the spread of these new forms of domestic innovation will be just as uneven through its contingency on accessibility of digital communication networks.

The ghost of scientific management and its panoptical preoccupation with total overview and control of the worker lingers on. Recent enquiries are bringing to light how digital appliances can become new tools of domestic violence and abuse. For example, ex-partners, jealous husbands or dominant fathers can now control the family passwords and use devices to survey their kin's activities and movements. In other cases, landlords have been reported using smart home technologies to directly monitor their tenants, using the data collected to punish or drive away unwanted renters.⁴⁶

Moreover, mirroring the considerations of Kleinberg, Schwartz Cowan and Shove, the distribution or adoption of a few technologies in everyday life never happens simultaneously, and this coincides with a relative impoverishment and a social

stigmatization of those excluded. As it happened at the times of the uneven electrification of different districts, also today when thinking of our relation with digital infrastructures, we shall not forget that, as Ursula Huws put it, “so many features of social and economic life are designed on the assumption that everyone now has these new commodities that survival without them becomes ever more difficult.”⁴⁷ The relationship between product adoption and infrastructures continues to be highly visible with new digital technologies, so that as it happened for the fridge, it is not necessarily the most useful technologies that become wide spread, but the one which are backed by the biggest capital interests. The profits at stake around technological products and their networks remain to such an extent that Ursula Huws speaks of contemporary “tithes”, such as those mobile phone companies profiting from our social lives every time we send an SMS or those small charges incurred when we use a debit or credit card.⁴⁸ The utility networks, such as electricity, which enabled the proliferation of household technology in the early 1900s, or today’s digital infrastructures of wireless communication both share common ground in that they represent a deepening of the commodification of everyday life and social relations, via increasing dependencies of private and municipal infrastructures that can only be accessed via the wage relation.

Considerations on how digital tools and networked appliances can become vehicles for new/old forms of domestic violence, and the realisation that today’s digital infrastructures can embed new/old forms of class discrimination and wage dependency into households are simply two entry point into a much vaster enquiry into the role of digitalisation in reshaping the politics and imaginaries of domestic dwelling. While this task is beyond our focus here, what we believe is that revisiting

feminist materialist critique of technologies in the home can contribute to current research into post-work theories, challenging the assumption, couched in many mainstream debates around post-work (as opposed to anti-work) where deliverance from labour is thought as being intrinsic to the adoption of certain technologies themselves.

The assumptions around the impacts of technologies on patterns of work cut across both right- and left-wing positions, which assume that the problem lies either within the technology itself or as a problem of its management, ownership and governance. The feminist critique we revisited in these pages, instead, highlights how considerations of the characteristics of the technologies themselves must be seen as enmeshed together with evolving practices, cultural norms and wider urban infrastructures. The societal impact of technological change therefore operates across public and private spheres, complicating their inter-relationships and dependencies. What this presents is a serious challenge for technologies to be appropriated or refused in the name of emancipation from work.

Keeping all of this in mind, what remains to do for expanding our critique, then, is to also look at how materialist feminists proposed a different approach to the problem with work by rethinking not only the critique of the domestic as coinciding with the sphere of the private, but also by looking at the alternative types of domestic technologies feminist collectivities could (self) produce for their own reproduction.

Domestic Revolutions, grand and small

Feminist criticism of home automation not only offers a sharp analysis of techno-solutionism, but also allows us to weave another minor and valuable story to build an anti-worker imaginary. It is a genealogy that tells the role of feminism in reconfiguring the domestic and its technologies in a radically different manner starting from the question of the division of spaces and work times. One of the most significant contributions to this analysis comes from the architectural historian and theorist Dolores Hayden, whose seminar work *The Grand Domestic Revolution* is a minor but powerful story that elaborates how women's rejection of work has generated its own technological policy.⁴⁹ In the tradition of feminist materialist initiatives that have tried to reorganize and rethink what the domestic might look like if not privatised, Hayden's careful construction and analysis of this US genealogy surveys and revisits the many experimentations of collectivization of domestic life that took place there between the 1890s-1920s. She shows how these experimental practices of collective co-habitation were guided by a feminist critique of the organization of social reproduction that generated many technological innovations, which were advanced for their times, noting a whole range of new invention including:

