The automated states, automated government, and self-automation of the ‘smart’ appliance: three questions about refrigerators

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Abstract
This essay considers the automation of the everyday through ‘smart’ domestic appliance, specifically the current regime of smart refrigerators. The essay revisits and rethinks perspectives about media by McLuhan, focusing particularly on his discussion of clothing, cars, clocks, light bulbs, and highways as ‘media’. The essay outlines a critical practice (a ‘critical refrigerator studies’), as a means of rethinking ‘media power’, through perspectives by Foucault about technologies of government and through perspectives by Otter about Liberal objects.

Keywords
automation, governmentality, Liberal objects, media, smart appliance

This contribution to the present Special Issue’s thematic emphasis on the everyday practices and technologies of automation focuses on a specific domestic appliance – the ‘smart refrigerator’. The article uses the smart fridge as an exemplary object to consider what is useful about reflecting on the recent meanings of ‘media’ and how studies about the current linkages between digitalization and automation can benefit from that exercise. However, the article is particularly interested in how smart appliances (understood in terms of their technical operations and applications) have become, at home, technologies of management, whose governmental utility is worth taking seriously and examining within media studies. The article, thus, proposes that the recent regime of automation through which the smart refrigerator operates and is operated is a significant sphere of Liberal objects, citizenship, and governmentality. Thinking about the current regime of Liberal citizenship and government through the smart refrigerator, and through its value within the automation of managing domestic life, calls attention to contradictions and questions about personal
freedoms and control within contemporary daily life – particularly in those social classes and parts of the world that value a ‘smart’ regime of domestic appliance.

**Question 1**

*Why have many studies about media and the current regime of digitalization been slow to address household appliances (‘smart refrigerators’ or ensembles such as ‘smart kitchens’) – or even ‘media’ as appliances? How might recognizing this disposition provide useful, alternative perspectives about ‘automating the everyday’?*

Although it would be incorrect to blame this disposition on a set of assumptions about ‘media’ that derives (still) from Marshall McLuhan’s (1964) *Understanding Media*, it is always useful to recognize how current research is prompted to ask questions foisted on it from the past. There are several uptakes of “understanding media” after McLuhan that persist in the present, not only particularly in those parts of the world where research has focused around the term ‘media’ but also in current fields of research that have adopted alternative terms (‘digitalization’, for instance) to signal their focus on a new environment and way of life. One uptake is the persistence of ‘media’ as a mid-20th-century term in whose wide circulation McLuhan’s proposals and provocations have played a prominent and powerful (though by no means singular) role. As Raymond Williams (1983 [1976]) noted, the use of the term ‘media’ precedes the mid-20th century, and Williams (1992 [1974]) expressed a soft irritation in the 1970s about how McLuhan’s adoption of the term had simplified the complexity of communications in the 20th century (pp. 120–122). McLuhan’s claim that ‘the medium is the message’, a central theme of *Understanding Media* which became a pithy mantra during the 1960s and 1970s for the emerging field of ‘media studies’, emphasized the need to recognize the distinct features of *media*. *Understanding Media* promised to provide a resource to distinguish one medium from another and to distinguish eras as media cultures, each shaped by different media and their associated technological regimes (as is indicated, for instance, by his ideas of print culture and electronic culture). Because the ‘medium is the message’, one needed not only to recognize that television or radio were media but also to ‘understand media’ according to their technological differences and specific historical effects.

