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Digital technology, work extension and acceleration society

A published lecture by Professor Judy Wajcman

The topic of my talk today, the relationship between technology and time, is a very long-standing interest of mine. I started academic life as a sociologist of work and so I was brought up on Marx and Fordism, and the role of technology in increasing productivity by setting the pace of work. I was very influenced by historians' writing about how integral the spread of the mechanical clock was to the rise of the factory system and the commodification of labour under industrial capitalism. From punch clocks and timetables to the assembly line and the rise of scientific management, work became marked and measured by clock time.

In other words, this literature taught me that the character of time changes through history. Why? Because clock time, indeed the entire concept of the hour, is itself a historical construct that, over the course of several hundred years, became associated with a particular form of economic production, which we call capitalism. The phrase 'time is money' is as old as capitalism itself, but as we see now with the gig economy and shifts to new kinds of revenue-making on the internet, the relationship between time and money in capitalism is constantly changing.

But, if we had to describe the quintessential experience of time consciousness in the twentieth century, what we might refer to as our modern temporality, it would be linear, chronological, clock time.

It is against this background that I became intrigued by the fact that everywhere nowadays we hear that time is speeding up: that the pace of everyday life is accelerating. From high speed trading to speed dating, the world seems to be spinning ever faster. We have more and more digital devices and yet everyone complains about how busy they are. Time is now at a premium.

At the core of this acceleration argument is the idea that, if digitalization is transforming how we work, live and communicate, then surely the tempo and texture of our social time has also changed.¹ In other words, if the material conditions of everyday life are profoundly altered by ubiquitous digital technologies, then surely this has altered our subjective, lived experience of time.

Indeed, this claim, that we now live in a high-speed society, is commonplace in contemporary social and cultural theory, and in popular discourse. This new time is variously described as *timeless* time, *instantaneous* time, *networked* time and even *itime*. According to Manuel Castells, for example, we are witnessing the end of the linear, clock time of the industrial age, and entering a whole new epoch in which time disappears. The speed of digital technology is literally annihilating time: life is now a frantic race as we multi-task and multi-live by means of technology to, Castells (2010) says, 'install ourselves in perennial simultaneity and simultaneous

ubiquity'. These sentiments are expressed so often that they are taken for granted, rarely questioned or examined.

In this talk, I want to examine this claim about the acceleration of everyday life in the digital age. Is the pace of life really faster and what is the role of technology? And how do we account for the paradox of having more and more time-saving technologies that seem to result in us having less free time? And, most importantly, how did acceleration, and the endless pursuit of optimizing time, come to signify the zeitgeist, the quintessential experience of modernity, and what are the political implications of this?

But, first, let me elaborate on the relationship between technology and time, the subject of my recent book *Pressed for Time*. Not so long ago, in the 1980s, at the dawn of the microelectronic revolution, we were supposed to be heading for a post-industrial leisure society. We talked seriously about the need for courses to teach people what to do with their excess leisure. Now we find ourselves in a digital age and, instead of time being abundant, we have a shared experience of time poverty.

The iconic image that abounds is that of the harassed citizen, head down on screen, always rushing. Machines were supposed to make our lives easier. Yet we hear constant laments that we are pressed for time, and that the pace of everyday life is accelerating. We have more technology than ever before, and yet everyone complains about how busy they are.

So we endlessly vacillate between regarding digital devices as the cause of time pressure and turning to them as the solution.

Let us examine this paradox. Now, if we believe the cyber gurus of Silicon Valley, this speed will make our lives better by making us more efficient, allowing us to do many more things, faster and simultaneously. Digital devices are sold to us as timesaving tools that promote an exciting action-packed lifestyle. There's a technological fix for everything.

The apps for better time management are endless. Self-logging bracelets, that track everything, from heart rates and sleep patterns to mood fluctuations, enable us to monitor our activities and thus. Amazon's Echo, which has recently been released in the UK, features the personal assistant, Alexa, who can play songs, do maths, set alarms, keep track of your exercise, and organize your calendar. And even though she is just Siri on a stick, as one *Guardian* journalist put it, people are lusting after her, calling her a 'wanton temptress'. It is all marketed for a busy life on the move.

