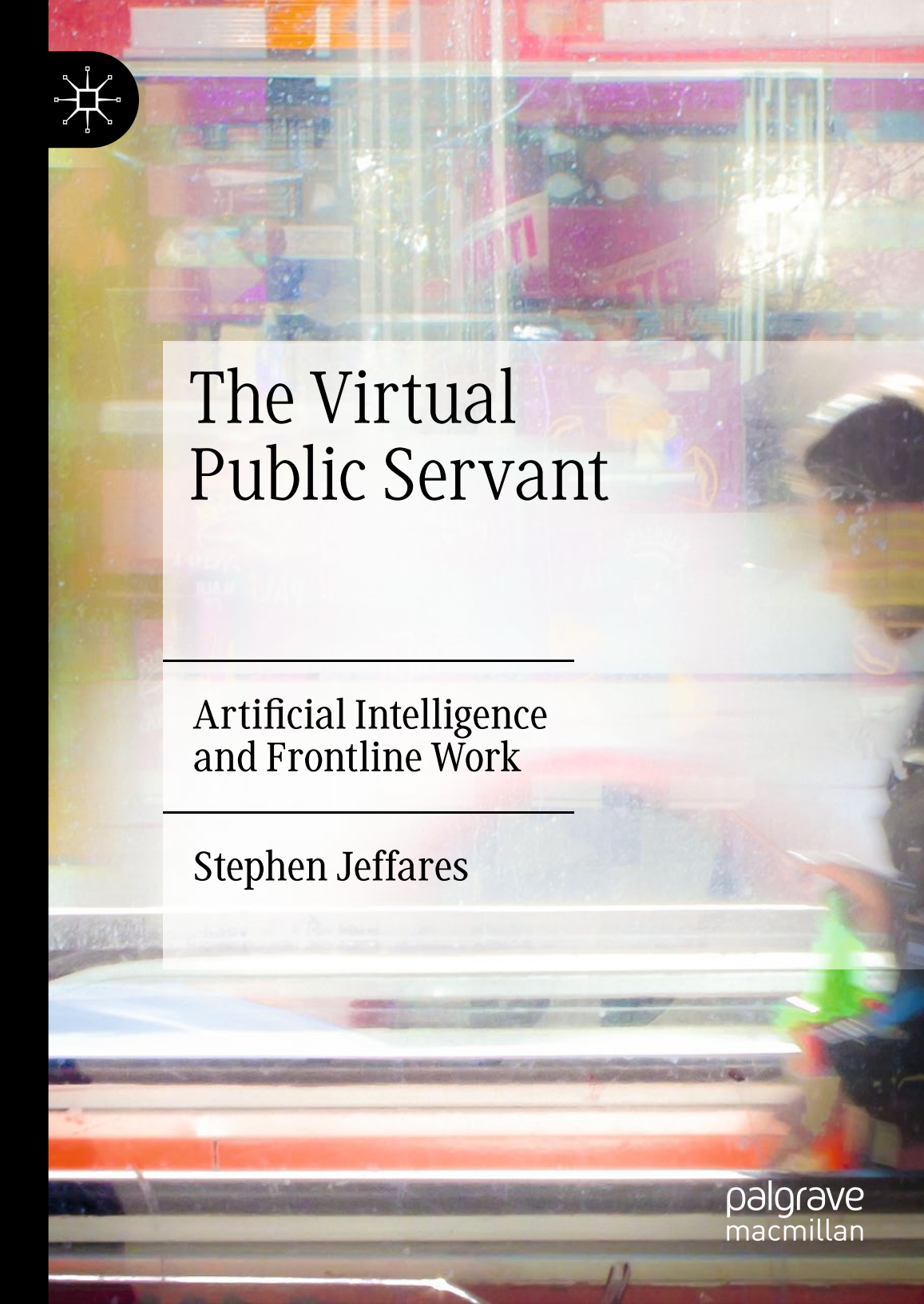

The Virtual Public Servant

Artificial Intelligence and Frontline Work

Stephen Jeffares

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Preface and Acknowledgements

I, like you, consume public services. I also teach people who manage public services. As a teacher, I try to help people work out how to better understand the work they do and the myriad ideas, agendas, policies, regulation, regimes, discourses and problems that shape their work and their practice. In recent years I have become particularly interested in the digital technologies that shape this work. In seminars and workshops at the university, I am struck by the different ways public servants react to new technology ideas. As a consumer of technology, I can't help but puzzle why the layout of waiting rooms has changed, the inclusion of a tablet to sign in and the use of "virtual" clinics alongside face-to-face appointments. I found myself subscribing to news of the self-service kiosk industry to hear about the self-service quinoa restaurants or the opportunity to order and pay with your face. As a consumer and a teacher in this echo chamber it all feels like things are moving fast. Traditional methods of interacting with public services are being redrawn, and some will likely never return.

