The Tablet Book 8

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Tablets

Specific, Generic, Perfect?

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Introduction

This chapter uses the idea of 'perfection' to critically examine the tablet computer as a culturally-constructed object. The analytical terms used throughout the chapter, 'perfect', 'specific', 'generic', are developed from ethnographic research carried out in 2011-2012 exploring the introduction of tablets into a science laboratory. In this research the lab personnel I observed treated their tablet computers as infallible or perfect. The active voice – representing an active practice – is important here: the participants

did not simply think of their tablets as infallible, they *treated* their tablets as infallible. When the tablets failed to work as expected, the boundaries of the tablet object were tactically redrawn with the result that not-working elements were continually ejected from the perceived object. *The generic tablet, as the users constructed it, was perfect because its specific faults were removed.* Drawing on tablet users' understandings of their devices as perfect, I adopt perfection as a critical tool, firstly to understand the construction of the tablets in my study, and then to consider the intersection of specific technologies with more general cultural understandings of technology.

The chapter consists of three sections; an introductory section that outlines the specifics of the ethnographic findings; an outline of the analytical framework I develop based on those findings; and an application of the framework in a more general discussion of the role and operation of technology in society. Taking the argument full-circle, I contend that the more general analysis could be re-applied to the specific case study that constituted the ethnography.

Perfection of Tablets in the Lab

The idea that tablets are perceived as perfect was developed during ethnographic fieldwork carried out between November 2011 and August 2012. Using a combination of interviews and non-participant observations, I studied the planning and implementation stages of a project that saw a large UK University science-teaching laboratory 'go paperless' and adopt tablet computers.[1] The case study focused on chemistry and biology undergraduate teaching labs, which moved into a newly-renovated building in which all disciplines would work together in one large lab, housing around 200 students and staff at a time. The main lab is an open-plan space around 30 metres square with high ceilings. The project had been first mooted in

Summer 2010, and was given the green light in June 2011. The paperless lab opened in September 2012, and I refer to it in this chapter as 'the Lab'.

Before my analysis of tablets in the Lab, it is necessary to outline some of the site-specific reasons that tablets were adopted. Moving from existing laboratories into this newly converted building involved bringing together various disciplines which had previously been housed in individual labs, including biochemistry, chemistry and microbiology. All laboratories are subject to biocontainment precautions, designed to protect workers and the environment from potential harm arising from working with biological agents. This is controlled in the European Union by an EU directive (EEC, 1990), and by similar legal directives in other territories. It is commonly referred to as the 'biosafety level' or 'containment level' of a lab, and ranges from 1 to 4 depending on the materials being used in the lab, with 1 being the least and 4 being the most potentially hazardous. In the case study, the Lab was containment level 2, meaning that no organic material can be allowed to leave the lab space without being treated. The main practical consequence is that porous material like paper cannot easily be moved in or out of the lab. This was the primary reason that the Lab would be 'paperless', and the basis upon which the decision to use tablet computers was taken.

After various testing stages, the specific model chosen was the Samsung Galaxy Tab 10.1. The decision to choose an Android device highlighted the contradictory ways in which ideas of freedom and openness are deployed when discussing open source software (Goggin, 2012, Ippolita, 2013, Ross, 2013). The fact that the tablets ran an Android operating system was used to argue that the majority of apps would (and should) be free. This was used by the IT management as a justification for the choice of Android

tablets over other models, especially Apple iPads which were often the preference of fieldwork participants. While ostensibly empathising with free/open/libre software movements, this attitude stemmed primarily from a desire to reduce the monetary cost of the paperless system. Ironically, one attraction of the openness of the Android operating system from the IT Manager's perspective was that it could be used to apply rigorous system management to the tablets, preventing students from downloading apps or changing system settings. Thus the openness of the operating system was regarded as beneficial because it could be used to give the IT manager absolute control over students' use of the tablets.

I developed the analytical term 'perfection' in response to participants' treatment of the tablets. By 'perfect' here I mean the contradictory perception that tablet computers are infallible even when they fail. This perception was observed repeatedly during the ethnography, and was displayed most obviously during the planning and implementation stages of the Lab, in particular emerging in the process of making decisions about which tablet would be best to adopt. As part of the ethnography, I conducted 10 extended interviews with key participants in this process including the IT manager who oversaw the adoption of tablets, two key academic faculty members, four technical staff, and two members of staff who would train others to use the tablets in the Lab; an IT trainer for staff and a librarian for students. I also observed three key lab tests in which tablets were given to groups of students, around 70 in total, to use in existing laboratory sessions. During these lab tests I also informally interviewed various members of staff, faculty and students. While the faculty and staff can be considered stakeholders in the process, the students were all third-years who were soon to graduate and would not be present in the following academic year when the tablets were to be fully introduced. My key observation during

this process was that each time the tablets were found to be problematic, inadequate or even unsuitable, the participants always found an external feature to blame. Some of these instances are outlined in Table 1, and I will take the first instance from that list as an illustrative example.