special insulation and ventilation

gas lights,

steam baths,

steam heat

an improved washing machine;

the common clothespin;

a double rolling pin for faster pastry making;
a conical stove to heat flatirons;
the flat broom;
removable window sash, for easy washing;
a window-sash balance;
a round oven for more even cooking;
a rotating oven shelf for removing items more easily;
a butter worker;
a cheese press;
a pea sheller;
an apple peeler;
an apple parer which quartered and cored the fruit;
a lazy susan dining-table center,
an improved mop wringer,
an improved washing machine;
an institutional-scale potato peeler;
large cradles which could hold as many as six children;
specially designed furniture at child scale;
'Community Playthings',
extensive landscaped play spaces.⁵⁰

What is remarkable is the length of the list of innovations Hayden references, demonstrating the domestic not as a recipient of innovative, industrial technology but creator of technology designed for collective convivial life. Interestingly, discussing these vernacular, autonomous technologies, Hayden points out that these women

“rather than being on call day and night, like the average wife and mother” did have the leisure to cultivate “their other interests such as reading, writing, participating in musical or theatrical performances, developing friendships, enjoying amorous relationships.”⁵¹ The domestic in the feminist and socialist communities above, becomes the locus of the technological revolution rather than its passive recipient - a question that will reopen many years later Shulamith Firestone in her call for a feminist development and appropriation of reproductive technologies⁵² - rejecting any simplistic re-appropriative approach to the technological problem, that is, the hypothesis that it is enough to regain possession of the existing technological apparatus to guarantee the possibility of their different political use.⁵³

The collective development of technology in Hayden’s work is in sharp contrast to the technologies mentioned above, such as the Frankfurt Kitchen. As Henderson’s account helps to unravel, its design was firmly within the context of a state policy of “female re-domestication”, with the retrenchment of feminism occurring with high-rate of joblessness post-war.⁵⁴ The crisis of male work and the rise of female employment resulted not in greater equality, but instead on aggrandising “the status for woman’s sphere”, a trend witnessed in more recent right-wing agendas.⁵⁵ In the case of the Frankfurt kitchen, the domestic sphere was bolstered “as the ideological equivalent to male professions”⁵⁶ which was to be achieved by making it more like the (male) workplace with scientific rationale and technologies. The contrast of this example with the collective domestic technologies, highlights the connection between the refusal of work and the refusal of the domestic. The question of the relationship between ‘spheres’ of production and social reproduction needs to be seen as a division produced by capitalism, where social reproduction constitutes an

epistemological standpoint to reflect upon the relation between living labour and capital across different social spaces. As Marx already said, “*every social process of production is, at the same time, a process of reproduction.*”⁵⁷ Thus, the technology in the home is a terrain of struggle between the domestic as a site of the mere subsistence of the labourer or ground for generating autonomy in the name of pleasure or self-determination.

A compelling line of inquiry in this direction which we want to put forward draws on the work of American historian of technology, Rachel Maines, who retraced technologies developed specifically for enjoyment. The author, made famous by her research on the vibrator, in her book *Hedonizing Technologies* focused instead on the relationship between machines and pleasure in a different key, investigating the principles that guide the development of technologies related to amateurism, leisure, hobbies and all those activities that pertain to free time.⁵⁸ Her studies explain how technologies become ‘hedonizing’ with respect to their practices of use whenever they have been abandoned in their productive capacity, but have managed to survive and enjoy a second life as tools used for amateur purposes. Maines shows that users’ values and requirements in terms of what they seek from their technologies, have radically different material qualities and purpose than their original design intended, and indeed that these values re-shape the very functionalities of the devices at stake.