Moreover, according to Stanford's *Artificial Intelligence and Life in 2030* report (AI100 accessed August 1, 2016), exercise apps will soon not only propose a schedule for exercise 'but also suggest the best time to do it, and provide coaching to stick to that schedule' (p. 29). This is interesting to me because it would involve

making moral judgments about priorities. It is as if the messy business of everyday life is amenable to algorithmic improvement.

Indeed, hardly a month goes by without a new book or newspaper article bemoaning our current state of busyness and distraction, advising on how to deal with digital addiction. In all these books, the hyper-connectivity of digital devices is blamed.

According to Tim Wu, a leading commentator on Net Neutrality, we are so distracted by social media that 'attention' has become the new scarce resource for business. In *The Attention Merchants* (2016) he argues that modern media have always been based on the reselling of human attention to advertisers. But today's media are built on a model of 'free stuff' in exchange for the ingestion of advertising: you pay for free content and services with your time.

And it is a lot of time - Facebook's 1.7 billion global users spend an average of 50 minutes a day of Facebook's sites and apps. Moreover, the compensation is lousy: Wu calculates that we users are being paid a rate of 60 cents an hour for watching ads. The problem isn't simply that attention has been made into a commodity, it's that it's so undervalued. Attention is precious and we should not part with it so cheaply and so often.

The standard solution to these problems is a digital detox, go off the grid and lock up the machines, and return to a more authentic, natural state. Now, of course, there is a Californian company called 'Digital Detox' that runs weekend holiday camps where, upon arrival 'campers pass through "tech check" where their phones are locked away and handed back to them at the end of the weekend'. Their tagline is '*Disconnect to reconnect*', but I can't help wondering how many of them get back on Facebook on Monday morning and boast about how they lasted a whole weekend off the grid! I read recently that Arianna Huffington's new company, *Thrive Global*, aims to turn even sleeping well into the corporate world's most celebrated productivity tool.

So the first thing to say is that much of the writing on the relationship between technology and time pressure tends towards technological determinism (although every scholar nowadays claims not to). We are seen as simply hostages to the accelerating logic of machines. It is as if technology *itself* is inevitably driving the fast pace of life.

In my book, I argue that the contemporary imperative or compulsion of speed is as much a cultural artefact as it is a technological one. That if we feel rushed and pressed for time, it is because of the priorities and parameters we set ourselves rather than the machines per se.

Let me explain. I am closely associated with what is known as the social studies of science and technology or STS. This field has for many years challenged the

mainstream view of technologies as neutral, value-free tools that simply drive changes in society.

Instead, we argue that *all* technologies are inherently social, that they are crystallizations of society: they bear the imprint of the people and social context from which they emerge. In other words, we shape technologies and then they shape us. Therefore, we understand and experience time with and through the machines we have built, and it's we who make sense of and give them meaning.

So it follows that it is a mistake to consider acceleration as a uniform process dominating all aspects of contemporary life. This vision attributes far too much power to technology itself. What is actually missing from these *grand* narratives is the temporal in the sense of everyday lived time - structured in particular economic and political contexts. Too often, speed-up is discussed as if we all have the same experience of time pressure, and as if time is an individual resource, rather than a collective accomplishment.

Both these points have implications for the relationship between time and work, so let me elaborate.

Let us take the example of information overload and email. I have done a lot of research on how professionals and managers use IT and I am very familiar with the endless estimates about how much time is wasted doing email. I regularly go to conferences where geeks are competing to design more sophisticated email filter systems to deal with this problem, as if it is a technical problem that has a technical solution.

A lot of money is also being spent on designing ever better electronic diaries. I was at a conference in Washington recently and all the executives got out their smartphone calendar apps and told me that, in Silicon Valley, managing time is the big issue! I can see that, but I'm not sure they have the right idea.