One requirement for the tablets in the Lab was that they should be able to be used for notation of chemical equations, including superscript and subscript. This facility was not included as standard in the apps that were pre-installed on the device, and was also found to be a rare feature of other note-taking apps. Users' reactions to this flaw were first observed in a testing session in which the newly-purchased tablet devices were given to an existing undergraduate biochemistry class in the old laboratory before teaching had been moved into the new space of the Lab. The lab test involved giving the thirty or so students a tablet computer each and asking them to complete a normal laboratory class using the tablet and no paper. I observed the lab test itself and a meeting immediately afterwards in which the lecturer, three demonstrators and three technicians who had been involved in the lab test discussed their thoughts and feelings about the tablets. During these observations, I noted that the fact that the tablet would not easily support superscript and subscript was met with some ridicule. One technician's response to the lack of superscript was simply that it was "irritating."[2] A demonstrator quipped wryly that "the chemists won't like this!" A senior technician noted that "it's odd" that such a complex technological device could not be used for fairly basic scientific notation: "how curious!" Yet the target of this ridicule and disbelief was not the tablets themselves. The testers could not believe that the notation *apps* did not include this functionality. The discussion on this topic focused on the need to search the app store for a suitable app. One student commented to me that the tablets worked 'fine', but "we need an app just for this lab",

emphasising the tablet's potential to work well despite actually saying that the tablet was not suitable in the lab. In other words, the tablet itself was not seen to be at fault; it was the app that was 'lacking'. For every problem encountered in the planning stage, a similar shift of blame occurred: the tablet computer was treated as infallible and external factors were blamed for its shortcomings (see Table 1). The way that users made this division between the tablet itself on the one hand, and external factors on the other, is key to the analytical framework that I outline in this chapter. The perceived division between a generic material object and its specific apps is key to understanding how users conceive of their devices. The terms 'generic' and 'specific' were not used by participants, but my analysis of the problems encountered during the planning and implementation of tablets in the Lab shows that this conceptual split organised their responses, and was invoked each time a problem was encountered and the tablets did not work as expected.

Table 1 lists other instances of the tablet failing to fulfil a requirement, the explanation given, and the party blamed (either explicitly or implicitly during interviews and non-participant observations). Primarily, problems encountered using the tablets were blamed on a lack of infrastructural support either from the University or external organisations or on a lack of suitable apps. In the latter case, 'app developers' were invoked as a coherent and accountable community of people with a responsibility to provide a wide range of useful apps for various purposes. Taken as a whole, the problems encountered in the Lab can be analysed to reveal a particular understanding of the tablet object. The tablet computer, discursively constructed in discovery and resolution of problems in the planning stages of the Lab, is a generic device that is let down by specific elements (Table 1).

Table 1. Problems encountered in implementation of tablet computers

Based on findings of participant observations and interviews in the Lab 2011-2012		
Problem	Explaination	To Blame
Cannot type super- and sub-script on the devices	Lack of (free) apps that support sub- and super-script notation	App developers
The tablets sometimes struggle to connect to the Internet	Inadequate Wi-Fi infrastructure in the building	IT Support / the Institution
The tablets aren't easy to type on	Not found the right keyboard app	App developers
	Not found the right kind of stylus	Physical accessory designers
	Users need to get used to using the devices	Users
The note-taking system doesn't interact well with the University's VLE	The browser does not support the same functions on the tablet as it does on PC	Browser / app developer
Cannot live stream video and audio simultaneously	No company will underwrite tablets to broadcast and receive live AV simultaneously	Software companies
The newest version of Android does not support the preferred browser	The code was never updated	Android / the open-source community

In the following section, I develop this to show how users in the Lab engaged in tactical redrawings of the boundary of the tablet. Alongside a description of this process, I will outline my analytical framework by using the terms 'generic' and 'specific' to describe the working and not-working aspects of the tablets, and the term 'perfection' to describe the overall perception of the tablets that this redrawing achieved.

Development of analytical framework

The particular design of the tablet computer makes this new media object particularly suited to the contradictory perception of being perfect and at the same time flawed. To elaborate the complexities of this perception, I structure my argument in terms of *generic* and *specific* aspects of the device.

