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## **Space, Text and Selfhood: Encounters with the Personal Computer in The Mass Observation Project Archive, 1991-2004**

### **I ‘I confess that sometimes I resort to using the computer’**

Between 1991 and 2004, the anthropological organisation The Mass Observation Project (hereafter MOP) periodically asked its observers about the impact of information technology on reading, letter writing, and communications. In 2004, a Mass Observation respondent wrote:

‘I confess that sometimes I resort to using the computer using cut and paste techniques to write several letters at once.’<sup>1</sup>

Confess is a strong, emotional word. It evokes feelings of guilt, remorse, secrecy, and mischief. Its attachment to the act of personal writing via a computer interface indicates not only that the advent of the personal computer brought about a number of historically-specific changes in the way people scribed and composed their written communications, but also changed how people felt about acts of personal expression. Using The Mass Observation Project archive as its source base, this article illuminates the historically specific questions, tensions and possibilities surrounding the self that were brought about by the advent of the personal computer between 1991 and 2004. It makes three related interventions in the existing historical literature on late modern Britain: on the rise of the personal computer and how it contributed to a significant break in manuscript culture; on the ways the personal computer changed how homes were used and perceived; and that the era of graphical interactions with personal computers is a definable period of historical analysis.

Whilst we focus on encounters with personal computers, ours is not a history of technology. Historical studies of the computer have tended to be technology-centric: general histories of computing that focus on where invention occurred and who made it happen,<sup>2</sup> and work on specific societal interactions with computation, notably via the microcomputer, gaming, and Teletext.<sup>3</sup> Studies of this nature perform an important function, not least as building blocks for cultural historians and historians of science and technology who use encounters with information technologies to recover wider narratives of social change. Notable among these is work by Jon Agar on expertise and the UK Civil Service, Stephanie Schulte on the American teenager, Marie Hicks on gender and labour, Zoe Strimpel on courtship, and Niels Brügger on the World Wide Web.<sup>4</sup> Like these authors, we eschew technology-centric approaches to information technology in favour of historical analysis that focuses on people and their lived, collective and everyday experience of information technology. In particular, we focus on two aspects of these everyday interactions with computers – writing practices and the spatial geography of the home.

These interactions were shaped by a number of significant changes in the history of the personal computer (often shortened to PC). In 1980s Britain, the microcomputer moved from the hobby shop to the high street, ‘legitimising’, according to Tom Lean, ‘the idea of computers as consumer appliances’.<sup>5</sup> The culture of personal computer ownership that developed between 1991 and 2004 built on these foundations, whilst also responding to

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historically specific changes. In line with the observation popularly known as “Moore’s Law”, computing power simultaneously doubled in power and fell in price: personal computers that were expensive and few in 1991, were cheap and many by 2004. At the same time, two Microsoft computer operating systems—first Windows 3.0 and second Windows 95—contributed to the consolidation of interactions with personal computers around WIMP-like Graphical User Interfaces.<sup>6</sup> This blurred the ‘home’ computer with the increasingly ubiquitous ‘office’ computer, normalising the interfaces, software and hardware associated with Windows operating systems. As we shall see, this was an important development that made it difficult for Mass Observers to separate their feelings about office computers from their feelings about home computers. Shortly after the launch of Windows 95, improvements to network infrastructure and the falling cost of internet access caused a sharp growth in public use of the World Wide Web. This shift in the history of communications bisects the period 1991 to 2004, potentially disrupting its coherency.<sup>7</sup> However, seen through the lens of human computer interaction studies, this era of graphical interactions with computation is a defined historical period, distinct from both the era of textual interactions it had succeeded and the era of physical interactions—catalysed by the launch of the iPhone in 2007—that would follow.<sup>8</sup> Our research reaffirms the legitimacy of this periodisation and suggests that the advent of the Windows-like personal computer was as significant as the World Wide Web to negotiations of the self.<sup>9</sup>

The United Kingdom—where Mass Observation observers reside—was well placed to exploit the benefits of cheap personal computing consolidated around standardised interfaces. John Major’s Conservative government (1990-1997) and Tony Blair’s New Labour government (1997- 2007) accelerated the promotion of personal computer use in schools, at home and at work. The optimistic policy agenda and rhetoric of Blair’s New Labour fitted neatly with the excitement surrounding the popularisation of WWW and .com: as Alwyn Turner notes, by 1999 ‘eight million people in Britain had access to the internet, more than in any other European country’.<sup>10</sup> Soon ‘cyber-hype’ nomenclature—signalled by adding the prefix ‘e-’ to everything from commerce to culture—became prominent features of reports and briefings.<sup>11</sup> Whilst some New Labour’s e-Futurism was vacuous political posturing, it nevertheless set the tone: a wealthy, optimistic UK was to be networked and computationally astute.<sup>12</sup>

These national reimaginings fed into the local and the personal. In *The Second Self* (1984) and *Life on Screen* (1995) the social scientist Sherry Turkle underscored the impact of personal computers and network infrastructure—technologies governments promoted as positive vehicles of personal and collective change—on identity and self-making.<sup>13</sup> Whilst Turkle’s important contribution has enjoyed limited purchase among historians, ideas of ‘the self’ have. The work of Anthony Giddens in the early 1990s established the notion of a peculiarly ‘modern’ form of selfhood in sociological discussions. Since then a growing body of historians have explored the historical development of the self in the twentieth century. Their research has argued that rather than being a fixed, biological entity the self is constantly constructed by a range of social, cultural and discursive resources. Crucially, these resources themselves have a history. Matt Houlbrook has demonstrated the new possibilities offered by an emergent popular fiction culture in the 1920s to individuals constructing a sense of self through letter-writing.<sup>14</sup> Claire Langhamer has drawn on the work of Nicholas Rose to explore how the democratisation of the ‘psych-disciplines’ in the

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middle of the century provided new resources of self-understanding in relation to love.<sup>15</sup> Harry Cocks has excavated the link between changing sexual cultures and notions of a distinctly 'modern' reflexive self.<sup>16</sup> What unites these works is the idea that processes of self-making have been contingent on wider cultural and technological changes in British society. The periodical emergence of new modes of communication in the twentieth century, for example, has continually re-calibrated the material and intellectual processes through which individuals have constructed a sense of self. It is in this trajectory that we situate our research on the advent of the personal computer. There is a burgeoning historiography on the self that shows how the mode of communication, be it in the form of memoir, letter writing, community publishing, biography or autobiography, inflects the construction of the individual and collective subject.<sup>17</sup> Rather than focusing solely on the mode of communication, this article turns attention to the *means* of textual communication in a late modern context. It intervenes in and contributes to this historiography by arguing that the personal computer brought historically specific questions, tensions and possibilities to the process of self-fashioning.