The amateur activities taken into consideration and the corresponding technologies reveal themselves to be very different in nature (ranging from crochet or ‘extreme ironing’ to amateur airplane flying), thus excluding the possibility that there may be

intrinsic pleasure in a given practice. Instead, the emphasis is placed onto the material and historical conditions in which these activities take place as leisure. The technologies involved in these enjoyment processes gradually undergo mutations to respond to the need for satisfaction immanent in the activity itself, rather than dictated by a certain productivity threshold. What Maines' insight points towards is that these technological adaptations are themselves variegated, disobeying any assumption about the inevitability of technological development: enthusiasts sometimes try to recreate an immediate experience and prefer more primitive technical tools than those commonly used; but at other times, satisfaction comes from experimentation with sophisticated technological tools or even hacked ones. In both cases, however, the relationship with technologies seems to confirm that practices of pleasure are linked to the possibility of re-skilling - that is the development of new skills, faculties, skills and knowledge - in a protected regime, without too many costs or social risks: the domestic sphere here can be seen as a temporary and partial shelter where interaction with technology only constitutes a step in the development of counter- life techniques.

The feminist genealogy we outlined above are just two highlights among the many that are needed to create more complex feminist and anti-workerist political imaginaries, able to draw deep and meaningful relations between the refusal of work to the rejection of normalized domesticity - understood either as the place of family, of total personal freedom or of consumption. These examples also allows us to reflect by contrast on the techno-political mechanisms that are reshaping the relationship between the social body the technologies according to a paradigm that can be defined as "technological domestication," that is, a paradigm that expands the

characteristics of labour in the home - invisibilization, informality, moralisation and servilism, to the entirety of relations.⁵⁹ Finally, the feminist reflection on the technologies of the domestic calls for the qualitative aspect of the policies of enjoyment of common time; the role of consumption as a productive activity and of use as an important element of subjectivization, questioning the problematic hypothesis of re-appropriation in an emancipatory sense of existing technological infrastructures. Their standpoint also offers a viable methodological blueprint for moving away from a Kantian conception of technology understood “as an anthropological universal” towards its recasting as a plural entity, what Yuk Hui called a world of “multiple cosmotechniques,”⁶⁰ where each technology is understood as being simultaneously generative of and constrained by specific life-worlds.

What a feminist critique of automation allows us to think about also adds another immediately political value to the problem, because it puts the accent not so much on the possible ‘post-’scenario, but on the processes that would allow the transition to such scenario in the first place, emerging from a range of social forms as interconnected components of a totality. While autonomous Marxist’s take on the refusal of work has been at the centre of much influential debates and critical analysis in the last twenty years at least, feminist criticism of the technologization of the domestic has much to offer to today’s project of moving the anti-work horizon centerstage for left politics. It might allow us to shift our gaze from considering technologies in their immediately productive role, to consider them instead as components of a broader infrastructure that always reproduces, as well as being productive of, their own cosmologies.