Driving this curiosity is more than a professional research interest; there is a substantial personal dimension. In 2012, when the country was glued to its televisions watching the London Olympics, I was trying to look after my partner as she recovered from five hours of brain surgery. This encounter with our local hospital would be the first of countless encounters across five hospitals over the next 8 years, as part of home visits, and attendance at various outpatient clinics. Public encounters with oncologists, brain surgeons, neurologists, nurse practitioners, health care assistants, GPs, A&E consultants, junior doctors, staff nurses. Public encounters with plastic

surgeons, physios, radiologists, pharmacists, occupational therapists, paramedics, endocrinologists, counsellors, district nurses, medical and nursing students. Not to mention public encounters with hospital receptionists, phlebotomists, medical secretaries, porters, cleaners and catering staff. All this in a free-at-the-point-of-need national health service, during a period of prolonged austerity politics.

Despite the growing agenda of digital health care, the model was traditional and familiar: A letter would arrive with an appointment time. We would attend at the hospital, check in with a receptionist and hand a blood form to an assistant. In the early years, results were still being faxed over to a specialist. The encounter with the doctor would sometimes be in their office (brain surgeons) but mostly in a generic clinical examination room. The meeting was dictated, typed up, posted out and cc'd to the GP. In the early appointments, it was not unusual to see a porter pushing a shopping trolley of medical files before or after a clinic. Occasionally there would be a phone call to a specialist nurse advisory service or a secretary or booking clerk to rearrange an appointment. Sometimes the consultant or GP themselves would phone to relay some test results, but in the main, it was face to face supported by letter and fax.

By 2017–2018 there were signs of change, MRI scans and medical records were online and being sharable between hospitals and specialists. There was more promotion of nurse-led helplines as an alternative to requesting time with the consultant. Reception areas were being redesigned around a bank of self-check-in tablets and volunteer floor walkers helping those who seemed anxious about the technology. Prescriptions could be managed on an app. Doctors were using their mobile phones to share images and get a second opinion. Because of the severity and complexity of the treatment, we were in many senses treated as VIPs—as regulars we were on first-name terms with nurses and shared jokes about the weight of Dr Marten's boots during the weigh-in. Some doctors dispensed hugs when either the news was bad or indeed good. Despite this being an enormous fragmented system, under significant financial pressure spread over several sites, it was also a surprisingly personal service.

I felt a sense of urgency to write a book on what seemed like a period of significant transition—as we moved towards a more digital, presumably impersonal, future, not just for the NHS in England, but across public services in general. The technologies and techniques being sold to senior decision makers in public service are no different from those designed for banks, retailers, hotels or the travel industry. It seems the technology for

ordering an extra topping on a pizza is the same as that for managing acute care, of dispensing social security payments, arrest warrants in policing, managing probation supervision, distributing learning resources in schools and maintaining social service records. The decision to implement these changes is most often financial, but there are also drivers around compliance, accountability and accessibility.

There's nothing particularly new about a self-service machine—we've had machines that can serve up Coca-Cola for over a hundred years and ticket machines and ATMs for more than 50. The point of difference over the last few years is the fervour surrounding artificial intelligence, billed as the fourth industrial revolution and something that can transform how we do public service. What struck me at first engagement with those making and selling the AI vision into public service was the emphasis on personalisation, of deep learning, cognitive computing, social robotics and empathetic virtual agents. This was made possible because of the reduced cost of processing power and the growth of available data. It drove me onto research on how this idea of AI was being sold to government and public services. I wanted to scrutinise the marketing materials and learn how this was being digested by both decision makers and managers, but most of all those on the frontline. As an academic at the Institute for Local Government Studies (INLOGOV), my home turf is local government, but I was not content to stick in a silo. I wanted to break out and bring in examples and informants from a range of service disciplines.

And here we are. The process of developing this book started in the summer of 2016 with a study of police and how they were using social media and the stark difference between what individual police officers were doing with their Twitter accounts and their colleagues in corporate communications. Also, that summer came a press announcement by a local authority in London stating that it was to "employ" a virtual public servant. I was left wondering how such a virtual agent could replicate the authenticity of a public servant, of a police officer with a loyal local following or for that matter the consultant who mades a point of offering my wife a supportive hug after every appointment.