What I found in my own research is that the fact that we feel the need to respond to email quickly is not due to the speed of data transmission, or the frequency of communication, but because of collective norms that have built up about appropriate response times. The spread of smartphones certainly does facilitate and extend expectations of perpetual availability, but people at different levels of the organization respond differently, using a range of technologies and, over time, customs are established as to when its appropriate to email, phone or text.

Within management studies, scholars like Stephen Barley and Wanda Orlikowski have been heavily influenced by STS approaches. They have developed what they refer to as a sociomaterial or socio-technical perspective to study what happens to organizations undergoing technological change. To quote Wanda (2007) '*every organizational practice is always bound with materiality*'.

One of my favourite articles by Barley and his colleagues (Barley et al 2011) is on information overload, where they found that email has become symbolic of work stress. That is, that the way people express their frustration with long working hours nowadays is to complain about having too much email. It is much easier to focus on email than on countless meetings and having too much work. Interestingly, they also describe our endless ambivalence to technology, so that they say: 'the more time workers spent on email, the more overloaded they felt, but, the more messages they dealt with, the more they felt they could regain control and cope'.

Similarly, an excellent study by Wanda and co-authors (Mazmanian et al, 2013) reveals how professionals like lawyers complain of being on call 24/7, and yet how much their identity is now bound up with precisely this availability.

What emerges clearly from such studies is how much an individual's ability to resist the pressure of perpetual availability depends on the institutional context. In other words, that this is all this is predicated on power relations.

Compare the policies of Volkswagen and Daimler in Germany (where they have strong works councils) about banning email at weekends, and even automatically deleting emails sent during holidays. [apparently the Daimler email says that the person you are sending this to is on holiday and this email will be deleted — if it's important, send it again after the person returns]

If you work for Google, then it's a different story. Eric Schmidt and Jonathan Rosenberg's book *How Google Works*, literally has a section called "Overworked in a good way". Here they say that work-life balance policies are insulting to smart employees. They have worked with young moms, who go completely dark for a few hours in the evening and then, around 9pm, the emails and charts start coming in and we know we have their attention.

The work culture they advocate is one in which you always have too many interesting things to do. While they acknowledge that parents have to make sacrifices, their view is that it is your 'lifestyle decision'. Even vacations are discussed primarily as a means of raising creativity and productivity while countering the effects of burnout. The main point of rest is to excel at the office.ⁱⁱ

It is no coincidence that the quantified self-movement, that takes time consciousness to a whole new level, was born and nurtured by Californian geeks. For the moment, however, there are still important national variations in extreme work cultures.

A few years ago, Jeremy Schulz (2012) published extensive research on what he calls the 'hard work commentaries' of professional men (in finance, law, engineering) in France and Norway and the U.S. He discovered significant transatlantic divergences in justifications for hard work. The Europeans were more concerned with intrinsic satisfaction in work content: and even viewed

conspicuously long working hours as a sign of illegitimate status striving. The Americans, by comparison, had overachievement scripts focused on both extrinsic rewards of work and the personality traits that make hard work a natural expression of personality. These hard work commentaries invoke career success and moneymaking as inducements to hard work.

But, crucially, they also invoke personality traits, such as drive and the innate aversion to leisure. To quote: 'Americans do not associate happiness dividends with leisure, as do Europeans. Americans seem to derive satisfaction simply from working long hours. They are more work-centred'. He concludes that these scripts reflect a culture that values overachievement in itself, and has a longstanding moral aversion to idleness.

What is entirely hidden by such Californian extreme work scripts is the human foundation that supports and services this lifestyle. We think about the most powerful companies in the world today – like Apple, Facebook, Google, and Microsoft – as comprising young, passionate engineers, not the cleaners who arrive early or late, and who are on the minimum wage. The armies of workers who travel to Mountain View, Palo Alto and San Francisco but cannot afford to live there.