In the Lab, the tablets were perceived as perfect: their failures were systematically deferred to external processes or technologies so that the tablet object was perpetually regarded as faultless. I will describe the mechanism by which this contradictory perception operates, going on to offer an explanation for why this contradiction is supported. I am also concerned to understand the clear differences between users' perception of the tablet ('what the tablet is') when it was working, compared to when it failed to work as desired. In the Lab, I observed a significant split between the perception of the tablet when it was working and when it failed. I characterise this difference in terms of a split between generic and specific elements of the tablet object. My argument focuses on the moment that the tablet computer does not work as expected. This resonates with Bill Brown's assertion that "We begin to confront the thingness of objects when they stop working for us" (2001, p. 4). This relates also to Silverstone and others' discussion of the social construction of media technologies and

their growing invisibility as *technologies* through processes of acculturation (Silverstone *et al.,* 1992). This idea has more recently been taken up in an inverted way in glitch theory and the new aesthetic with the contention that glitches and errors can open up a critical space (Menkman, 2011; Sterling, 2012; Watz *et al.,* 2012). *In Error: Glitch, Noise and Jam in New Media Cultures,* Mark Nunes argues for the critical potential of errors in computational systems:

> Occasionally, though, error slips through. In these moments, error calls attention to its etymological roots: a going astray, a wandering from intended destinations. In its 'failure to communicate,' error signals a path of escape from the predictable confines of informatic control: an opening, a virtuality, a *poiesis.* [...] While often cast as a passive, yet pernicious deviation from intended results, error can also signal a potential for a strategy of misdirection, one that invokes a logic of control to create an opening for variance, play, and unintended outcomes (Nunes, 2011, p. 3).

While this approach focuses on the critical potential for errors and glitches to make visible the material and political nature of computational objects, the response to error that I describe in this chapter is different. I argue that, far from taking up the invitation to relish the error or glitch or fault, tablet computer users in the Lab responded to unexpected failures of their devices by tactically redrawing the boundaries of the object so as to *eject* the faulty element, going to some lengths to maintain the idea that the tablet computer itself is a perfect object. In this case, the glitch does not have the traction that authors such as Nunes identify, provoking a re-building, rather than a détournement. The majority of this chapter deals with the mechanism by which tablet users deal with the faults and failures

of their devices, returning to the question of the political implications of this analysis in the very final section.

When it was working as they desired, users in the Lab treated the tablet as an unproblematic and neat self-contained object consisting of the material device itself and its associated operating system, apps, files, settings and so on. The complexities of the device were unexamined as long as it did what participants hoped or expected it to do. In Borgmann's terms (Borgmann, 1987), the working tablet can be viewed as a commodity that users unproblematically consume; distinct from the material technology of the tablet device. I will continue to use Borgmann's terms and his distinctions between the 'commodity' and 'device' throughout the remainder of this chapter. Users knew that the object was part of a larger assemblage, as shown through acknowledgements that some files and systems that were being used were actually 'in the cloud'. The cloud metaphor, however, was either entirely unexamined or understood to be merely a metaphor, depending on the technical knowledge of each participant; it was never examined in any detail. As long as the tablets worked as expected, the device was treated as a 'black-box' object of which the user knows the (expected) input and output but does not understand (or does not wish to understand) the processes in between (Latour, 1986, pp. 1-4). When working as expected, the tablet was treated as a simple, understandable, self-contained object. This sense of the object was perhaps informed by the idea that the tablet used eventually in the lab by students *would* be a fixed object: the system management added by the IT Manager preventing 'unwanted' changes from being made and limiting the device to a specific range of uses.

When the tablet failed to work as expected in the Lab, such as in the examples shown in Table 1, users negotiated these problems by enacting an

interesting conceptual split. They split the device into a generic object and its specific features. This conceptual splitting occurred every time the tablet did not work. It is most easily illustrated if we return to the example of an app failing to work as expected, for instance with the notation apps in the Lab that did not include superscript and subscript functions. This was initially observed in the testing session mentioned above. Before the lab test, of the group of seven participants (one lecturer, three demonstrators, three technicians), one was very enthusiastic about using the tablets in the Lab, two were quite dubious and the other four had no strong feelings either way. The consensus afterwards was that the lab test had gone well and the tablets would be both feasible and useful in the Lab. When the inability to use superscript and subscript was raised, the participants discussed ways to address the problem. The main suggestion was that they needed simply to search for more apps, as the 'killer app' (this phrase was used) must be 'out there'. This idea was supplemented by the suggestion that a suitable app would surely be made soon, as lack of superscript would be a common problem for anybody wishing to use tablets for notations of this kind: the participants need merely wait for an enterprising developer to create the app they wanted. In this example, the specific element 'notation apps' was perceived as faulty. In blaming the specific apps, the participants tacitly framed the generic tablet as blameless – leaving the black-boxed tablet safely unopened. The splitting of the tablet into generic and specific was observed in the instances outlined in Table 1. In each case, the tablet that began as an unproblematic commodity was split into a generic object 'the tablet' which was never blamed, and a specific aspect that was found to be at fault. While working as expected, the tablet was a simple commodity that just worked. When it failed, it was split into generic and specific elements, with the generic tablet still working while the specific aspect had failed. A consequence of this repeated conceptual splitting was that the tablets

remained flawless. They were infallible – or not the problem – even when they failed; in my terms, they were perfect.