None of the work in this book has been previously published. However, elements have benefitted from valuable questions and feedback following presentation at a number of international conferences and invited workshops, including the Oxford Internet Conference, Interpretive Policy Analysis Conference, Q-methodology conference, and presentations at the University of Birmingham and the University of Essex. I am also

thankful to the Melbourne School of Government for a visiting research fellowship, and a visit to the University of TalTech, Estonia. I am also grateful to Max Lampiere and Hasnain Hudda for research assistance.

I am hugely grateful for all those research participants who gave up so much of their time to participate in the Q sorts and answer my questions. I am thankful for the support from INLOGOV and the School of Government for support with fieldwork and transcription expenses and to Catherine Mangan, Mark Webber, Jason Lowther and Rene Lindstaat. Particular thanks to Louise Reardon, Karin Bottom, Vivien Lowndes, Koen Bartels, Ross Millar and all my other wonderful colleagues for allowing me the time away from teaching and admin responsibilities to finish the manuscript. Thank you to my students on MSc Public Management and Leadership and MPA Public Administration and MA Social Research for allowing me to try out some new material. I want to extend particular thanks to some former PhD and dissertation students whose work sparked my interest in how technology is reshaping public service: Tom Barrance, Sue Bottomley, Simon Humble and Tom Staples and others. Thank you to everybody at Palgrave, my family and friends for encouragement and patience, with particular thanks to Deborah and Hannah helping us keep the ship afloat and to Joseph for making me see the world in a new way. Finally, I could not have come close to completing this project without the unwavering love and support of Annie. Thank you.

Birmingham, UK
Summer 2020

Stephen Jeffares

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CHAPTER 1

Artificial Intelligence and Frontline Public Service

In early summer 2016, a joint press release was issued by a local government in the north of London and a US-based tech company known for its use of artificial intelligence. The headline read:

> First Public Sector Role for IPsoft's Amelia as Enfield Council Deploys her to boost local services. (Ipsoft 2016)

The press release describes Amelia as a virtual agent, who could understand natural language and context, could learn, resolve problems and could sense and respond to emotion. Representatives of IPsoft state that it will allow the council to meet high customer expectations, to deliver more with less.

Such cognitive platforms offer government "an opportunity to completely reimagine how frontline public services are delivered. Organisations can not only unlock significant cost efficiencies as routine, high-volume tasks are automated, but, more excitingly, can unlock the full creative potential of their people", said the representative from the company. The chief executive of the council is quoted as saying: "This is a very exciting opportunity to deliver better services to residents, without increasing costs." And the council's Director of Finance, Resources and Customer Services said:

> Our approach to transformation embraces digital technology to find completely new ways of supporting residents, which, in turn, frees up valuable resources for reinvestment in front line services. (Ipsoft 2016)

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The accompanying video starts with a voice-over explaining that Enfield is one of the largest London boroughs with a growing population, increased demand on services and rising exception from residents. We then learn about how Amelia will work—on the website to support local people and remove the need for them to phone or visit the council offices. The video oscillates between aerial footage of the local authority, interviews with council staff and images of an office.

The office contains a desktop computer; on the screen Amelia has blonde hair tied back, her arms by her side, wearing a dark suit jacket and white shirt. She is pictured alongside a messages in a chat exchange. It appears Amelia is speaking the words of her questions and replies. In another shot, the Amelia avatar is pictured on the screen of a smartphone. The interviewee discusses the kinds of processes he expects Amelia will be able to provide. As the video concludes with the voice-over suggesting local people in Enfield can look forward to "meeting" Amelia just as a series of headlines flash up on the screen:

> This is Amelia: Fluent in Natural Conversation; Emotionally engaged; Understands context; Leading the cognitive revolution; Amelia is scalable.

While the idea of using technology to help improve efficiency, quality or access to public services is by no means new, some things stood out about this announcement:

First was the focus on the idea of a virtual agent, and the personification in an animated avatar, in this case an animated human character representing a public servant, a customer services officer. This was communicated as more than the deployment of software but rather the employment of a virtual human. The second was the focus on AI. While we have grown used to news of how AI can screen for cancers, drive cars autonomously or help establish creditworthiness what is presented here is a fluent, emotionally intelligent agent, capable of natural conversation and contributing to the transformation of frontline public service.