In addition, at a further remove, are the invisible workers who operationalize the apps that the engineers design. The speed, convenience and flexibility provided for the users of the multitude of service apps on offer require human labour to operate. Those who actually drive the Uber taxis, who deliver the pizzas for Deliveroo, who clean your clothes when you use a laundry app, who do the DIY when you use TaskRabbit.

While the user saves time, the time of the service providers is constrained by zero-hour contracts that requires them to adhere to precise timing schedules, leaving them with little control over their own time. Much of their time is spent waiting in between jobs, time that cannot easily be experienced as purposeful. If you are self-employed, freelance, or work in the so-called gig economy, increased personal efficiency is essential to your survival.

So time is lived at the intersection of an array of social differences in which some people's time and labour is valued more highly than others, and where some groups gain speed and efficiency at the expense of others. In other words, speed is a discourse, not a reality, for many.

As the rise of precarious workers show, speed and insecurity are two sides of the same coin. The quest for the hyper productive lifestyle of the affluent – for making the best possible use of one's time – depends directly on the labour time of those who are less well off. The digital devices and software systems can only garner time because of the starkly polarized social arrangements in which they are embedded.

All this highlights another aspect of how time is collective, not individual. What

Google parents are doing in the example above, by logging on in the evening, is the increasingly difficult task of complex scheduling, in order to make 'quality time' with their children.

The fact that this is so difficult is not because of technology per se, but because of social changes, such as the rise of dual-earner families in combination with changing norms of parenting. What people want is not just more time, anytime, but time together and quality time.

I want to spend a few moments on this point, about the collective, qualitative character of time, as this point and the linked gender story, is so often left out of the equation.

Now, do not misunderstand me. I am not denying that extreme work persists, especially for managers and professionals. But I would argue that the overall picture with regard to the relationship between ICTs and work extension is much more complex than usually presented.

It is certainly true that people feel rushed and pressed for time. Numerous surveys indicate a widespread *perception* of everyday life as harried, and a sense that leisure time is scarcer and more hectic.

However, what is not so self-evident is that average working hours have increased or that the amount of leisure time people have has actually decreased. Time-use studies, where people keep detailed daily diaries about what they actually do, show that, overall, the amount of leisure we have has not decreased. Of course it varies a great deal between different groups, but overall leisure time has not declined over the last 50 years.

I have recently compared the UK time-use surveys of 2005 and 2015 to see how much work extension there has been in the UK (Mullan and Wajcman, 2018). Killian Mullan and I found much less overall change than we had expected. There was a small increase in work extension, predominantly among managers and professionals, but there was not a huge shift over the last 15 years. IN other words, the data did not support the popular narrative about smartphones radically altering work patterns.

This gap between objective time use and how we subjectively experience it points to the importance of the quality or character of time, and not simply the amount of time we have. In reality, our everyday lives are characterized by a multiplicity of temporal textures and rhythms, which vary in intensity, depending on what, where, and with whom we are doing things.

For example, quality time with children requires a very special kind of time, and, according to all the statistics, the amount of time both mothers and fathers spend with their children has actually been increasing, not decreasing. Interestingly, this

increase is in 'active' childcare, such as talking and playing, suggesting that parenting is becoming more intensive. This is why I love time-diary data – because it pierces the myth of latch key kids – data over the last 40 years shows that parental time has increased.

In other words, while some aspects of life may well be speeding up, others may be slowing down. And I think this dialectical approach should equally be applied to our understanding of the interplay between technology and time more generally.

One of the things I have learnt studying the social impact of technology is that technology rarely just speeds things up. This is because every technological acceleration comes hand in hand with new activities and experiences, creating new kinds of social relationships and new ways of working. And, often as not, the effects are unpredictable and contradictory. We often use them in ways that were not anticipated by their designers. So the very same devices that can make us feel harried also enable us to take more control of our time. This is indeed what studies show.

The example of the mobile phone is illustrative. I began research on mobiles when they were still new technologies, and they were primarily marketed as business tools. But, from the very beginning, most of the actual use of mobile phones was people contacting family and friends.