Although McLuhan was not engaged with semiotics, it is no small coincidence that *Understanding Media*’s effort to differentiate media (to describe the specific and relatively discrete characteristics of each medium) emerged around the same time as the early experiments in applying semiotics to film, television, and popular culture (Fiske, 1987; Metz, 1990 [1974]). Although McLuhan’s explanation of media (his book’s claim that the medium is the message) emphasized the technological specificity and effectivity of each medium, and whereas semiotic theory and criticism emphasized that each medium comprised distinct and even distinctive systems of signification and representation, both perspectives assumed the heuristic virtue of differentiating among media forms. The emerging field of Film Studies, for instance, harnessed semiotics to posit, if not demonstrate, that film is a language-like system; for McLuhan, the medium specificity of film involved its appropriation of technical capacities of other media (literature and photography). This tendency had to do, in part, with the challenges to old models of literary education, whose longstanding orientation toward aesthetics began to acknowledge and rationalize critical studies of electronic, popular, and mass cultural forms. Introducing film criticism in Departments of Literature depended on demonstrating that film was its own aesthetic and representational system. This impulse to differentiate media (creating Departments of Film or of Radio–TV–Film, for instance) was not a direct result of McLuhan’s proposal for ‘understanding media’, but his rationale certainly helped support these trends.
The widespread adoption of the term ‘media’ in the second half of the 20th century and the trend toward a wide and diverse array of academic and research projects about media are complicated by the lessons that most of these studies failed to learn from McLuhan – lessons that are worth learning, better late than never. Understanding Media is divided into two sections. The first section elaborates the general implications of the idea that ‘the medium is the message’, and the second section is a compendium of 25 short essays about different ‘media’ and the specific features of each one. The section begins with chapters about the Spoken Word and Written Word and concludes with chapters about Movies, Radio, and Television (the latter of which, in the mid-1960s, had become the preeminent point of reference for explaining how an electronic culture was replacing oral and written cultures). It is useful to recognize that these media served as the appropriate book-ends for understanding media at that time because they became the primary media around which media studies developed in the second half of the 20th century. In the United States, Communications, Speech Communication, Journalism, and the Radio–TV–Film combination became the preferred objects and disciplinarities of media studies – whether as research fields oriented toward the social and behavioral sciences or toward the Humanities and Liberal Arts. Furthermore, media studies and communication studies became increasingly focused, obsessed even, with what was on the page or the screen, or with, to borrow John Peters’ expression, ‘speaking into the air’ (Peters, 2001).

The discourse of media which gained traction in the second half of the 20th century through media and communication studies was decidedly less concerned with many of the other objects included in the second part of Understanding Media – objects such as clocks, cars, wheels, bicycles, airplanes, roads, houses, credit cards, light bulbs, and clothes. Understanding Media included chapters on the typewriter years before Friedrich Kittler (1986, trans. 1999) suggested its relevance to the history of film, and it included a chapter on games a couple of decades before the first wave of arcade and domestic computerized gaming and decades before game studies. More far-fetched, polemical, and perhaps even ludicrous for some readers were Understanding Media’s chapters on clothing, clocks, the motorcar (‘the new Mechanical Bride’), wheel/bicycle/airplane (joined in that way), highways, and credit cards. For the ‘serious’ work of media criticism or empirical communication science, these examples of media seemed spurious. They lacked screens or sounds whose content could be analyzed – critically (as meaning, representation, and ideology) or scientifically (as measurable messaging and social or psychological effects). The difficulty of fitting these latter objects into histories and reigning assumptions about communication made them seem not to be media. There have been well-known and influential semiotic studies of objects included in Understanding Media – motor vehicles such as the Vespa (Eco and Calabrese, 1996), clothing (Barthes, 1990 [1967]; Barthes, 2013 [2004]), and dwellings (Eco, 1996) – but semiotics’ uptake academically tended to be mostly about literature, visual culture, and screen media such as cinema and TV. Furthermore, semiotics always returns objects to their relation between form or design and their potential meanings. For Roland Barthes, clothing is primarily a fashion language (Barthes, 1990 [1967]); for Umberto Eco, architecture is ‘mass communication’ (Eco, 1996). Williams rightly questioned McLuhan’s account of media as too technologically determinist and offered an inspired account of television’s emergence within a regime of transportation/motorcar and domesticity, but it is difficult to imagine Williams (following his early accounts of culture and communication) writing a book called Clothing or Clocks: Technology & Cultural Form.

So, why revisit this history of the discourse of media, and the birth of media studies, now? In part, as noted above, because it is always worth reflecting on how the history of knowledge invites us to privilege certain questions about the present over others. How, for example, does work on new terms such as ‘spreadable media’ and ‘digitalization’ perpetuate decades’ old dispositions about the preferred objects of and emphases in the study of media? It is also worth revisiting this
history because in the second decade of the 21st century, there have been numerous well-publicized experiments, not all of them successful, with smart devices (including things such as clothes, motorcars, highways, and clocks, discussed by McLuhan) which are the outcome of considerable investment of research and development by what are typically recognized as ‘media’ and ‘communication’ companies. The ascription of the adjective ‘smart’ or ‘intelligent’ to these objects certainly implies their relation to industries, economies, networks, and technologies of communication, and they certainly are, in part, communication devices – ‘media’ in the 20th-century use of the term. Without simply reproducing media studies’ native assumptions of what media are, and what their functions are, how should Google Glass or the Google Car or the Apple Watch be understood?