How did the media react to the announcement? Most of the major national newspapers in England covered the story. The first few articles mainly quoted sections of the authorised press release, but in the following day's newspaper journalists built on this by gathering additional content. What is notable, however, are the headlines. The word "robot" is not used in the press release, but this was commonplace in the coverage (Table 1.1).

Table 1.1 Press reaction to news of Enfield Amelia press release, June 2016

Publication/ Date	*Headline*	*Quote*
Financial Times, 16 June (Megaw 2016)	Council Takes on Its First **Robot** Worker	"The first government body to recruit a 'virtual employee' for frontline services"
London Evening Standard 16 June (Blunden 2016)	First edition: Hi, I'm Amelia, your local council **robot** worker Late Edition: Enfield Council uses **robotic** "supercomputer" instead of humans to deliver frontline services	"A robotic employee will be deployed instead of human council workers to 'deliver frontline public services' for the first time, it was revealed today"
Enfield Independent, 20 June (Smith 2016)	"It will be like speaking to a person": Plans for AI to answer planning and permit applications at Enfield Council	"If Amelia cannot answer a question, it calls in a human colleague and learns from them"
Daily Mirror, June 17 (McCrum 2016)	Robot "Amelia" who can "sense emotions" to start work in council job INSTEAD of usual human workers; Enfield Council has unveiled their new staff member who will help with customer service and administration	"A new robot is set to take on a post with a local UK council—and she's being hailed as the future of the humanoid workforce"
The Telegraph, 16 June (Jamieson 2016)	Robot called Amelia to do the job of human council workers for the first time	"A robot will replace human workers in delivering public services for the first time at a local council beset by budget cuts. The robotic employee, known as Amelia, has been purchased by ***Enfield*** council in London and can make decisions and track customer emotions. The artificial intelligence (AI) programme will be able to participate in thousands of conversations at once and answer in a human way … It is said to be 60 percent cheaper than using a human worker"

(*continued*)

Table 1.1 (continued)

Publication/ Date	*Headline*	*Quote*
Daily Mail, 16 June (Prigg 2016)	Meet Amelia the AI assistant: "Virtual agent" gets job at a London council answering customer queries	"Amelia also learns on the job by observing interactions between her human coworkers and customers and independently builds her own process map of what is happening She then stores and applies that knowledge to determine how to resolve similar situations on her own This ability to observe, understand and automatically apply this knowledge combined with the speed at which she learns allows her to quickly become an expert in any field in which she works"
The Times, 20 June (Low 2016)	A **robot** called Amelia offers council an answer to all problems	"She is always there for people, and she really understands their problems. She also isn't real. The council has become a pioneer in artificial intelligence by becoming the first public sector body in the world to recruit a 'virtual employee' for frontline services"

Source: NexisUK

Amelia was described as a humanoid *robot* to be *employed* alongside human colleagues. The newspapers claimed Amelia to be first virtual government employee, as a *replacement* of human workers, as *capable* of listening and *learning*, capable of speaking like a person, able to *sense emotions*, as the future of work and 60% *cheaper*.

Some of this information about Amelia's capabilities was in the press release, while some were inferred from related content about Amelia from previous deployments in the finance and hospitality sectors. The articles built on many earlier discussions of robots coming to take our jobs. The headlines exploited our fear yet fascination with the idea. After all the headline writers were tweaking their headlines to drive clicks to their pages; they were doing their jobs.

For now, I am less concerned by whether the media depiction and claims are realistic or accurate (we'll return to that later in the book). However, I am interested in the symbolic value of the idea of Amelia as a capable, empathetic virtual public servant and the role it plays in emerging discourses of frontline public services in an era of artificial intelligence.

The Amelia case evokes three questions. To what extent are we witnessing a rapid emergence of a frontline role for AI in the public services? Second what is the current state and future of frontline work in this age of AI? And third is a general-purpose virtual public servant both practical and indeed desirable? It is to these questions this book is focused.

AI and related technologies such as robotics, virtual agents, robotic process automation and machine learning are increasingly associated with public service and public management. While an association or a role for AI and public policy has been around since the 1980s (e.g. Hadden 1986), it was all but absent during the heyday of e-government during the 1990s and 2000s; it is only more recently that it is taking hold (Zheng et al. 2018; Wirtz et al. 2018; Agarwal 2018; de Sousa et al. 2019). The common narrative is now well established—that for decades it was a marginal sub-discipline of computer science, that suffered two long "winters" where funding was hard to come by. More recently a number of factors combined including improved computing power, the availability of data and insights from neuroscience.