The amazing take-up of smartphones follows the same pattern. So a technology that was designed primarily for business use has become an essential tool for synchronizing activities in a de-synchronized society. What I mean by this is that mobiles have become ubiquitous as an organizational tool because of the way we live and work. The increase in flexible working hours, together with the rise of dual-earner families, has made coordinating with other people, even family members, much more difficult. This change in working patterns and family forms are major sources of our sense of busyness/feeling harried.

Again, my point here is that the issue is not so much a shortage of time, as a problem of timing or scheduling. And the smartphone is a great device in that context.

In my book, I also argue against the notion that the time people spend texting and on social media is leading to a deterioration in the quality of communication: that somehow mediated communication is always inferior to face-to-face talk. And that while the merging of home/work boundaries is usually represented as a unmitigated disaster, this it is not always a bad thing, as the way communication now crosses this boundary can be a very positive thing and enrich relationships.

As the theme of this conference is extreme work, I would like to spend my last few minutes describing how intertwined and entangled our images of extreme work are with all the current representations of scientific and technological cutting-edge

entrepreneurial cultures - in which the optimization of time is the core rationale for everything.

I read the MIT Technology newsletter and here is a typical recent article, headed: *'Late nights, Chinese takeout, and DNA scissors. In science, timing is paramount'*. The subject of the article, CRISPR, is an amazing gene editing tool, but it is the narrative I am concerned with.

Here we have Feng Zhang describing the nature of the work in his Harvard laboratory in the run-up to the prize publication - a story of late-night Chinese food, everyone in the lab putting in extra hours, staying late and returning early the next morning. Regardless, he insists that no-one felt like 'we were doing hard work'.

'We were having fun, we were trying to solve interesting problems together, time went without even noticing', he says. 'We would eat dinner around 5 and then eat dinner around 10 again ... We would pick up Chinese deliveries and just eat together in the kitchen and go back to work right after'. The feeling of energy was amazing.

The article ends, like so many do, with Zhang saying that he wants to spend more time with his toddler, as he and his wife have just had a baby girl, but that he admits he'll 'soon get back to the computer'.

Such stories illustrate how heavily we are immersed in this culture of hyper-productivity. This makes it hard even to raise questions about whether this way of working is the most efficient and whether it necessarily produces the very best technologies, that is, whether speed itself should be the ultimate rationale for innovation.

In my view, this speed rhetoric is particularly pernicious in relations to stories about technical innovation. The sheer speed of innovation is now equated with inventiveness, productivity and efficiency. It is the ultimate measure of progress. We have this deeply held belief that the faster we do things, the more we save time.

Now let me be absolutely clear. I am not nostalgic for a slower, more natural, less digitized, past. This is not a lament for lost times. Neither do I see the emerging slow time movements (whether it's slow food or mindfulness) as the solution.

But I do think that our technologies reflect and express our times, as much as shape them. If digital technologies are complicit in our sense of time pressure, then this is because our technologies both reflect and feed our cultural expectations of speed.

After all, how can begin to reconfigure these technologies and this work culture while the people who design our technology, and decide what is made, are so unrepresentative of society. The most powerful companies in the world today are

basically engineering companies and, whether in the US or Japan, they employ few women, minorities, and people over 40. Over the years, despite increasing attention to the subject of diversity, little progress has been made. Note the recent rash of sex discrimination cases coming to light in Silicon Valley. It is a skewed reality and, as I have argued for years, this inevitably influences the kind of technology we get.

To conclude, even Siri cannot provide a good answer as to why we all feel so busy. When I asked her, she said 'I don't know. Maybe the Genius Bar folks can answer that'. They would probably advocate more digital devices to solve the problem. But the time problem is not about technology per se, rather it is about the priorities and cultural values we ourselves set.

If we want to take more control of our time, we must contest the imperative of speed and workaholism, and democratize the making of engineering. Only then can we harness our inventiveness to fashion an alternative politics of time.

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ⁱ By 'social time' I mean the system of rhythms and trajectories that humans create as they engage in interaction within social institutions. See Snyder, B. *The*

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