While technology-based studies of personal computers can draw on voluminous evidential material in commercial archives, the public media, and contemporaneous cultural productions, locating sources which offer us an insight into the personal experience of computing is a more problematic task. In this paper, we make the case for the uniquely suggestive value of one particular source base: The Mass Observation Project archive. The Mass Observation Project started in 1981 and was the rebirth of Mass Observation, an anthropological initiative that existed between 1936 and the late 1950s. Both Mass Observation and MOP attempted to provide an insight into the thoughts, feelings and experiences of 'ordinary' people. Whilst Mass Observation employed a range of innovative, if perhaps eccentric, research methods, including listening in to conversations in pubs, confronting people in the street with questionnaires, and sending out 'Directives' where respondents were encouraged to write about a topical subject, MOP used only the latter method: it asked members of the public to respond to questions about a variety of social, political and everyday subjects ranging from 'football hooliganism' to the 'AIDS epidemic'. Each year since 1981 the project has issued three Directives to hundreds of UK-based volunteer writers, known as 'Observers'. Between 1991 and 2004, observers were periodically asked about the impact of information technology on reading, letter writing, and communications.<sup>18</sup> The responses to these directives—personal correspondences whose character, as we note below, differed vastly from one respondent to the next—form the evidential base of this paper. Within the same archive then, we have a range of views, modes of communication and methodological vantage points from which to access the experience of personal computing.

We focus on writing on personal computers and their location in the home for two reasons. Firstly, these were the principle subjects that the Mass Observers talked about in their responses to questions about the impact of information technology on reading, letter writing, and communications. Historical subjects are often formed more by historical actors other than historians – this is something we embrace. Secondly, we focus on these two aspects of computing because of the decisive shifts in everyday life they embody. The consolidation of personal computers around WIMP-like interfaces usable both at work and at home catalysed

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the second major break in the production of Western manuscripts. The first, which took place in the mid-seventeenth century saw a transition from scribal to print culture, a dethroning of hand copying that was replaced by machine copying. An outcome of this transition was a long tail of scribal thinking that came to define what historians and citizens alike perceive to be a manuscript. As Peter Beal writes in his influential monograph *In Praise of Scribes: manuscripts and their makers in seventeenth-century England* 'each manuscript is peculiar: it is physically and ontologically unique'.<sup>19</sup> But even in 1998, when Beal was writing, this was no longer the case: the born-digital manuscript—say a personal letter written using Word 97 on a personal computer using Windows 95 as its operating system—did not exist physically and was infinitely reproducible. This second break in manuscript culture, lucidly described by Matthew G. Kirschenbaum in his recent work on the production of literary texts,<sup>20</sup> ideally frames MOP responses between 1991 and 2004, written as they are as manuscripts, some by hand, some typed, some word processed. It was also—as we argue—a break that Mass Observers were conscious of.

In the place of physical manuscripts came the objects used to make them: noisy beige boxes, bulky flickering monitors, flashing sticky keyboards, and unruly electronic mice. By ascribing significance not to these objects but rather to the encounters people had with them, we can see that not only the ideas and processes associated with manuscript production but whole physical environments in both workplaces and homes were reorganised to accommodate these new objects. As the anthropologist Daniel Miller argues, things make us as much as we make things. This is especially acute in the home, where small changes—whether adopted or resisted—can be catalysts for substantial change.<sup>21</sup> And so, our study contributes to the understanding of technology in British homes, bridging between the social science of Miller and historical analyses of mid-twentieth century technologies such as radio, television, and central heating.<sup>22</sup> The paper, therefore, makes interventions in two areas: the history of writing and the history of the home. Placed alongside one another, these findings open up suggestive new questions for the heavily contested historiographical trope of the late-modern 'self'.

## II      Mass Observation

The Mass Observation Project archive presents a unique set of methodological questions. As Annabelle Pollen has argued, the rich, eclectic and consciously reflexive nature of the responses are a particularly fruitful source-base for social historians of late-modern Britain.<sup>23</sup> However, the perennial question asked of the MOP, according to Lucy Robinson, is whether the material is 'representative'.<sup>24</sup> Indeed, in spite of efforts made by the project's original coordinators, Dorothy Sheridan and David Pocock, to cover a range of class, gender, age and geographical variants, the project's sample is weighted in favour of middle class women aged over 50 from the south of England. This notwithstanding, Robinson maintains that more interesting questions can be asked of the archive if we eschew simply 'checking a tick box of representativity'.<sup>25</sup> Ultimately, the central problematic for our study is how this resource is best used by the historian of not only everyday, individual experience, but also wider cultural developments. Sheridan et al. argue that the material can be used in a way which moves beyond traditional notions of the 'typical' case study, as is often employed by

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qualitative researchers.<sup>26</sup> They outline the difference between a ‘telling’ case and a ‘typical’ case as follows:

‘The search for a ‘typical’ case for analytical exposition is likely to be less fruitful than the search for a ‘telling’ case in which the particular circumstances surrounding a case serve to make previously obscured theoretical relationships suddenly apparent. Case studies used in this way are clearly more than “apt illustrations”. Instead, they are means whereby general theory may be developed.’<sup>27</sup>

As such, the MOP responses we focus on do not illuminate ‘typical’ experiences of writing with and owning personal computers and our analysis of those responses do not make claims of representativity. Rather, these sources of personal experience allow us to uncover new ways of thinking about the relationship between technology, text, space and selfhood.

Social historians of late-modern Britain have sought to build sturdy methodological scaffolds to support their use of MOP, notably when attempting to recover ‘everyday’ and ‘ordinary’ experiences. As Louise Purbrick points out in her study of wedding presents, the observers themselves often self-identified as ‘ordinary’.<sup>28</sup> This claim to ordinariness, defined by an imagined common experience but also a position outside institutions of political and cultural influence, endows the MOP responses with a particular value when charting the personal computer’s graduation to the status of ‘ordinary’ in the 1990s. In this sense, we follow the lead of Rachel Hurley in approaching MOP ‘fully awake to its possibilities’ as a historical resource, rather than simply using it to offer a comparative snapshot of everyday life.<sup>29</sup> Borrowing from Ben Highmore’s theorisation of the ‘everyday’, we use MOP to not only elucidate the meanings of a social reality, but also to uncover the way sensual, emotional and temporal experiences interconnected and intersected.<sup>30</sup> Computers were things and did things – MOP ensures we don’t forget this when attempting to historicise their significance.