One strategy for understanding and studying ‘smart’ objects has occurred under the banner of the Internet of Things. There is a McLuhanist intonation to that expression, in its emphasis on networked technologies and on understanding objects and things as media (as well as mediated and mediating). The research thus far on the Internet of Things underscores the need to open the historically preferred range of objects and things typically studied as media, and it has moved the study of media away from the centrality of human agents of communication (as senders, receivers, and communities of practice; see, for instance, Miller, 2015). However, understanding these objects as belonging to an Internet of Things places the Internet at the center of their operation and mattering – it is the Internet that connects and defines them. In that way, these things and objects are reinscribed as primarily communicative, and if they are considered as ‘media’ they are conceived as primarily about communication. And, in that way, the Internet of Things perpetuates a disposition about communicative media that is rooted in 20th-century enterprises such as Communication and Media Studies. It also potentially reinscribes these objects and things in a 21st-century discourse about ‘creative industries’, or even a 20th-century discourse about ‘culture industries’ – both of which have used particular forms of screen and audio communication media as the primary examples of their projects.

While there was much discussion at the beginning of the 21st century about ‘new media’ driving ‘convergence culture’ (Jenkins, 2006), that discourse was more attached to the convergence of ‘platforms’ for distribution and the ‘spreadability’ of content across screen media. There is now a more robust functional convergence occurring through smart watches, self-tracking technologies, smart cars, smart highways, personal devices for financial transaction, and domestic appliances. Although the practices that the discourse of media convergence addressed may have been, more or less, representative of emergent technological regimes, economies, and cultures at the time, the discourse was in many ways residual – perpetuating 20th-century assumptions and disposition about ‘media’. Although the turn toward ‘convergence’ promised to grapple with technological (and even human/non-human) hybridity, as assemblages, it assumed that media were separated in the 20th century, but have converged in the 21st century. That way of understanding media reproduced a facet of McLuhan’s proposal and more profoundly failed to recognize that objects and things were never as separated as post-Kantian philosophy and sciences had insisted. Amidst all of the chatter about convergence, where, dear Media Studies, is the smart refrigerator?

Elsewhere in the humanities and social sciences, there are current accounts of ‘digitalization’ that de-center media by situating media in ‘everyday practices’, in spaces comprised only partly of media objects and in ‘entanglements of other things’ (Pink, 2012; Pink et al., 2016). ‘Digital ethnographies’ (alongside ‘digital sociology’) which are rationalized and practiced this way, and which grapple with the issue of ‘digital materialities’ (Pink et al., 2016), are important touchstones for the project that I outline in this article. So, too, are the late-20th-century studies that examined TV in the home (Hartley, 1999; Morley, 1986; Silverstone, 1994; Spigel, 1992), or studies that have turned attention to ‘media environments’ (McCarthy, 2001; Moores, 2012) or to TV as object
(Morley, 2007). However, projects conducted under the banner of ‘the digital’ often adopt that term as a shorthand, whose referent is supposedly self-evident or primarily about forms of computer-mediated communications such as ‘digital TV and radio’, computer games, blogging, Twitter, Instagram, Facebook, and YouTube. They also easily feed into epochalist assumptions that the present is an era marked primarily by ‘digitalization’ – not unlike McLuhan’s description of an Electronic Age that displaced an Age of Print. It is important to reflect energetically on how a history of media- and communication research (the discursive formation of ‘media’ and its perpetuation through research) is shaping what we ask about ‘the digital’. In an alternative to existing media studies’ questions about the mattering of things in economies of production and consumption, or in cultures of meaning-making, I propose a different set of questions about how agency, power, and control work through technological regimes of everyday automation.

Few assessments of McLuhan’s Understanding Media address the significance of his having begun and ended his proposal by focusing on automation. He begins the first chapter, ‘The Medium is the Message’ by suggesting that automation technology is ‘integral and decentralist … in patterning human relationships’, in contrast to ‘machine technology … which was fragmentary and centralist’ (McLuhan, 1964: 23). This statement offers an epochalist and binaristic distinction between machine technology and automation, and about the eras when they were dominant. However, the major implication of his ontological and historical distinction is most apparent in the last chapter, ‘Automation’, where he valorizes a technological regime of automation as ‘liberating’ – freeing subjects (at work and in daily life) from a servility which he ascribes to the technological regime of the machine. That McLuhan frames his proposal for understanding media through this point about automation helps explain his inclusion of clothes, motorcars, and clocks as media. Of course, the discourse of emancipation through communication and media technologies was not a new one in the 1960s, although it was being embraced particularly enthusiastically at that time through media and marketing representations of automation (as in the television show The Jetsons).