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- ¹ Silvia Federici, *Wages Against Housework* (Bristol: Falling Wall Press, 1975).
- ² Kathi Weeks, *The Problem with Work: Feminism, Marxism, Anti-work Politics, and Post-work Imaginaries*. (Durham: Duke University Press, 2011).
- ³ Kathi Weeks, *The Problem with Work*.
- ⁴ Dolores Hayden, *The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighbourhoods and Cities* (Cambridge: MIT Press, 1982).
- ⁵ Rachel P. Maines, *Hedonizing Technologies: Paths to Pleasure in Hobbies and Leisure* (Baltimore: John Hopkins University Press, 2009).
- ⁶ Melanie Arntz, Terry Gregory, and Ulrich Zierahn, "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis," *OECD Social, Employment, and Migration Working Papers*, no. 189, May 14, 2016, <http://dx.doi.org/10.1787/5jlz9h56dvq7-en>.
- ⁷ James Manyika et al., "What the Future of Work Will Mean for Jobs, Skills, and Wages," *McKinsey Global Institute*, November 2017, <https://www.mckinsey.com/global-themes/future-of-organizations-andwork/what-the-future-of-work-will-mean-for-jobs-skills-and-wages>. Carl Benedikt Frey and Michael A. Osborne, "The Future of Employment: How Susceptible Are Jobs to Automation," *Oxford Martin Programme on Technology and Employment*, September 17, 2013, <https://www.oxfordmartin.ox.ac.uk/downloads/academic/future-of-employment.pdf>.
- ⁸ Kai-Fu Lee, *AI superpowers: China, Silicon Valley, and the new world order*. Houghton Mifflin Harcourt, 2018.
- ⁹ McKenzie Wark, *Molecular Red: Theory for the Anthropocene* (London: Verso Books, 2015).
- ¹⁰ Catherine Clifford, 'What billionaires and business titans say about cash handouts in 2017 (Hint: lots!),' *CNBC*, December 28, 2017, <https://www.cnbc.com/2017/12/27/what-billionaires-say-about-universal-basic-income-in-2017.html>.
- ¹¹ Andrew McAfee, "What will future jobs look like?" *TED Conference* February 2013, https://www.ted.com/talks/andrew_mcafee_what_will_future_jobs_look_like?language=en
- ¹² Martin Ford, "How we'll earn money in a future without jobs", *TED Conference* April 2017, https://www.ted.com/talks/martin_ford_how_we_ll_earn_money_in_a_future_without_jobs/transcript?language=en
- ¹³ Alvin Toffler, *Future Shock* (London: Random House, 1970).

¹⁴ The Ad Hoc Committee on the Triple Revolution [Linus Pauling, with 34 co-authors], "The Triple Revolution." Santa Barbara, California, 1964.

<http://scarc.library.oregonstate.edu/coll/pauling/peace/papers/1964p.7-01.html>

¹⁵ Aaron Bastani, *Fully Automated Luxury Communism* (London: Verso Books, 2019).

¹⁶ Nick Srnicek and Alex Williams, *Inventing the Future: Postcapitalism and a World Without Work* (London: Verso Books, 2015)

¹⁷ Michael E. Zimmerman, "The Threat of Ecofascism," *Social Theory and Practice* 21, no. 2 (1995): 207-238.

¹⁸ Karl Marx and Friedrich Engels, *The German Ideology* (New York: International Publishers, 2004 [1846]), 53.

¹⁹ David Frayne, *The Refusal of Work: The Theory and Practice of Resistance to Work* (London: Zed Books, 2015).

²⁰ Fourier, cited in Giulia Palladini, "On Coexisting, Mending and Imagining: Notes on the Domestics of Performance," in *A Live Gathering: Performance and Politics in Contemporary Europe*, eds. Ana Vujanovic and Livia Piazza (Berlin: b_books, 2019), 106-131.

²¹ Kathi Weeks, *The Problem with Work*.

²² Ruth Schwartz-Cowan, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave*. (New York: Basic Books, 1983), 45.

²³ *Servants: The True Story of Life Below Stairs*. TV documentary series, dir. Hugo Macgregor / Paul Berczeller. Presenter: Pamela Cox. (BBC TWO, 2012).

²⁴ Elizabeth Shove, "Converging Conventions of Comfort, Cleanliness and Convenience," *Journal of Consumer Policy* 26, no. 4 (2003): 395-418.

²⁵ Schwartz-Cowan, *More Work for Mother*, 84.

²⁶ Susan J. Kleinberg, "Technology and Women's Work: The Lives of Working Class Women in Pittsburgh, 1870–1900," *Labor History* 17, no.1 (1976): 58-72.

²⁷ Kleinberg, "Technology and Women's Work", 58-72.

²⁸ Kleinberg, "Technology and Women's Work", 58-72.

²⁹ Shove, "Converging Conventions," 397.