The evidence this paper focuses on were extracted from sampling responses to four MOP directives issued between 1991 and 2004. The first of these—the Spring 1991 Directive—was organised into two parts (a common feature of MOP directives). It received 486 responses.

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Part II was called 'The Uses of Writing and Reading' and it asked respondents questions organised into 12 sections, among which were:

- '4. When you write, do you need to be in a particular place? Do you have a special chair, table or desk? Do you write at home or at work? Do you have ever write while travelling or away from home?
- 5. Do you need to have a particular pen or type of paper? Do you prefer to type or word-process?'

The second directive we analyse is the Autumn 1991 Directive. It received 433 responses. Part II was called 'New Technology' and asked respondents questions organised into 8 sections, among which were:

- '2. Do you use a word-processor? At home? At work? Have you been trained? What do you use it for? [...] How well do you feel you use it? [...]
- 6. What piece of equipment has made the most difference to your (or your parents) lives? [...]
- 8. If you could afford it, which new piece of equipment would you most like to have?'

The Autumn/Winter 1996 Directive is our third source-base. It received 306 responses. Part I was called 'Using the telephone' with the questions under this heading spread across one-and-a-half pages. Pertinent to our research, the directive added in conclusion:

'What have I left out? Please write anything YOU think I should have mentioned. For example I'd like to ask you about **electronic mail** too as a [sic] know a very few of you begun using it regularly. If you have the time to write about your use of e-mail, and whether it has replaced the use of the telephone for you, I would be most interested.'

Fourth and finally, we examine responses to Part II of the Summer 2004 Directive on 'Letters and Email'. This directive received 188 responses. After some general questions about when respondents first started using email and how they used it in 2004, the directive asked a series questions organised under 5 sub-headings: 'Letters and Email', 'What you emails look like', 'Storing and filing', 'Rewards and problems', 'Texting/phones'.<sup>31</sup> Just as Lorraine Sitzia has shown to be the case for oral history research, the observers responses were shaped by the questions asked by the researchers. In this sense, the production of MOP material is a collaborative process, in which the researchers and observers negotiate a 'shared authority' over the testimony.<sup>32</sup> As such, the focus on writing practices and the home that the observers expressed was, in part, a consequence of how the MOP framed the subject of personal computers. But this does not undermine the historical value of the material – MOP investigators did not exist in a social, cultural and political vacuum. The directives themselves, their interests and assumptions, speak to the developing significance of personal computers in late-modern British society.

Mass Observers responded to these questions in personal and idiosyncratic ways. Some wrote discursive letters, others responded as they might to a survey. Some kept their

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responses short and to the point, others wrote at length and at tangents.<sup>33</sup> Some covered every question, others responded only partially. Some responded to every directive over a number of years, others wrote only fleetingly or over short periods of time. Some wrote their responses using a typewriter or word processor, others responded by hand.<sup>34</sup> The point is that there was no typical response to Mass Observation directives. Indeed, this was the intention of The Mass Observation Project organisers from the outset. As James Hinton notes, 'the directives were carefully formulated to allow correspondents to choose their own balance between opinion, observation and autobiography'.<sup>35</sup> It is this freedom of form, the personalised selection of tone, format and mode of communication, which makes the MOP responses such a valuable resource for historians of the self. And so whilst this paper could have used email archives to examine the making of text,<sup>36</sup> computing artefacts to examine the unmaking of the home,<sup>37</sup> and popular literature on computing to examine the coherency of its periodisation,<sup>38</sup> responses to MOP—part autobiography, part observation, and part opinion—are ideal for illuminating questions of self-understanding.

This paper focuses on what Mass Observers wrote in response to MOP Directives. In their answers to questions about the relationship between technology, text, space and selfhood, MOP respondents talked about how they made text, organised their homes, attempted to achieve a balance between work life and leisure time, archived documents and memories, learnt to use a computer (and who from), and engaged in social networks via electronic correspondence and web services. From these themes, this article focuses on how respondents discussed encounters with personal computers in the home and when making texts, using detailed analysis of a handful of telling cases whose tenor corresponds with overarching patterns. As the questions asked in each MOP directive were different, longitudinal analysis of the evidence is tricky. By eschewing a pursuit of such analysis in favour of using telling cases from the MOP archive, our approach illuminates questions, tensions and possibilities surrounding the self that were brought about by the advent of the personal computer.

### III      Making Text

To those who could afford one, the advent of the personal computer in the early 1990s offered a new means of creating text. For many respondents to the Spring 1991 Mass Observation Project directive on 'Uses of Reading', the benefits of computers for writing tasks were first encountered in the workplace:

'Given the choice I would use a word-processor for everything. We were provided with specially-programmed Amstrad 8512 models during my final years at work, and I grew to love them, but since coming home, and being unable to buy one at the present time, I have had to revert to my faithful Adler typewriter.'<sup>39</sup>

The use of a computer at work gave this retired journalist a taste of its potential, but like many in the early 1990s, he remained unable to afford one himself. Nevertheless, the

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emotional attachment that this respondent articulated, a 'love' of word-processors, was also a common trait amongst the Mass Observers:

'I'd love to own a word-processor, a simple P.C as is owned by one of my daughters would be splendid. I think my husband would enjoy using it as a computer so maybe one day my dream will come true. It would be splendid to produce all the writing I wanted with such ease'<sup>40</sup>

The words 'love', 'dream' and 'splendid' enunciated the strong appeal of the computer at this historical moment. Responses to 1991 directives were overwhelmingly positive and optimistic about the potential of the personal computer: the device elicited an emotional excitement which other forms of new technology—the theme of the subsequent Autumn directive—did not.

At this historical moment, it was the 'ease' of carrying out writing tasks that was invariably identified as the main virtue of computers. Whilst there were those who did not share this optimism, they were few and far between. Given the demographic of the MOP sample, this may seem surprising: as Robinson has noted, older generations dominated the pool of Mass Observers throughout the 1990s,<sup>41</sup> a demographic quite distinct from the young men who characterised excitement around home computing in the 1980s.<sup>42</sup> There was though, strikingly little sense of 'technological doom' articulated from these respondents. Generally, older respondents expressed a pervasive optimism about computers that stemmed from the belief that computers made writing 'easier'.