In part, the rest of this article considers the historical claim and virtue (then and now) of the freedoms afforded through everyday automated technologies such as the refrigerator. How is the smart refrigerator a new liberating (‘neo-liberal’) object? And, what rethinking is necessary and useful, against the history of Media Studies, to understand current ways of exercising freedoms and control through everyday objects, technologies (media?), assemblages, and spaces where objects and appliances such as the smart refrigerator are operationalized?

Question 2

To what extent do studies of ‘media’ and ‘the digital’ (particularly studies focusing on screen media) remain beholden to theories and an analysis of media power that make those studies ill-prepared for a critical study of refrigerators? How have theories and analytics of media power shaped how we have understood everyday technologies of automation?

This cluster of questions asks whether it is politically useful (now in particular) to propose ‘critical refrigerator studies’. Are you smiling? If so, why? Does the proposition or project seem ludicrous-unserious? Why is it so different from a critical study of media or a media culture – a critical study of digital television, Web-based news and information, literature or reading, or even computer gaming? Does making it a more serious study depend on following some of the familiar ways that media and power, or media power, have been explained – for instance, when media power is understood primarily in terms of communication and representation; in terms of the operations that occur visually through screens, listening, or reading; in terms of how certain media corporations control production; and in terms of the healthy circulation of information as tantamount to a healthy
‘public sphere’? These are not trivial pursuits but they are familiar ways of understanding the relations of media and power.

A critical refrigerator studies asks us to ask again, and to be reflexive about, the question, ‘What is Critique?’ (Foucault, 1997b). For Foucault, the question was inseparable from another question, ‘What is Enlightenment?’, and in that sense about the relation, as he famously elaborated it, between (technical and scientific) knowledge (truth-telling) and power (‘regimes of truth’). Foucault’s histories of the birth of the asylum, the clinic, and the prison explored this relation by examining constellations of technologies and techniques for administering regimes of power and knowledge. In part, a proposal about a critical refrigerator studies cuts two ways – toward a questioning about (or a genealogy of) the ways that knowledge about media has been practiced and deployed from the past into the present studies, and also how studying the refrigerator as a technology of power/knowledge opens up different ways of understanding media and media/power than has happened through an understanding of media/power that has fixated on particular examples of media and the digital.

My proposal for a critical refrigerator studies may not be easily recognizable with respect to most conceptions of, or templates for, critique or criticism, and particularly with respect to what often has counted as the serious critical practice of communication and media. ‘The question’, as Foucault (1997b) poses it, is not ‘through what error, illusion, oversight, or illegitimacy has knowledge [or I would add, communication] come to induce effects of domination’, but how might we develop a critical attitude (which is a political attitude) that examines the birth of the smart refrigerator within the late-Modern, post-Enlightenment question about ‘how not to be governed and to be governed in an alternative way’ (p. 278). For Foucault (1997a), critique emerges within a Modern, Enlightenment expansion of the field of the arts, sciences, techniques, and technologies of Liberal government: a critical disposition and way of thinking, which is political and moral, which he ‘would very simply call the art of not being governed or better, the art of not being governed like that and at that cost … the art of not being governed quite so much’ (p. 265). For Foucault (1997b), critique should never lose sight of that history of its emergence, even as the critical disposition recognizes that the object of critical reflection is provisional, ‘something whose stability, deep rootedness and foundation is never such that we cannot in one way or another envisage, if not its disappearance then at least, identifying by what and from what its disappearance is possible’ (p. 278).

A Foucauldian attitude and disposition would place the smart appliance, and particularly the smart refrigerator, within a historical relation of power/knowledge. For instance, it would examine how the refrigerator’s virtue and value are operationalized and made useful through a scientific and marketing discourse and reasoning about intelligent domestic appliances. It would examine how the smart refrigerator is operationalized within technological ensembles, assemblages, and networks of domestic appliances, sometimes in consort with portable personal devices. It would emphasize how the smart fridge’s operationalization and utility occur particularly as a technology of domestic and personal management, and thus, within a governmental reasoning and an arrangement of governmentalization. And, it would understand the smart refrigerator’s relation to everyday automation, or the automation of everyday life, in these ways.