I have argued that this perfection is maintained by the splitting of the tablet into generic and specific aspects. This language is intended to reflect the material characteristics of the tablet object. The physical object that I take out of the box when I buy a tablet computer is not designed to do anything in particular: it is generic. Of course, there are some apps that are native to the operating system of any device, so that the tablet in effect comes 'pre-loaded' with a range of apps. This determines the initial functionality of the device to some extent. The majority of tablets, including the Android devices used in the Lab, come with an 'app store' pre-loaded, so that the user can download more apps. The tablet's particular functionality comes from its apps, each of which is designed to do something specific. The tablet is represented as a generic object which is not designed for a specific function, but for many. This is illustrated most emphatically in the case of the Apple App Store which boasts "There are over 475,000 apps that turn your iPad into anything you want it to be".[3] Whether this means that tablets are understood to do many things or do nothing at all depends on how and where the boundaries of the object are drawn. Are the apps part of the object, or are they external features? My research suggests that these boundaries are perceived to be flexible and are conceived of differently in different situations in order to support an overall perception of tablets as perfect. If an app, designed to perform a specific task, does not perform that task adequately, then it is at fault. Conversely, the tablet, not designed to do anything in particular, logically can never do anything wrong. When working, the tablet object is clearly faultless. When failing to work as expected in a given task, it is still faultless thanks to the split between generic and specific which perpetually shields the tablet from blame, maintaining its perfection.

Considering the tablet in the Lab in terms of early ANT, it is quite easy to undo the naïve ontology that users applied to the device and argue that both the generic object and its specific elements are part of the same assemblage. ANT enables the researcher to 'see the device', not as a discrete object that works or does not work, but as the immediate material instantiation of an assemblage of actants. These combine to give the user an unproblematic experience where their tablet 'just works'; for ANT this is the black box, for Borgmann the commodity. However, while ANT is a useful way to understand the tablet object as an object 'containing' a multitude, it does not reflect users' perceptions of tablets in the Lab. Users did not seek to engage with the device in all its material reality; they actively consumed it as a commodity, aggressively cutting through its complexity to construct a simple object. Tactically redrawing the boundaries of the object, they were able to maintain its perfection, its cohesion as an object, and to evade the contradictions that they would otherwise have to confront.

These initial observations were drawn from a specific case study, but I argue that the splitting of the tablet objects into their generic and specific aspects relates to a broader sweep of technological practices and can be developed into a critical framework that can be used to think through aspects of technologies and their instantiation into everyday cultures more generally. I do not argue that this split occurs in the same way in every use of every technology. I do argue, however, that this split is common and can be observed not only in specific contexts such as the Lab, but also in other more general contexts – and is also evident in advertising and marketing, which I address briefly in the following section. Anecdotally, it is found in common examples from everyday life, such as when a tablet computer fails to retrieve a user's emails due to poor Internet connection and the user blames 'the Internet' in some abstract way, leaving the actual tablet

blameless. It can be argued indeed that this split is not simply common but general in an overarching cultural sense. The remainder of this chapter will outline my claim that this split manifests a logic that underlies shared cultural understandings of individual technologies and is inherently political.

Using 'perfection' to connect technology's specific and generic forms

In the final section, I address the reasons why the tablet is regarded as perfect, arguing firstly that the material properties of tablets are particularly suited to supporting this conception and secondly that this idea maps onto a cultural fetishization of technology that is invoked via a similar split between generic (perfect) technology and specific (fallible) technologies.

In the Lab, I observed that the working tablet is a black-box in which the assemblage that allows it to work is invisible, while the not-working tablet makes this assemblage visible and splits it. As soon as any element of the tablet assemblage fails, it ceases to belong to the (working) tablet and is therefore necessarily ejected from the object. This is the split that users deploy to maintain the idea of a generic (perfect) tablet computer and a specific (fallible) element. The split that users perform when the tablet fails indicates a nuanced understanding of the object and its boundaries. When working, users give little or no thought to the assemblage that comprises the object. The object is understood to 'contain' (in an unexamined sense) all of the features and elements that make it a working object. Users have no need to consider the existence of distant data centres that house the material substantiation of their files and settings, nor the material and immaterial communications infrastructures that allow data to be transferred between the tablet computer and other objects. The boundaries of the object are taken to be those of the simple physical self-contained object in which all of the functions of the tablet take place.