The capacity of computers to make writing 'easier' went beyond simply producing neater text. The phrase 'my mind works faster than my hand' cropped up a number of times when respondents explained why they liked to write on computers:

'There is a spell check on this machine. Also my mind works faster than my hand and I miss out letters. This machine picks up all my faults and corrects them. Thank you computer.'<sup>43</sup>

In this sense, computers were seen to have facilitated a significant change in the way people composed and communicated their thoughts—the movement between the idea and the process of textual articulation. The WIMP-like interfaces that were popularised by Windows operating system normalised the manipulation of text by clicking, dragging, highlighting, scrolling, and overlaying windows. And tools like spell-checkers enabled writers to produce text at a speed that was believed to be more in line with their 'natural' thought processes. As well as accuracy and neatness, computers were heralded as enabling a more efficient and intuitive process of turning thoughts into words.

But whilst the personal computer brought a number of benefits to the process of writing text, it also began to raise new questions about authenticity, authorship and etiquette surrounding 'the personal'. It is here that the contributions of personal computers to a perceived break in manuscript culture become apparent. For example, when in 2004 MOP asked Mass Observers how they wrote 'Emails and Letters', many voiced concerns about the impersonal

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nature of computer generated text. Some explained that they wrote 'personal' letters by hand and 'professional' correspondences on a computer. One former school teacher remained committed to the computer for both personal and professional writing tasks, but made use of Microsoft Word's font options to maintain the appropriate aesthetic:

'For business letters I prefer normal black Arial font, 10, 11 or 12 point, which is what I am using now in this response. For personal letters I use "simulated handwriting" in the form of black or bright blue Monotype Corsiva 18 point.'<sup>44</sup>

Whilst respondents made active efforts to preserve clear visual signifiers of the 'personal' nature of their correspondence, they also expressed an underlying anxiety about the implications of 'simulation'. In the 2004 directive, a number of respondents spoke of using a computer to create a template letter for a particular purpose—a Christmas letter sharing family news, contacting research subjects for a project—and then tailoring it for the different recipients:

'I also do Christmas letters on the computer, not because I do a newsletter, goes to everyone, thing but because I put down the basic year's events and then tailor each letter to the recipient.'<sup>45</sup>

For some Observers producing a 'template' letter for personal correspondences created anxieties about honesty and integrity. It may have been standard procedure when writing in a professional capacity, but certain tensions were felt when this strategy was applied to personal communications. This journalist explained that she wrote letters for her research projects on a computer:

'However I cheat with them as they are usually all of a similar nature. Using a computer it is easy to duplicate a standard letter and just add a few personal details to make each letter slightly different.'<sup>46</sup>

The words 'cheat' and 'duplicate' suggest a lingering sense of guilt. Like the responses in 1991, the computer's capacity to 'ease' the production of text was highlighted, but there were now quasi-ethical considerations to take into account.

It is apparent from the responses that the 'guilt' associated with 'duplicating' text on a computer was often articulated in a playful, tongue-in-cheek tone. Consider again, the way this teacher described using copy and paste for personal letters:

'I confess that sometimes I resort to using the computer using cut and paste techniques to write several letters at once.'<sup>47</sup>

While the respondent may well have used the word 'confess' in a humorous way here, the fact that using 'copy and paste techniques' was ripe for a joke offers an insight into the historical distance between then and the present day. Would many people today feel the need to 'confess' to copying and pasting text into emails or letters? In this way, the sense of guilt and playful mischief that was expressed in relation to 'copy and paste techniques' was a

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historically specific phenomenon. The practice was not possible with typewriters (which otherwise produced very similar aesthetic results) but would be largely taken for granted by 2018.

Ultimately, the tensions and anxieties that emerged around word processing, simulation, and copy and paste suggest that the process behind the production of a text were as important to its meaning as the text's content. Even if the aesthetic of computer generated text was deemed to be appropriate for 'personal' writing, it mattered to people that the recipient, and indeed the writer, knew of the time and effort involved in creating a personally unique manuscript.<sup>48</sup>

As we have seen, a manuscript cannot be unique and word processed: the latter precludes the former. And so it is telling that the notion that the decline of the manuscript equated to a dissolution of codes around 'the personal'—the move from Beal's 'physically and ontologically unique' letters and memos to the world of born-digital texts described by Kirschenbaum—also found articulation in the way Mass Observers spoke about printing off their letters and emails. In response to MOP's question about printing out hard copies in 2004, many of the respondents explained they simply did not. Lack of time and waste of paper were the reasons cited. Interestingly though, those who did print out some documents did so on the basis of emotional or personal significance:

'PRINT EVERYTHING OUT AND STORE IT?! What do you do all day? Flipping heck. I occasionally print some work things out ...I store them in folders on the system. But I have to confess to having printed out a fair few emails from my ex, but lost track of how to file them and so really they're just filed in my hotmail'<sup>49</sup>

There was one piece that I wrote about the reasons why I decided to leave my husband, and I considered that such a significant piece that I printed it and kept is and showed it to my parents (not convinced) and love (likewise) and mainly for myself in case I should forget! However that hangs about, there is no filing system for just a few odd pieces....<sup>50</sup>

It was not matters of finance and household 'business' that were deemed worthy of printing out, but intimately personal correspondences. The decision to print off emails was not motivated by a fear of the computer breaking or security concerns, but by a desire to physically preserve the record of a life lived, the sense that tangible, material records of personal lives were being rendered obsolete by the use at home of personal computers:

'I do wish that I printed more copies of my mail which I have done more of recently. I am keeping a record of the responses to the news of my pregnancy and it made me wish i'd printed out lots more stuff to look back on. Even work related emails. It gives you something to place yourself in time, what happened when and to whom and how you felt. So much detail of our everyday lives is lost through writing e-mail and texts

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and not notes and letters and small reminders at different times prompt so many other things.<sup>51</sup>

#### IV Unmaking Homes

What Mass Observers lost in physical traces of letters they gained in the physical presence of computers. Mass Observers spoke about their homes often and at length, and the word-processed letters that they reported producing were written on personal computers that were located in various places in the home: the dining room, the lounge, the bedroom, the study. Few of these computers were described as portable, rather they occupied fixed locations in the home. As a respondent wrote in 1991, their Amstrad 'does not like being moved around so I don't move it'.<sup>52</sup> In 2004 a 47 year old respondent described their domestic IT setup in comparably static terms:

'When writing a formal letter such as to our MP, I write it on my computer, using the Word programme, and then I send it to my husband's computer, which is attached to the printer, so that he can print it for me.'<sup>53</sup>