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- ³⁰ Jasper Bernes, "Logistics, counterlogistics and the communist prospect," *Endnotes* 3 (2013): 172-201, accessed February 19, 2018, <https://endnotes.org.uk/issues/3/en/jasper-bernes-logistics-counterlogistics-and-the-communist-prospect>.
- ³¹ Schwartz-Cowan, *More Work for Mother*, 139.
- ³² Schwartz-Cowan, *More Work for Mother*, 128-150.
- ³³ Shove, "Converging Conventions," 395-418.
- ³⁴ Susan R. Henderson, "A Revolution in the Woman's Sphere: Grete Lihotzky and the Frankfurt Kitchen," in *Architecture and Feminism: Yale Publications on Architecture* eds. Debra Coleman, Elizabeth Danze, and Carol Henderson (New York: Princeton Architectural Press, 1996), 234.
- ³⁵ Mary Nolan, "'Housework Made Easy': The Taylorized Housewife in Weimar Germany's Rationalized Economy," *Feminist studies* 16, no.3 (1990): 551.
- ³⁶ Nolan, "Housework Made Easy", 550.
- ³⁷ Henderson, "A revolution in the woman's sphere", 227.
- ³⁸ Nolan, "Housework Made Easy", 558.
- ³⁹ Susan M. Strasser, *Never Done: The Ideology and Technology of Household Work, 1850-1930* (State University of New York, 1977).
- ⁴⁰ Nolan, "Housework Made Easy", 563.
- ⁴¹ Eve Blau, *The Architecture of Red Vienna, 1919-1934* (Cambridge: MIT Press, 1999).
- ⁴² Blau, *The Architecture of Red Vienna*.
- ⁴³ Blau, *The Architecture of Red Vienna*, 204.
- ⁴⁴ Blau, *The Architecture of Red Vienna*, 204.
- ⁴⁵ Stan De Spiegelaere and Agnieszka Piasna, *The Why and How of Working Time Reduction*, European Trade Union Institute, 2017, <https://www.etui.org/Publications2/Guides/The-why-and-how-of-working-time-reduction>.
- ⁴⁶ Miranda Hall, "Beware the Smart Home," *Autonomy*, November 2018, <https://autonomy.work/portfolio/beware-the-smart-home/>
- ⁴⁷ Ursula Huws, *Labor in the global digital economy: The cybertariat comes of age* (New York: Monthly Review Press, 2014), 8.
- ⁴⁸ Huws, *Labor in the global digital economy*, 15.
- ⁴⁹ Hayden, *The Grand Domestic Revolution*.

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- ⁵⁰ Hayden, *The Grand Domestic Revolution*, 48-49.
- ⁵¹ Hayden, *The Grand Domestic Revolution*, 48-49.
- ⁵² Shulamith Firestone, *The Dialectic of Sex: The Case for Feminist Revolution* (New York: William Morrow & Company, 1970).
- ⁵³ Bernes, "Logistics".
- ⁵⁴ Henderson, "A revolution in the woman's sphere", 223.
- ⁵⁵ Melinda Cooper, *Family values: Between neoliberalism and the new social conservatism* (New York: Zone Books, 2017)
- ⁵⁶ Henderson, "A revolution in the woman's sphere", 223.
- ⁵⁷ Karl Marx, *Capital Volume One* (London: Penguin Classics, 1990 [1887]), 711.
- ⁵⁸ Maines, *Hedonizing Technologies*.
- ⁵⁹ Valeria Graziano, "Rivoluzioni domestiche contro domesticazioni tecnologiche," in *La natura dell'economia*, ed. Federica Giardini (Rome: DeriveApprodi, forthcoming).
- ⁶⁰ Yuk Hui, "Cosmotechnics as Cosmopolitics," *E-Flux Journal* 86 (November 2017) <https://www.e-flux.com/journal/86/161887/cosmotechnics-as-cosmopolitics/>