In giving a detailed explanation of the mechanism by which users actively and reactively construct the tablet object in order to maintain its perfection, I have not touched on the question of motivation. Why do users perform this nuanced conceptual switch, why make tablets perfect? As each user's experience is clearly different, any attempt at a definitive answer to this question will evidently generalise and be incomplete. In the Lab, there was evidence that the institutional politics in that particular case meant that the tablets were discursively constructed in a fetishized and celebrated position that meant their perfection was guaranteed. In the ethnography, this type of institutional politics was most evident in what I observed as a general determination to make the tablets work in the Lab. This seemed to stem from a general acceptance by the faculty, staff and students that they would inevitably be using the tablets next year, so had better make the best of them. This was striking bearing in mind that my observations took place during the trial and planning period of the project, ostensibly aiming to test the feasibility of the tablets. The most relevant reason for tablets being maintained as perfect in the particular case of the Lab was hinted at by two interviewees: one technician based in the lab, and one librarian who would be giving students general training in using tablets. When asked why the tablets were being used the following academic year, the technician gave a sardonic response: "because the Vice Chancellor had a great vision of an amazing new Lab full of happy students all paying thirty thousand pounds a year." The librarian made an equally candid comment saying that he had noticed recent "tablet mania" in the university as a whole, saying that "all the bosses have been given tablets and told to use them in meetings." The University's substantial and somewhat risky investment in this flashy technology could easily be met with internal hierarchical or public disapproval, and perhaps the participants needed to treat the tablets as perfect to prevent the humiliation of a failed 'innovative project'.

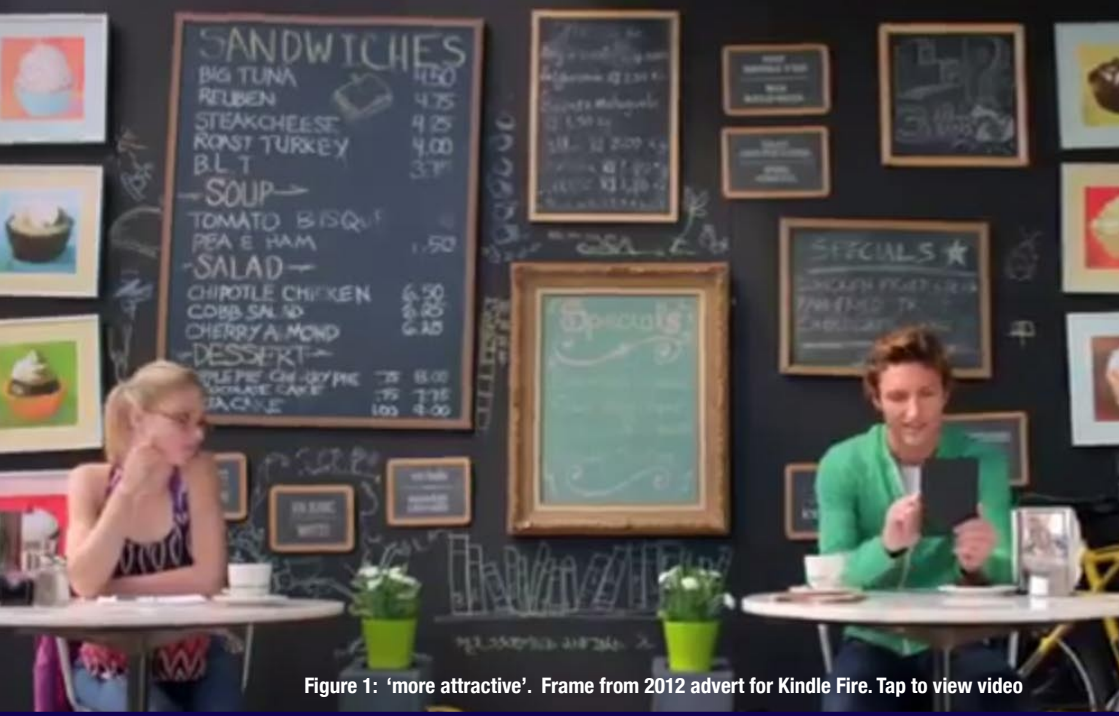

Figure 1: 'more attractive'. Frame from 2012 advert for Kindle Fire. Tap to view video

Anybody who has bought a tablet computer may be similarly invested in protecting the reputation of the device, preferring to blame inadequate apps or dodgy wireless signal when the tablet fails to work rather than admitting that their extravagant purchase is flawed. Issues of different types of institutional, personal and emotional investment may well be influential in many cases.

Marketing campaigns present their commodity as something of a perfect device that makes us more attractive [Figure 1], better at our jobs [Figure 2], more connected to loved ones [Figure 3] – or present tablets (sometimes ironically) as Godly devices [Figure 4]. It would be foolish to ignore the cultural significance of these discourses on the perception of an object such as the tablet computer, each undoubtedly contributing to the constitution of tablets as rather extraordinary technological objects. Yet I believe that a more productive critique can be brought to bear on these objects if we go beyond the idea of tablets as 'wonderful' commodities and