Having a place for a computer is historically specific. In 1980s Britain, the microcomputer made it thinkable for lounges and bedrooms to be rearranged to accommodate computers: even the television was co-opted.<sup>54</sup> Between 1991 and 2004, the growth of the Windows-like personal computers as an everyday home appliance made more drastic domestic rearrangements a common experience. It must be remembered that during this time laptops were prohibitively expensive and mobile phones were insufficiently smart. As a consequence, choosing where to locate a computer in the home was a significant decision. The responses to a question in the 2004 directive indicate that the choice to locate a computer downstairs was connected with a desire for the computer to be a flexible, communal object. To the question of the location of their computer, a former school teacher answered:

'Usually at the dining room at home which doubles as our office where the computer desk is located.'<sup>55</sup>

This response is indicative of a blurring of domestic boundaries experienced by Mass Observers that was created by encounters with the increasingly ubiquitous Windows-like personal computer. And whether this 'doubling' of domestic geography was a success could—another observer suggests—depend on the time of day:

'Letters written on the computer are typed up on the dining table in front of the living room, usually around tea time, or if it's a difficult letter, I'll wait until a quiet Sunday afternoon when I put on some background music to help.'<sup>56</sup>

If the fixity of the personal computer created tensions when other people were using the room for different activities—the inference here is that the dining room was not always

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sufficiently 'quiet'–then it follows that the positioning of a computer in a communal area could also create new types of competition around the use of a location and the objects within it:

'Where/When–At the PC, await til it's available, mainly during the day as the granddaughters hog it in the evening. The PC is in the lounge.'<sup>57</sup>

The sense here that group dynamics influenced the use of computers within homes is underscored by another respondent who noted that: 'I write work letters at the computer downstairs–a communal area. I write personal letters upstairs at my desk in the study'.<sup>58</sup> Here rather than specific uses of personal computers being tied to specific people, uses were constrained by the people likely to be found at a location. And if the inference is that the study in this particular home did not contain a computer, many respondents reported the opposite: indeed, for one librarian 'the study [is] where the computer lives'.<sup>59</sup>

Studies were mentioned in responses to a number of directives. 'I always write in my study and use my Amstrad word processor' wrote a retired teacher in Spring 1991.<sup>60</sup> Their response reminds us that it would be an error to elide the study with the personal computer: pens, paper, typewriters, electronic word processors, and microcomputers were all used in these locations before and after the rise of the personal computer. But if this respondent suggests a specific work-like function for this household location, it remained one that was undercut by politics of ownership: 'my study [...] my [...] word processor'. Glimpses of this recur in responses to the Summer 2004 directive. A mid-twenties office worker from Hackney responded that 'I always write my letters at either my work computer (in my office) or in my study at home'.<sup>61</sup> For this respondent letters, a 'work computer', an 'office', and a 'study' are all personal possessions. But for a married 41 year-old business analyst the dynamics of ownership were very different: 'I always use a word processor', they wrote, 'By default I write my letters in the study because that's where the PC is'.<sup>62</sup> Here a word processor, a study, and a personal computer are all neutral objects; only letters are personal.

Not everyone had a study and the presence of the so many studies in the homes of MOP respondents should not only remind us of demographic peculiarities of Mass Observers but also–more importantly–alert us to the class dynamics of computer ownership in this period: it was prosperous Britons who, by and large, were the 8 million with internet access in 1999 (around 14% of the population). Our Hackney based twenty-something concluded their thoughts on writing letters by noting 'I love having a study!'.<sup>63</sup> Middle-class, financially secure, and professional people were the kinds of people with the money and space to create a study. In this case and in the case of a number of fellow respondents, it was reported that letters were written in the study because that was where the computer was located. Unreported were the acts of creating studies and locating personal computers in studies that had already been made, decisions that shaped how homes were used. And whilst these experiences may not have been representative, they indicate that the personal computer was an object that remade every home it entered, changing–to varying levels of significance–the functions of lounges, dining rooms, and studies; introducing new tensions,

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constraints, and politics of ownership around both the objects themselves and the locations they occupied.

Some respondents resisted the introduction of a computer into the home. A female respondent to the Spring 1991 directive wrote that 'I would like a word processor but it is considered by the 'purse holder' that we haven't need for such a thing'.<sup>64</sup> The influence and identity of the reluctant 'purse holder' is further articulated in her response to the Autumn 1991 directive:

'Word processor; we haven't got one. It would be useful I feel but husband not enthusiastic about buying one. I would also like a computer but he says "Where would you put it?" I think he doesn't want the challenge of one being around.'<sup>65</sup>

Here we find that the personal computer is a challenge not only to male authority—the husband's ability or otherwise to master a computer is linked to his masculinity—but also to the husband's idea of what the home is: 'Where would you put it?' both gives authority for home organisation to the female respondent and overrules that authority with the suggestion that there is nowhere in the home for a computer. This observer's authority and freedom of choice was regularly undermined by her husband: in 1992 she reported that 'It annoyed my husband that I was doing "A silly course" and in 1993 that 'My O[pen].U[niversity]. course was known as "your silly course".'<sup>66</sup> He was, it seems, a bit of a naysayer. Nevertheless, this Observer's responses reveal that rearranging the home to accommodate a computer was considered by one household member as an unacceptable disruption to order that could portent to further substantial and unwanted change. That this disruption is ranked as comparable to one member of the household taking on a degree, is a fascinating insight into the perceived impact of the personal computer on domestic life.

Other respondents resisted the changes to the home the introduction of a personal computer had already brought about. We see this, for example, in the response of a 45-year-old careers manager to a question on email writing in the Summer 2004 directive. They wrote:

'I have a work email address and a personal one. It isn't a problem to have personal emails sent to me at work, but I prefer the 2 to be kept separate because my work is so overwhelming that it is one small way to keep some things in life separate and, if I can manage to resist the temptation to look at my work emails at home, I have a separate hotmail account for personal exchange.'<sup>67</sup>

Although a computer was not explicitly mentioned by this respondent, the perceived polluting effect of work email on home life is clear. As we have seen, as operating systems consolidated around the Windows-like WIMP interfaces, many aspects of encounters with personal computers at home and at work became indistinguishable. With the line between computing at home and at work blurred, the contemporary literature on workplace efficiency recommended that employers encourage employees to use computers at home. As C. A.

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Decker wrote in a 1999 paper published in the research journal *Computers in Human Behavior*:

'Home use, too, provides individuals with more confidence to perform. Using computers at home allows more time for use and opportunity to improve one's skill level.'<sup>68</sup>

As Daniel Miller argues, people subject the home—both a process and a battleground through which the self is negotiated—to carefully considered change, and one of the few aspects of that home we are empowered to control are the objects within it.<sup>69</sup> In this context then, the creation of 'a separate hotmail account for personal exchange' can be read as an act of resistance to the unmaking of the home, a reassertion of the boundaries between work and home that had been elided by the personal computer, and a rejection of unhome-like practices imported from the early-noughties workplace.