Its historical work would proceed rather differently than the histories underpinning the discourse of media convergence, convergence culture, and digitalization. It would examine the smart refrigerator’s utility governmentally and as a technology of Liberal subjectivity/citizenship by considering its emergence from a history of technologies of government and freedoms, particularly from the home and kitchen. This follows, in part, Foucault’s proposal (in ‘What is Critique?’ (Foucault, 2009)) about governmentality that occurs partly through the ‘government of the home’ – as the pre-Modern idea of oeconomia (management of the household) became, in Modern,
Liberal states, one of many sites of governance. In addition to reflecting on this history, the project would emphasize the smart refrigerator’s relation to current scientific and technological experiments in everyday, personal government – provisional, always capable of disappearing – which operate politically as everyday exercises in Liberal citizenship. Although the project could chart that history through a history of objects and things which typically have fallen under the purview of media studies, it could be a heuristic for decentering those media objects and things – an archaeology and genealogy of the smart refrigerator’s becoming and political mattering as technology of governance and citizenship. It would examine how current knowledge about smart media is anchored in earlier scientific and critical rationalities, such as McLuhan’s attribution of automated media/technology as liberating – as freeing the individual from the chains of the ‘machine-age’ through an emergent regime of self-governing technique and technology.

The term ‘appliance’ is useful in this project because it increasingly became associated with domestic things, objects, devices, and tools in the 20th century. It is a strategic term in this project because it calls attention to the intersections of media and a panoply of domestic devices and tools. The emergence and adoption of the ‘domestic appliance’ mark the modernization of the household as a space of labor and leisure folded into a space of governance through the effective application of productivity techniques and technologies, organized through the framework of domestic science or home economics. Appliance, as human/machine activity, involves not just hard work but also discipline – the proper training in and mastery of techniques. The appliance expresses a technological relation between domestic management, domestic labor, and domestic leisure, and it also pertains to a history of automation – of managing the home through automated (‘labor-saving’ devices) and of training/shaping the house-keeper to manage a more orderly and efficient household through a science of automating human labor and technique. How, therefore, did domestic refrigerators emerge within a history of domestic appliance and domestic science? How is the smart refrigerator an outcome of a 20th-century history of a domestic science (a ‘home economics’) of domestic appliances, a set of techniques and technological management that became central to the organizational capacities of the government of the home, of the government of the self (‘self-government’), and of Liberal citizenship conceived/performed that way? How has the introduction of the personal communication device with an ‘app’ (application/appliance) furthered the Liberal virtue of individualization in home governance, albeit through a relatively new mediation of human and non-human self-governance?

Allow me to sketch a few historical reference points for examining the birth of the smart refrigerator in the 21st century – an archaeology and genealogy of automating the domestic sphere that help us understand the overlay, instabilities, and contradictions of residual and emergent, successful, and failed appliance:

- The invention of the domestic electrical refrigerator in 1913, the same year that Christine Frederick published The New Housekeeping: Efficiency Studies in Home Management. A series of Western Electric advertisements from 1915 to 1917 promote Western Electric’s domestic telephone through advertising a new ‘electrical home’, comprising various Western Electric home appliances (vacuum cleaners, irons, washing machines, and lighting fixtures). In 1915, the introduction of the self-contained electrical refrigerator. In the early 1920s, the sustained manufacturing of electrical, domestic (sometimes advertised as “automatic”) refrigerators.
- The programmable ideal emerges during the late-1920s and 1930s through the Radio Corporation of America’s marketing of its ‘Victrola with a Magic Brain’, but alongside the introduction of other domestic appliances, such as the pop-up toaster, the automated dishwasher, the automated washing machine, and irons and refrigerators with adjustable temperature controls. The emergent fashion of the ‘integrated kitchen’, whose color coordination of kitchen accoutrements represented a deepening interlocution of their operation as kitchen automation.
The normalization of the integrated kitchen and of the refrigerator-freezer in Western, particularly United States, households following the Second World War (and in the US ‘mass suburbanization’). The integrated kitchen is a performance stage constructed within a gendered division of labor through ‘labor-saving’, automated appliance. The programmable ideal about appliance (now programmable coffee makers) fits temporarily between the increasingly residual paradigm of standardized radio and TV programming and an emergent regime of remote controlling TV (governing at a distance).