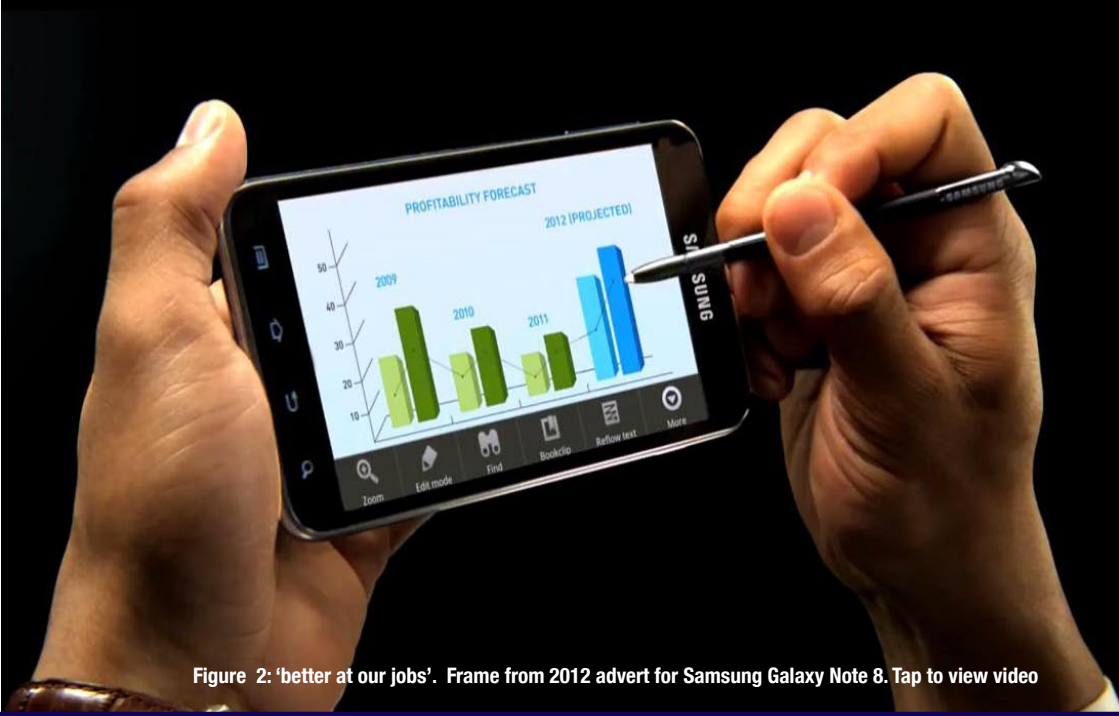

Figure 2: 'better at our jobs'. Frame from 2012 advert for Samsung Galaxy Note 8. Tap to view video

instead think of them as 'perfect' objects. Not because they *are* infallible, nor because they do the things that advertisers would claim. I use the term 'perfection' to capture the idea that tablets perfectly embody a cultural understanding of technology which is based around the split between generic (perfect) and specific (fallible).

This generic (perfect) and specific (fallible) split precedes the perception of any given cultural object. I argue that this split is inherent in a technological rationality that guides our understanding not only of technological objects but of technology's role in society in general. The notion of a split between generic and specific has been elaborated elsewhere, although not in these terms. In Ellul (1964) the specific machines and in particular the specific methods that we adopt in society add up to a general technique. Postman (1993) proposes three taxonomies, in each of which the use of specific technologies are treated as manifestations of the general technological order: tool-bearing, technocracy and technopoly. Marcuse (1982)

Figure 3: More connected to our loved ones. Tap to view video.

distinguishes between "technics proper (that is, the technical apparatus of industry, transportation, communication)", in my terms ' specifics', and "Technology, as a mode of production, as the totality of instruments, devices and contrivances which characterize the machine age [which] is thus at the same time a mode of organizing and perpetuating (or changing) social relationships, a manifestation of prevalent thought and behavior patterns, an instrument for control and domination" (Marcuse, 1982, p. 138), or in my terms technology in general. Borgmann (1987) argues that "Technology becomes most concrete and evident in (technological) devices, in objects such as television sets, central heating plants, automobiles, and the like. Devices therefore represent clear and accessible cases of the pattern or paradigm of modern technology" (1987, p. 3). Although each of these authors makes their own particular arguments about technology, they share a theoretical conceptualisation that incorporates a split between generic technology as a more or less overarching social structure and specific technologies as instances of that structure.