Anxieties over the domestication of computers were not new. But whilst in the early 1990s these anxieties were associated with consumer decisions, with making the 'right' choice of technology,<sup>70</sup> Mass Observers who challenged the domestication of the personal computer had—as we have seen—different motivations. Moreover, part of their resistance can be attributed not to the variety of personal computers on the market but rather to the changing functionality of the Windows-like personal computers they had, to the evolution of these things that Mass Observers had had let into their homes. The 1996 Autumn-Winter directive asked respondents about their use of email and the internet. One staff development officer responded as follows:

'Internet—We have this at work and it's mildly useful. I wouldn't have it at home because it costs a lot to be quite sad and sit alone at home.'<sup>71</sup>

Here then one emerging use of a computer—browsing the World Wide Web—was thought to have the potential to undermine the ideal of a happy communal home, to make it a hostile and lonely place. This is a striking assertion and runs counter to the positive and social experiences reported by the respondents we have encountered: a letter writer who used a computer on a table located in a communal dining-room; a grandparent who placed a computer in a living room for use by all the family; a woman who loved her study. But what all these respondents shared, whether or not they welcomed computing into their homes, was having experienced a process of reconciling their homes to the idea of the personal computer, to its physical presence, and to its changing functionality. As Daniel Miller writes 'People exist [...] in and through their material presence'.<sup>72</sup> And so these reconciliations were about much more than just the rearrangement of material objects in space, rather rearrangements to the home prompted by the advent of the personal computer changed respondents sense of self.

## V Conclusion

In the 1990s and early 2000s, the mass popularisation of information technology changed how we worked, played, shopped, managed our finances, fell in love, and organised

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revolutions. As Sherry Turkle proclaimed in 1995 'it is computer screens where we project ourselves into our own dreams, dramas in which we are producer, director, and star [...] Computer screens are the new locations for our fantasies'.<sup>73</sup> The Mass Observation Project, like many anthropological initiatives operating at the time, were eager to uncover how 'ordinary' people made sense of these changes, how their dreams and fantasies, their sense of themselves, were changed by encounters with personal computers. Responses to MOP's various directives on the subject suggest that personal computers altered two seemingly parochial and yet highly significant aspects of everyday experience: how text was made and how the home was organised. The ease with which correspondence and other texts could be written using a computer was generally received positively. Over time, as the efficiencies of using a computer to write, save, edit, copy, paste, and check spelling were normalised, narratives of ease and efficiency became uncut with concerns about the authenticity of writing on a computer. A disquiet around word processing creating circumstances in which writing was no longer personal and manuscripts no longer physical, tangible objects was articulated by the Mass Observers. These changes to textual production—an intimate, personal process of self-fashioning—recalibrated the processes through which the late-modern self was constructed. So too did encounters with personal computers, with objects whose presence and evolving functionality changed who used a dining room, living room, or study and for what purpose. The changes to the composition of the home and the nature of writing wrought by the emergence of personal computers ultimately revised the material and intellectual circumstances through which selfhoods were negotiated at an everyday level.

Encounters between people and computers in the MOP archive provide telling examples both of how textual production and the home changed between 1991 and 2004 and of the resistances—however small—to the remade self that accompanied these changes. The evidential base of our paper means that there is an important historical, geographical, class, race, gender, sexual orientation, and age specificity to these findings: MOP respondents between 1991 and 2004 were not only based in the United Kingdom but also overwhelmingly white, professional, middle class, female, straight, and over thirty years old. Whilst we could view this demographic peculiarity as a limitation, the fact that so many Mass Observers were women provides a counterpoint to the male experiences that have dominated studies of the history of computing. In short, their rich testimony tells a different story, one that points, for example, to the mid-1990s as a potential point of disjunction in the history of home computing, a moment when prior positivity towards the utility of personal computers gave way to anxieties over an erosion of the self brought about by a blurring of work and home computing and the sharp growth in personal internet access and use. Crucially, these anxieties were not created by the internet alone, but were developing in everyday interactions with personal computers in the years that predated the 'online revolution'.

This paper has intervened in multiple fronts: on the break in manuscript culture caused by word processing, on the coherency of the era of graphical interactions with computation, on the ways in which objects changed homes, and—most significantly—on the mechanisms of the late-modern self. It should be acknowledged that our research design will have, to some extent, directed the nature of these interventions. With a different approach to the material, we expect that alternative insights could be gleaned: for example, by focusing on *what* Mass Observers wrote about writing, this paper says little about *how* Mass Observers wrote, about

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the technological, material qualities of their responses to directives. Equally, by focusing on encounters *with* personal computing, this paper says little about what Mass Observers thought about particular models or brands of personal computers. Nevertheless, by bringing telling cases from The Mass Observation Archive to the fore, our work also prompts further questions, research and analysis. More work is needed to understand the class dynamics of these the changes we describe, for which historians will need to use sources of everyday experience other than MOP. Historians will also need to go beyond MOP to understand the ways different generations encountered computers. As we have shown, contrary to received stereotypes, the experiences of mid- to late-aged Mass Observers with respect to information technology were far from negative. But MOP tells us little about the encounters children and young people had with personal computers, groups often stereotyped as as enthusiastic about information technology as their elders are wary.<sup>74</sup> Finally, we anticipate that a thorough survey of MOP responses will lend itself to rich readings of the intersections between gender, sexuality, information technology and the self. In so doing, such work would build on pioneering histories of computing and identity that have emerged in the recent years.<sup>75</sup>

The advent of the personal computer between 1991 and 2004 introduced a new means of communication that, like those that came before it, re-calibrated their owner's sense of self. For Mass Observers this was in part because the personal computer disrupted the manuscript, fundamentally changing how people made text. But the personal computer was more than a communication device. It was also an object. And like any object it changed both the reality and perception of the spaces that it entered, in this case the home. Encounters with personal computers in The Mass Observation Project archive indicate that these changes were not merely superficial, rather they were central to conceptions of the late-modern self, creating historically-specific opportunities and anxieties that only the increasingly standardised personal computer could. In the midst of this standardisation, the World Wide Web grew sharply in prominence. Some Mass Observers whose responses we have examined described the ways in which the World Wide Web reconstituted their sense of self. Most, however, did not, and more work is needed to understand when and in what ways this latter innovation shaped who Mass Observers thought they were. Their near silence is, however, suggestive, for from it the era of graphical interactions with personal computers—or, more specifically, of Windows-like interactions that became synonymous with desktop computing—emerges as a definable historical period. Nothing underscores this more than a confession to using a computer to write a letter: an act that speaks volumes about the emotional and physical presence of personal computers, how those personal computers complicated everyday acts of expression, and the fine margins between perceiving innovation as useful and as undermining one's day-to-day sense of self.