It has long been commonplace to illustrate the continual advancement of AI by setting up competitions of AI vs Human. Take the best player of a particular game and watch as the AI destroys them. In the early days they started with draughts (checkers), decades later chess, TV game show *Jeopardy!* But it was a victory over the finest players of the ancient Chinese game of Go in 2016 that symbolises a sea change, a moment of breakthrough. The engineers that created the breakthrough AI did not merely programme it with a set of rules; they gave it a goal and set it to work, playing 10s of thousands of virtual games, it learnt through a process of deep learning (Lee 2019; Russell 2019). Such moments are more than PR stunts for the AI industry, and they fuel our collective fear-fascination with robots and intelligence and speculation over if and when our roles will be taken over by robots (Hawksworth et al. 2018; Frey and Osborne 2017).

The experimentation and deployment of AI and robotics in frontline public service have multiplied over recent years; only by considering this beyond our academic silos or service specialisms can we start to build up a comprehensive picture of this change:

In the field of criminal justice, the police in the UK are using AI to predict where crime is going to occur (West Midlands Police 2018). Police in the UK are using face recognition technology to identify trouble makers at football matches (NEC Corporation 2016). And in some cities in China face recognition is used to identify jaywalkers and to display an image of the offender on a sizeable digital billboard (Tao 2018). There are robotic police officers in Reem Robot in Dubai (BBC News 2017), HP RoboCop (Reyes 2019) and "police robot" in the US (Tech World 2019), KP-Bot India (Unnithan 2019) and "roboCars" fitted with mobile face recognition in South Africa (Singh 2019). Automated interviewer border guards have been trialled in Hungary, Greece and Latvia as has an AI-based threat detection system that is designed to highlight suspicious travel patterns to the authorities (Kendrick 2019).

Social workers in the UK are using speech to text to capture and share their meeting with families (Wood et al. 2019). Social robots are being used in caring roles across the world (Pekkarinen et al. 2019). Councils are paying for residents to have smart speakers in their homes to reduce the chance they need more expensive residential care (PA Consulting 2018). A local authority in the UK uses a social robot to work with adults in residential care (Alzheimer's Society 2019). In Japan, a robot called Palro is used in over 300 nursing homes to talk with residents (Financial Times 2016). A robotic seal is being used in therapy (Paro Robotics, 2019). A variety of proactive smart speakers are coming to market to keep older people connected and to alleviate loneliness (Intuition Robotics 2019). A variety of care bots are deployed, such as Rudy who can tell jokes in the US (INF Robotics 2019). Care-O-Bot in Germany can get a vase from a cupboard (Franhofer IPA 2014). Lio in Switzerland can stroke somebody's shoulder, transport a glass of water and remind a person to drink (F&P Personal Robotics 2019). The Department of Work and Pensions is deploying a 100 welfare bots in its "Intelligent Automation Garage", to support communication with claimants and to automate processes (Booth 2019). Around a third of UK councils are using software to support decision making in welfare claims (Marsh 2019).

A professor used a virtual teaching assistant called Jill Watson to support students on his Distance Learning programme; none of the students noticed it (Goel and Polepeddi 2016). Bot teachers have been trialled in online courses (Bozkurt, et al. 2018). A school in Sweden was fined after it trialled face recognition technology to manage attendance (Lindström 2019). A company in China has opened a network of learning centres in over 200 cities that uses AI to provide private tutoring to children.

Students work mostly in isolation at laptops whilst teachers sit and monitor progress on a dashboard (Hao 2019).

Hospitals in Ireland are tracking patients around the building using wristbands connected to Wi-Fi (Tracworx 2019). Doctors in the US and the UK are using AI to help them go deep into a person's medical history or help them understand a patient they've never met before (Chowdhury 2019). Symptom checking sites and apps are becoming widespread (Semigran et al. 2015) and increasingly used for triage of patients (Verzantvoort et al. 2018). Hospitals in the US are deploying security robots to patrol at night (Knightscope 2019). Giant bear-like robots are being used to lift patients in and out of chairs and beds in Japan (Riken 2015). The UK's National Health Service (NHS) has entered into a partnership with Amazon to allow people to access health information on the voice assistant Alexa (Siddique 2019).