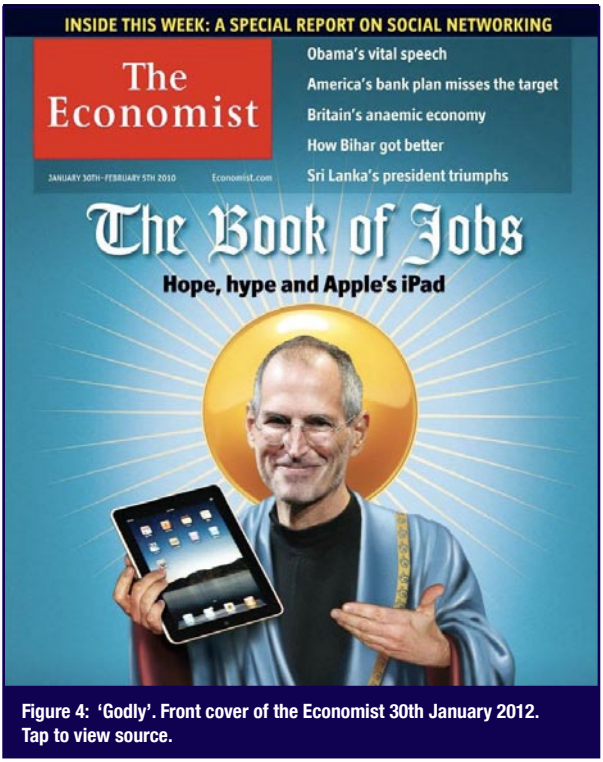

Figure 4: 'Godly'. Front cover of the Economist 30th January 2012. Tap to view source.

On a scale more comparable to the current examination of tablet computers, Bell and Dourish (2007) give this split a teleological inflection in their idea of a 'proximate future' which can be read as an idea of a reachable perfection in computing design (general) that is aimed towards in the material design of current technologies (specific). Dourish and Bell (2011: chapter two) argue that Mark Weiser's (1991) article *"The Computer for the 21st Century"* set a rhetorical tone of progress in ubiquitous computing "toward a proximate (and inevitable) technological future" (2011, p. 23).[4] The idea of a 'proximate future' incorporates a split between generic and specific that operates in terms of a well-defined conception of perfection: where specific technologies are fallible and generic technology (in a proximate future that may or may not be achievable) is perfect.

According to this framework, perfection is a measure of the gap between specific technologies and their final, perfect instantiation, which would form

and be formed by a perfect general technological landscape. As such, each iteration of a technology becomes a 'better' specific as it reaches closer to the teleological endpoint of perfection. The strength of the concept of the 'proximate future' is that it captures the ever-receding nature of perfection as something always on the horizon, constantly being reached towards but never achieved. The latest iteration of a technology is only a 'better' specific in relation to previous models, but not in terms of its distance from the endpoint of general perfection. Old models get further away from perfection, but new models never get nearer. This can be observed in the consumerist cycle of new models of mobile devices. The *iPad Air*, released in November 2013, is the best specific instance of the *iPad.* But so was the *iPad with Retina Display,* released in November 2012. As was *the new iPad,* released in March 2012. Each new iteration is better than the previous model. But the newest specific technology is held at a consistent distance from the generic perfect technology that it is framed as aiming towards. *This explains how a once-perfect object can become fallible.* The marketing discourses used to sell tablet computers frame 'working' within a sense of perfection that means 'working at maximum possible speed, at the minimum possible physical size, for the current technology'. So according to the marketing, the old model is not just inferior – it has stopped working. And what happens to elements that aren't working? They are ejected from the previously black--boxed generic object, they become specific, and therefore fallible.

We can see here that the way that 'flaws' are invoked in each case is directly involved in the framing of perfection. The marketing discourse invokes a sense of perfection as the fastest, smallest possible object. But this is only one way to frame perfection. The mechanism that I have described above, where flaws are accounted for and dealt with by splitting the object into

specific and generic elements, allows users to reject the idea of perfection represented by marketing or any other discourse. A user who feels that their 1st-generation iPad works fine and does not need to be upgraded is engaging with an alternative idea of perfection than that posited by the marketing of ever-faster, ever-smaller devices. By engaging with different versions of perfection, users can assert non-hegemonic values, in a way that resonates with Nunes' assertion that the glitch moment can create an opening for variance and play (Nunes, 2011). As argued above, the reason that the moment of failure of tablets in the Lab did not open up such alternative ways of understanding can be explained by the institutional politics specific to that case study, where users were subject to pressure to maintain the hegemonic perfection; the idea that their tablets were infallible.

To return to the case in point, I will restate the claim that tablet computers are perfect. But not in the sense that marketing aims to convey, nor in the sense observed in the Lab; that they are infallible. Rather, tablets perfectly embody this split between specific and generic. As well as being positioned as a specific (fallible) technology that fits into a generic (perfect) overarching technological system, tablets themselves are split. As I have discussed above, tablet users engage in tactical redrawing of the boundaries of the object in order to maintain the device as a generic and perfect commodity. Faults encountered are blamed on elements of the previously black-boxed assemblage. These elements, in the process of being blamed, are ejected from the generic object and positioned as specifics and thus fallible. The tablet computer, conceptually split by users to maintain its infallibility – its perfection – is thus a perfect manifestation of the generic/specific split that also exists at a more generalised level, framing specific technologies as fallible, and general technology as perfect.