### Acknowledgements

We thank audiences at the Science Museum Research Seminar, Web Archiving Week 2017, The Mass Observation 80th Anniversary Conference, and the Social History Society Annual Conference (2017) for their comments, questions, and reflections on our preliminary findings. We also thank Melissa Milewski, Sharon Webb, Rebecca Wright, and our

anonymous reviewers for their insightful comments on draft versions of this paper. All errors of judgement and fact remain our own.

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<sup>3</sup> Tilly Blyth, 'Computing for the Masses? Constructing a British Culture of Computing in the Home', in Arthur Tatnall ed., 'Reflections on the History of Computing', *IFIP Advances in Information and Communication Technology* 387 (Springer Berlin Heidelberg, 2012), 231–42; Tilly Blyth, 'The Legacy of the BBC Micro: Effecting Change in the UK's Cultures of Computing' (Nesta, May 2012), <http://www.nesta.org.uk/publications/legacy-bbc-micro>; Alison Gazzard, *Now the Chips Are down: The BBC Micro* (Cambridge, Mass.: MIT Press, 2016); Tom Lean, *Electronic Dreams How 1980s Britain Learned to Love the Computer* (London: Bloomsbury, 2016); Hallvard Moe and Hilde van den Bulck, eds., *Teletext in Europe: From the Analog to the Digital Era* (Gothenburg: Nordicom, 2016).

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<sup>5</sup> Lean, *Electronic Dreams*, 68.

<sup>6</sup> WIMP stands for 'windows, icons, menus, and pointer'.

<sup>7</sup> The World Wide Web was launched in 1991.

<sup>8</sup> Paul Dourish, *Where the Action Is: The Foundations of Embodied Interaction* (Cambridge, Mass.: MIT Press, 2001), 11.

<sup>9</sup> As Tom Lean notes the term 'personal computer' was coined in the 1980s to distinguish 'user-friendly [...] machines that arrived ready-built in a neat case' from 'hobbyist computers' (*Electronic Dreams*, 61). We use the term 'personal computer' in its popular 1990s British sense as observed in the Mass Observation Archive: that is, to refer to Windows-like computers that were used at home and at work, sold in the UK at places like the retailer PC World (established in 1991), and whose UK users bought magazines like *PC Zone* (first published 1993) and *PC Magazine* (first published 1992).

<sup>10</sup> Alwyn W. Turner, *A Classless Society: Britain in the 1990s* (London: Aurum, 2014), 512.

<sup>11</sup> Despite which ministers behind these reports and briefings were far from comfortable with new information technologies they espoused. For example, as Helen Margetts reported in 1999, a constituent may have been able to email their Member of Parliament, but in order to reply MPs were likely to print out the email, draft a response by hand, and have a secretary type up and email it; Helen Margetts, *Information technology in government: Britain and America* (London: Routledge, 1999), 7.

<sup>12</sup> For the 'Futurism' of New Labour, see David Edgerton, *The Rise and Fall of the British Nation: A Twentieth-Century History* (London: Allen Lane, 2018), 495–519.

<sup>13</sup> Sherry Turkle, *The Second Self: Computers and the Human Spirit* (New York: Simon & Schuster, 1984), Sherry Turkle, *Life on the Screen: Identity in the Age of the Internet* (New York: Simon & Schuster, 1995).

<sup>14</sup> Matt Houlbrook, 'A Pin to see the Peepshow: Culture, Fiction and Selfhood in Edith Thompson's Letters, 1921–1922', *Past and Present* 207 (2010), 215–249.

<sup>15</sup> Claire Langhamer, 'Love, selfhood and authenticity in post-war Britain', *Cultural and Social History* 9:2 (2012), 277–297.

<sup>16</sup> H. G. Cocks, 'Modernity and the modern self in the history of sexuality', *Historical Journal* 49:4 (2006), 1211–1227.

<sup>17</sup> See for example B. Jones, 'The Uses of Nostalgia: Autobiography, Community Publishing and Working Class Neighbourhoods in Post-war England', *Cultural and Social History* 7 (2010), 355–374, T. Woodin, 'Working-class writing, alternative publishing and audience participation'. *Media, Culture*

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and Society 31 (2009), 79-96, T. Coslett, C. Lury, P. Summerfield (eds.), *Feminism & Autobiography: Texts, Theories, Methods* (New York, 2000).

<sup>18</sup> In 1991, Haddon and Skinner argued that between 1981 and 1985 the British home computer "boom" changed the symbolic value of the home computer beyond hobbyist groups (Leslie Haddon and David Skinner, 'The Enigma of the Micro: Lessons from the British Home Computer Boom', *Social Science Computer Review* 9:3 (1991). It is unclear whether the absence of computing from Mass Observation Directives prior to 1991 reflects an unawareness of these developments or—contra to the findings of Haddon and Skinner—a determination that they were of insufficient significance to the lives of everyday Britons.

<sup>19</sup> Peter Beal, *In Praise of Scribes: Manuscripts and Their Makers in Seventeenth-Century England* (Oxford: Oxford University Press, 1998), iv.

<sup>20</sup> Matthew G Kirschenbaum, *Track Changes: A Literary History of Word Processing* (Cambridge, Mass.: The Belknap Press of Harvard University Press, 2016).

<sup>21</sup> Daniel Miller, *Stuff* (Cambridge; Malden: Polity, 2015).

<sup>22</sup> For example, David Hendy, *Public Service Broadcasting* (Palgrave Macmillan, Basingstoke: 2013).

<sup>23</sup> Annebella Pollen, 'Research Methodology in Mass Observation Past and Present', *History Workshop Journal* 75:1 (2013), 1.

<sup>24</sup> Lucy Robinson, 'Collaboration in, Collaboration out: the eighties in the age of digital representation', *Social and Cultural History* 13 (2016).

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<sup>26</sup> D. Sheridan, B. Street and D. Bloome, *Writing Ourselves: Mass Observation and Literacy Practices* (Cresskill, New Jersey: Hampton Press, 2000).

<sup>27</sup> Sheridan et al., *Writing Ourselves*, 107.