After the late-1950s, an emerging architecture of the ‘bachelor pad’, mythologized through Playboy Magazine, as an alternative to the suburban kitchen managed through (the outcome of decades of) domestic science and home economics performed by women. The bachelor pad’s promise and aspiration of total programmability and automation as a ‘freeing’ of masculine subjects through automated kitchen’s articulation to a totally automated sphere of escape, including sound and video units (Hay, 2015). Contemporaneously, the birth of the La-z-Boy Chair as material support for TV-watching – an appliance for enabling a (typically male) subject who is not applying himself, or applying himself through remote control.

After the 1970s, reintegrating the kitchen (as a space of labor, leisure, and management for men and women) through self-managed appliance. The introduction and rapid, widespread success of the ‘Mr. Coffee’ appliance over the 1970s, as kitchen technology that can be programmed hours in advance (overnight, for instance). The normalization of TV in the kitchen, as part of an assemblage of kitchen appliance.

The reinvention of the kitchen during the 1990s through the normalization of the Microwave Oven, as central to a new regime of efficiency at home and from the kitchen. The standardization of transistorization of refrigerators, and the valuing of measured efficiencies in refrigerators use of electrical power.

The discursive formation and promotion of the 21st-century ‘smart home’ out of this history/genealogy of appliance, program, remote control, and everyday automation – and the place of kitchen/refrigerator innovation in it. For instance, the Mr. Coffee-appliance is reinvented in the 21st century as programmable from anywhere through a portable, personal device such as a telephone app.

Within this history, how might we understand the dominance of certain regimes of kitchen management through the interplay of emergent and residual appliances? How has this interplay made kitchen automation a matter of on-going technical training/knowledge and of the on-going management of problematizations of personal freedoms at home?

**Question 3**

*How do media such as the refrigerator matter within networks of freedoms and government? What might a critical study of the smart refrigerator as everyday automated appliance help explain about the current regimes of Liberal government and Liberal subjects/citizens/selves?*

Addressing this cluster of questions involves recognizing that self-government and self-control have been an on-going project accompanying Liberalism’s valorization of individual freedoms and the sovereignty of the individual – projects and programs (as Foucault has demonstrated) that are about refining the technologies and networks for the proper, healthy exercise of freedom in daily life. Foucault’s account of technologies of the self provides a long history (pre-Christian, Christian, and post-Christian) practices for maintaining one’s relation to one’s self – self-care, maintenance of a healthy self, self-fulfillment, self-improvement, saving oneself, watching over one self as a
matter of well-being, and personal welfare, all through the application of the arts and sciences, technique and technology, of self-discipline and self-government (Foucault, 1997a). That history’s relation to Liberalism, as Modern, post-Enlightenment reasoning about government links pre-Modern *ars* and *techne* with the Modern sciences of shaping (and self-shaping) a political being that is also an ethical being.

The political mattering of the reinvention of the domestic refrigerator (and the birth of the smart refrigerator) can be understood in relation to a long history of technologizing the self and to a Modern history of the liberal arts and sciences of self-government and of technologies of government and citizenship. From a related perspective, following the work of Chris Otter, how might we understand the ‘smart refrigerator’ through a history of ‘Liberal objects’ (Otter, 2007)? Otter casts the history of Liberal governance through the changing, reinvented machinery, devices and their networks that made possible certain kinds of political agency. Although Otter focuses on an array of objects that made possible the freedoms and governance of Liberal citizen-subjects during the 19th century, his project lays the groundwork for investigating the interplay of residual and emergent (domesticated, everyday) appliances, comprising a regime of smart devices that has enabled a kind of domestic agent, as ethico-political actor, to operate in and from the kitchen in the 21st century. Foucault and Otter also provide a basis for rethinking McLuhan’s 1960’s rationale about automation as a liberation from a servility to machinery and as the cultivation of new states of individual freedoms over the old social homogeneity of a machine age. McLuhan’s binaristic valorization of automation brackets how automation operates governmen tally – that is, ‘auto-mation’ as self-governing apparatuses and as technology of the self through everyday ‘appliance’ (i.e. applying oneself as ethico-political agent through everyday techniques and technologies of personal freedom and self-management). Automation is the making, producing, and putting in motion of a historical and spatial relation of freedoms and government, of self-managed agency and the regulated exercise of personal freedoms. The research question then becomes how a network and regime of automation, in this way, supports and is supported by networks of Liberal objects and agents (whether human or non-human).