It is important to note that 'perfect' as I employ it to describe this generalised split does not (necessarily) mean 'good'. Rather, perfection refers to a totalising and complete instantiation of a technological rationality. And I emphasise the phrase 'a technological rationality' in the previous sentence, to indicate that this technological rationality can take many different forms. What 'perfection' looks like is an ethical question and a question of politics. Specific technologies are framed in ways that tend towards a generic and perfect solution. But it is always a politically-determined perfection, and one that is changed by the way that specific technologies are used, constructed, framed and thought about in everyday life. The general technology that is a perfect overarching logic is necessarily bound to specific technologies and the ways in which we understand them to be fallible. The relationship between the specific and generic was manifested in the Lab in the tactical decisions that users made in redrawing the boundaries of the object to maintain its generic perfection.

Users' decisions in framing their technological objects as perfect, and the definition of perfection that they invoke, therefore have important social implications. The ways that tablet users in the Lab made nuanced and tactical choices to maintain their devices as perfect not only constructs a particular idea of the device; these choices build a world, they construct a particular technological rationality that frames the role of all specific technologies. Ideas of perfection are being played out and fought over repeatedly in these everyday tactical decisions. In the first instance, to describe tablet computers as perfect might seem to play directly into a consumer culture that fetishizes such technological objects. But this is not necessarily the case. In treating tablets as perfect in this way, we recast users as active subjects in a technological world in which perfection is a motivating rationality, but one that is constantly created in the present.

Rather than tablets manifesting a generic predetermined technological rationality, tablets and other specific technological objects become a site of the design and creation of a continuously contested idea of perfection.

Notes

1. For the sake of anonymity of the participants, the University has not been named. All names of people and buildings have been changed. Job roles have also been changed to an equivalent that describes the role and level of seniority where appropriate.
2. Quotations in this section are taken from research fieldnotes.
3. http://www.apple.com/uk/ipad-air/app-store/ (accessed 8th December 2013).
4. It might be noted that Weiser's article appeared in several of the papers presented at the Tablet Symposium, which was the origin of this e-book. This promise of perfection pervades academic treatments of tablet computers as much as cultural understandings.

Bibliography

Bell, G. & Dourish, P. (2007) 'Yesterday's Tomorrows: Notes on Ubiquitous Computing's Vision,' *Personal and Ubiquitous Computing,* 11 (2), 133-143.

Borgmann, A., (1987) *Technology and the Character of Contemporary Life.* Chicago: The University of Chicago Press.

Brown, B. (2001) 'Thing Theory,' *Critical Inquiry,* 28 (1), 1-22.

Dourish, P. & Bell, G. (2011) *Divining a digital future : mess and mythology in ubiquitous computing*. Cambridge, Mass. ; London: MIT Press.

EEC, O.J.o.t., (1990) COUNCIL DIRECTIVE of 26 November 1990 on the protection of workers from risks related to exposure to biological agents at work (seventh individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC). *In* Eec *ed. 90/679/EEC. 1-12.*

Ellul, J. (1964) *The Technological Society.* New York: Vintage.

Goggin, G. (2012) 'Google phone rising: The Android and the politics of open source,' *Continuum: Journal of Media and Cultural Studies,* 26 (5), 741-751.

Ippolita, (2013) *The Dark Side of Google.* Institute of Network Cultures, Amsterdam 2013.

Latour, B. (1986) *Science in action : how to follow scientists and engineers through society.* Milton Keynes: Open University Press.

Latour, B. & Woolgar, S. (1979) *Laboratory life : the social construction of scientific facts.* Beverly Hills: Sage.

Marcuse, H., (1982) 'Some Social Implications of Modern Technology,' In A. Arato & E. Gebhardt (eds.) *The Essential Frankfurt School Reader.* New York: Continuum, 138-162.

Menkman, R., (2011) *The Glitch Moment(um)*. Amsterdam: Institute of Network Cultures, Amsterdam.

Nunes, M., (2011) 'Error, Noise, and Potential: The Outside of Purpose,' In M. Nunes (ed.) *Error: Glitch, Noise, and Jam in New Media Cultures.* New York:

Continuum, 3-26.

Postman, N. (1993) *Technopoly : the surrender of culture to technology.* New York: Vintage.

Ross, D. (2013) 'The Place of Free and Open Source Software in the Social Apparatus of Accumulation,' *Science & Society,* 77 (2), 202-226.

Silverstone, R., Hirsch, E. & Morley, D., (1992) 'Information and communication technologies and the moral economy of the household,' In R. Silverstone & E. Hirsch (eds.) *Consuming Technologies: media and information in domestic spaces.* London: Routledge, 15-31.

Sterling, B., (2012) An Essay on the New Aesthetic. *Wired. Beyond the Beyond.*

Watz, M., Chayka, K., Minard, J., Borenstein, G., George, J. & McDonald, K., (2012) 'In Response To Bruce Sterling's "Essay On The New Aesthetic"', *The Creators Project.*

Weiser, M. (1991) 'The Computer for the 21st Century,' *Scientific American,* 265 (3), 94-104.

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