<sup>28</sup> L. Purbrick, *The Wedding Present: Domestic Life Beyond Consumption* (London, 2016)

<sup>29</sup> R. Hurdley, *Home, Materiality, Memory and Belonging* (New York, 2013)

<sup>30</sup> B. Highmore, *Ordinary Lives: Studies in the Everyday* (Oxford, 2011), 1-20

<sup>31</sup> The Summer 1984 Directive on Electronic Banking includes the question 'Do you have a computer?'. We have not examined responses to this directive as 1984 falls outside of the era of graphical interactions with computation.

<sup>32</sup> L. Sitzia, 'A Shared Authority: An Impossible Goal?' *The Oral History Review* 30 (2003), 87-101.

<sup>33</sup> Even within the same response to a Directive, Mass Observers often chose to write at great length in reply to certain questions, while writing little to nothing in response to others.

<sup>34</sup> During their time as Mass Observers, a number of observers started using word processors as a means of responding to directives. The impact of this on the structure, content, and form of their responses is beyond the scope of the present paper. See Rebecca Wright, 'Typewriting Mass Observation Online: Media Imprints on the Digital Archive', *History Workshop Journal* (forthcoming 2019).

<sup>35</sup> Hinton, *Seven Lives*, 2-3.

<sup>36</sup> For example, the Enron Email Archive. This archive contains ~600k emails dated between 1999 and 2004 that originated from the mailboxes of 158 Enron employees; Bryan Klimt and Yiming Yang, 'Introducing the Enron Corpus.', *Proc. Conf. on Collaboration, Electronic Messaging, Anti-Abuse and Spam* (2004).

<sup>37</sup> Such as arrangements of computers in domestic environments at the Geffrye Museum of the Home, London, or the Science Museum, London; for the latter, see Tilly Blyth, 'Information Age? The

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Challenges of Displaying Information and Communication Technologies', *Science Museum Group Journal* 1:4 (2015).

<sup>38</sup> Including user guides, magazines, and classic texts in computing such as Howard Rheingold's, *The Virtual Community: Homesteading on the Electronic Frontier* (Reading, Mass.: Addison-Wesley Pub. Co., 1993).

<sup>39</sup> Mass Observation Archive (University of Sussex): Replies to Spring 1991 directive [B1654].

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<sup>41</sup> Lucy Robinson, 'Collaboration in, Collaboration out: the eighties in the age of digital representation', *Social and Cultural History* 13 (2016).

<sup>42</sup> Haddon and Skinner, 'The Enigma of the Micro'.

<sup>43</sup> Mass Observation Archive (University of Sussex): Replies to Summer 2004 directive [D156].

<sup>44</sup> Mass Observation Archive (University of Sussex): Replies to Summer 2004 directive [C2256].

<sup>45</sup> Mass Observation Archive (University of Sussex): Replies to Summer 2004 directive [W633].

<sup>46</sup> Mass Observation Archive (University of Sussex): Replies to Summer 2004 directive [E2836].

<sup>47</sup> Mass Observation Archive (University of Sussex): Replies to Summer 2004 directive [W1813].

<sup>48</sup> While the personal computer asked new questions about how these processes were evidenced, it was not the first time that a new form of technology had been seen to create a distance from the idea of a manuscript. During the 1890s the use of typewriters accelerated rapidly. Contemporaries agonised, in turn, over the authenticity of type written correspondence, its lack of intimacy, and whether the anonymity made possible by personal typewriters might cause social problems; Friedrich Kittler, *Gramophone, film, typewriter* (Stanford: Stanford University Press, 1999), esp. 183-206. The rapid growth in the use of word processors by authors in the 1980s contributed to comparable anxieties around the polished-'too perfect'-look and feel of word processed manuscripts, the inability to distinguish between finished, unfinished or faked states of word processed texts, and word processed documents not representing the labour that had gone into them; Kirschenbaum, *Track Changes*, 33-50.

<sup>49</sup> Mass Observation Archive (University of Sussex): Replies to Summer 2004 directive [O2049].

<sup>50</sup> Mass Observation Archive (University of Sussex): Replies to Summer 2004 directive [T1843].

<sup>51</sup> Mass Observation Archive (University of Sussex): Replies to Summer 2004 directive [W2959].

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<sup>54</sup> Lean, *Electronic Dreams*, 67.

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<sup>68</sup> C. A. Decker, 'Technical Education Transfer: Perceptions of Employee Computer Technology Self-Efficacy', *Computers in Human Behavior* 15:2 (1999), 170.

<sup>69</sup> Miller, *Stuff*, 95-99.

<sup>70</sup> Roger Silverstone and Leslie Haddon, 'Design and the Domestication of Information and Communication Technologies: Technical Change and Everyday Life', in Robin Mansell and Roger Silverstone (eds.), *Communication by Design: The Politics of Information and Communication Technologies* (Oxford: Oxford University Press, 1996), 44-74.

<sup>71</sup> Mass Observation Archive (University of Sussex): Replies to Autumn/Winter 1996 directive [T1826].

<sup>72</sup> Daniel Miller, *The Comfort of Things* (Cambridge: Polity, 2008), 286

<sup>73</sup> Turkle, *Life on Screen*, 26.

<sup>74</sup> Studies of the encounters children and young people had will have lots to go on. 1990s academic literature in the field of education studies suggests that children both had and were expected to have very different encounters with computers to adults: see, for example, Susan Harris, 'Secondary School Students' Use of Computers at Home', *British Journal of Educational Technology* 30:4 (1999),

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331–39, and Neil Selwyn, ‘The Effect of Using a Home Computer on Students’ Educational Use of IT’, *Computers & Education* 31:2 (1998), 211–27. The hobbyist and videogame focus on many histories of 1980s computing have contributed to a rich understanding of the encounters children and young people had with personal computers at that time (Lean, *Electronic Dreams*; Haddon and Skinner, ‘The Enigma of the Micro’). And contemporary sociology is invested in recording the testimony of children: see, for example, Rachel Thomson, Liam Berriman, and Sara Bragg, *Researching Everyday Childhoods in a Digital Age: Time, Technology and Documentation* (London: Bloomsbury Academic, 2018).

<sup>75</sup> Nathan Ensmenger, “Beards, Sandals, and Other Signs of Rugged Individualism”: Masculine Culture within the Computing Professions’, *Osiris* 30:1 (January 2015), 38–65; Hicks, *Programmed Inequality*; Julianne Nyhan and Andrew Flinn. *Computation and the Humanities: Towards an Oral History of Digital Humanities* (Cham: Springer International Publishing, 2016).