The first ‘Internet Fridges’ were introduced at the turn of the 21st century, although they did not become a relatively standardized feature of domestic refrigerators until the 2010s – first, through touch screens mounted on the fridge’s exterior, and, more recently, through apps on personal, portable devices. Two of the most prominent examples of the current regime of (or at least experimentation with) intelligent domestic refrigerators are products of the Korean manufacturers, LG and Samsung – companies most known for their domestic and portable screen media. The LG fridge introduced in 2011 a feature called the Smart Manager, an interface which converted the fridge into a specific appliance within a network of applications – shopping, planning, monitoring fridge-content status (termed the ‘Refrigerator Manager’ and the ‘Food Manager’), programming, and information searching. Embedding a ‘Food Manager’ in a ‘Refrigerator Manager’ is nothing short of maximizing the potential of the kitchen as technological interface for organizing and tracking one’s everyday life as regimen and program for a healthy, efficient, disciplined consumer (of food in relation to other things/objects/knowledge). The Smart Manager was for a while an interface tool for an ensemble of LG media, though LG also attempted to situate it within an ensemble of smart kitchen appliances, promising that the user could ‘Touch the Smart Life’ by coordinating the operation of the smart fridge with an LG smart oven, smart dishwasher, smart vacuum, and smart laundry. Subsequently, LG converted the networking of these appliance ensembles through its ‘Smart Thin Q’ system, which makes a portable telecommunication device (phone, pad, laptop) and the STQ-app part of relay system among LG communication media: TV, PC, and the domestic appliances that all previously involved a body moving among the machines’ screens.
Samsung has promoted its contemporaneous contribution to domestic refrigerators as the ‘Family Hub’, an identity that claims (rather audaciously) the privilege once accorded to the TV-set in the mid-20th-century household, albeit before there were TVs and other media emplaced directly in kitchen activities. The Samsung Family Hub is designed with a 22-inch touchscreen on one of the refrigerator’s doors – a touchscreen so large that it appears to represent the functional convergence of kitchen appliance, personal computing, and entertainment media. One ad reinforces this conflation by claiming, ‘Once you close the [fridge’s] door, it [the fridge as hardware] becomes a touch interface’. Samsung’s publicity extols the fridge’s capacity to project music and video from the household’s other (Samsung) media systems. The publicity also highlights the possibility of personalizing the fridge through uploading ‘family’ and other personal photographs, making the screen potentially a replacement for the practice of personalizing and adorning the household fridge with magnet iconography. Another of the screen’s primary functions is a daily schedule and planner, whereby the Family Hub operates as a visible means of putting daily life in order and disciplining its subjects’ activities and pathways from the kitchen. The scheduling feature of the Family Hub also operates as a machinic governor (of the fridge and its human subject), issuing regular reminders (‘take out the garbage tonight’) and automating the operations of both human and non-human through the routine/regimen of an ‘everyday life’. Currently, the Samsung fridge with Family Hub is still marketed for a taste culture with economic and technological capital to adopt it into their management of daily life, but it potentially has become a template for a future regime of intelligent appliance in and from the kitchen. What I have described has mostly to do with the smart fridge’s political and governmental uptake in the present context – albeit for households that currently can afford it and currently value its managerial utility. However, it is fair to ask, and worth asking politically, what kind of future governmental state would be predicated on a broader or deepening normalization of the smart-kitchen ideal and practice through which the smart fridge currently operates – or whether the smart fridge can or will ever be articulated to an everyday life of governance and citizenship beyond its current states, geography, and home addresses?

There are several ways that this current genre of smart refrigerator, as Liberal object, matters in a new bio-political regime oriented toward ‘healthy lifestyles’, as a path to healthy citizenship. For instance, consider the linkage in the 21st century between the emergence of ‘lifestyle-TV’ programming about healthy diets (US Reality TV formats such as Shaq’s Big Challenge, Jamie Oliver’s Food Revolution, and The Biggest Loser, alongside TV channels such as The Food Network) which depend as much on a subject’s relation to screen and audio media as on a managerial ‘revolution’ through kitchen appliance – the fridge as everyday helper, coach, planner, tracker, and body shaper (Hay, 2015). In that respect, the fridge becomes integral to a biopolitical regimen and potentially a node or ‘hub’ in a network for guiding and shaping a healthy, and thus ethical, human subject. More than the sedentary user of the domestic TV and PC, the fridge potentially operates as a means of translating an ‘interactive’ media subject into an active lifestyle – an active agent of personal health at the point of consumption and on the go. The smart fridge, thus, has the potential for representing to oneself and through personalized automation a new means of freedoms and liberation but also self-discipline, everyday organization, and self-mastery, as healthy choice.

The critical posture toward the smart refrigerator that I am proposing is about how the incomplete-ness of citizen subjects is managed through everyday technologies for mediating personal freedoms and the government of the self-automating daily life. The project is, in that sense, about the management of a future, whole subject (a subject projected into a future), and thus, about the futurism and futurologies of governmental technology and personalized automation – a virtual or future tense achieved and activated through a ‘smart refrigerator’. The analysis also recognizes
‘bad government’ and the problem of the bad, faulty refrigerator (and the bad operator) – the smart refrigerator as the outcome of what Foucault might term governmental problematizations and breakdowns. This is, after all, one way of understanding how a long dialectical history of technical experimentation and failure or outmodedness (charted in Question 2) pertains to the birth of the smart fridge as an everyday automated regimen for checking and managing the potential healthiness and unhealthiness of a human body, and for laying the foundation of better personal government and healthier lifestyles in the future.

If Liberal government has been predicated on the sovereignty and liberties of the individual human being (who operates within regimes of automation), how should we understand the calculating autonomy of the algorithmic appliance – a non-human appliance that is self-managing? Although a study of the smart fridge as a Liberal object that is instrumental in networks of human and non-human agency from the kitchen and home needs to recognize the biopolitical project and failures targeting human organisms, it is also worth recognizing that the old formulations of Liberal subjectivity, even as Foucault explained that history of Liberalism, may now need to take stock of the algorithmic being and the ‘intelligence’ of Liberal objects/machines in liberally governing the freedoms and healthy conduct of human beings. Is it time, within the regime of the smart refrigerator, to rethink the political and governmental formula on which Liberalism and its (human) subject were born?

Locating the smart fridge within a history of Liberal objects, and the (partly biopolitical) problematizations which those objects were supposed to manage, also involves addressing the ecology of a life lived in the current states of domestic appliance. McLuhan’s Understanding Media proposed a study of media as an environment, and his writing influenced mightily a subsequent field of media studies christened, in his name, as ‘media ecology’. However, that vein of media study seems mostly ill-equipped to address the political and ethical significance of the recent LG refrigerator’s ‘A+ Energy Efficiency Rating’. The birth of the smart refrigerator and smart domestic appliance (their regime of automation in and of daily life) is inseparable from the historical problem of environmental waste, degradation, and ruin, particularly as a problem of everyday technologization and government of the healthy self. The 21st-century valuing of ‘efficiencies’ in domestic refrigerators ties the birth of the Smart Home and Smart Kitchen to a new genre of Liberal ethico-political agency: the Green Citizen. The efficiencies of smart, automated appliance (saving human and technological energy) promise to reduce not only personal financial but also ecological ‘costs’. Following the political and research interventions by Jennifer Gabrys (2011), Richard Maxwell and Toby Miller (2012), Sarah Pink (2012), and Yolande Strengers (2016), it is therefore worth asking where the history of domestic refrigerators, and the replacements of their out-datedness with new lines of intelligent domestic appliance, fit not only in a history of Liberal objects but also on the growing pile of ‘digital rubbish’ overtaking landfills. It is also worth analyzing the contradictions of the smart refrigerator’s political utility within the ‘wise’, ‘proper’, ‘intelligent’ appliance and government of oneself from the home as a Green Citizen.

Conclusion

The project of mobilizing a critical posture toward the smart refrigerator from within media studies may be more challenging than forms of critique that understand or that rely on media as primarily ‘communicative’. The smart fridge could be yet another object for media studies to demonstrate ‘convergence’ and to understand the entire world as mediated through communication. But the bigger challenge for media studies is recognizing a historical incapacity to recognize the profound hybridity of their objects of study – not only that portable phones, iPads, and video monitors are media objects but also that they are assemblages of materials and things which are operationalized
through networks of human and non-human agency. My concern is that studies of digital media will reduce the current design and use of the fridge to the Family Hub (i.e. to the fridge’s screen and its visualizing/communicating software). My concern is also that anything but that point of communicative interface remains a lesser or unserious means of understanding the current problematizations of Liberal governance and citizenship. My concern is that the smart fridge will get swept into the broad, epochalist pronouncements that we all are living in an overly or totally digital and automated environment – a pronouncement that follows, ironically, the spirit of McLuhan’s understanding of media, if not always his glee about living in that era.

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