Local authorities are using AI-informed technology to make walk-in visits to customer service centres more efficient (Qnomy 2019). Councils in the UK and Sweden are using AI to automate replies on live chat (Aylesbury Vale District Council 2018; Vergic 2017). A local authority in China is using a robot receptionist "door robot" (Xhby 2017). Bristol City Council in the UK are using AI to score people out of 100 for the likelihood of antisocial behaviour, the possibility to abuse children, go missing and the likelihood of unemployment to assist frontline staff and make decisions on staffing in different parts of the city (Booth 2019b). Governments across the world are using chatbots to guide people through government processes, including "Jamie" in Singapore (GovTech Singapore 2019), Kamu in Finland (Finnish Immigration Service 2019), in the US (GovTech 2017).

Upon reading these examples, AI researchers may be reaching for a pen, to edit out those that are "not real AI". It seems the AI label has acquired a cache that means something that is automated for the first time or involving a new kind of digital process in a government service is labelled as AI. It says something about the salience of the AI label and what its advocates claim it can offer cash-strapped, people-starved, overburdened public service managers as support to or replacement of unreliable, emotional, stressed, burnt out, unionised, over-paid public servants. Dig a little deeper; many of the examples listed above are experiments, trials, often part of a PR campaign that helps promote the public agency, the technology company or both. Some of the references listed above use the example to show how AI is here now, rather than a future pipe dream,

something we need to take seriously, something we need to fear. Or they portray it as another example of an over-hyped failed experiment where the robot fell into a lake or ran over a toddler. Or it is associated with the creeping privatisation of public service, as platform capitalism, as aiding the transfer of funds from frontline pay-packets to the pockets of large technology companies.

Some examples above support the communication between public servants and citizens; others support decision making, operating in the background trawling through the files. Some are relatively anonymous algorithms, but many are subject to a varying degree of anthropomorphisation—given a face, an avatar, a human or animal-like body, a name or a social media account.

The example of Amelia that opened this chapter also evokes ideas of the public encounter (Goodsell 1981; Bartels 2015; Stout and Love 2017) where citizens communicate with public servants to transact matters of public interest, has an uncertain future. Face-to-face public encounters are problematised as bureaucratic, corruptible, discriminatory (Dubois 2010; Meier and Bothe 2001; Hastings 2009). Face-to-face public service encounters enable frontline public servants to balance community values (Bartels 2013, drawing on Vinzant and Crothers 1996; Handler 1996). For Bartels "public encounters … enhance public service delivery by nurturing stable relationships and constructive communication" (2013: 473). He argues, with others, that public encounters facilitate authentic participation and facilitate trust and personal connection and counter alienation (King et al. 1998; Durose 2009). Consideration of implications for the public encounter prompts Buffet to ask the question: What happens "to the administrative relationship when such a human interaction is being replaced by a virtual one?" (2015: 155).

To date, much of the discussion about frontline work and technology-based reform has hinged on implications for discretion (e.g. Reddick et al. 2011), split between enablement and curtailment theses (Buffat 2015). Those defending an enablement thesis suggest that technology can provide frontline workers with additional resources, and has little impact on interaction (Schuppan 2015). Drawing on studies in France (Vitalis and Duhaut 2004) and the Netherlands (Bekkers et al. 2011), Buffat argues that web-based interaction has an enabling effect, reducing information asymmetry between public servants and citizens and providing citizens with powerful action resources (2015). Others argue that new technology can destabilise trust or propagate mistrust between public servants and

citizens (Feeney and Welch 2016). Some observers point to the continuation of practices whereby public servants favour some citizens over others when encounters take place online (Huang et al. 2017).

What these five sets of examples also demonstrate is that the same systems are being deployed in different domains of public service and in wider commercial applications. Inspired by this, this book attempts to maintain such a comparative gaze. The primary focus of the primary research in this book is local government/local public service. It draws on examples and interviews in education, health, social care and policing.

Tempting so it is to fill a book with examples as above, to do so would be like building a house on quicksand. The inclusion of these AI and related technologies in these five domains of public service may have parallels, but it requires a deeper understanding of how public service has been transforming over the last 20 years, particularly in the diversification of frontline work to introduce a plethora of "channels" by which public servants and citizens interact. For a variety of reasons, that will be discussed in detail further below. The motivation has been to increasingly move people away from what are high-cost encounters (namely face-to-face meetings) towards zero-touch or self-service. Furthermore, where face-to-face encounters do remain, they are carefully structured and recorded to ensure efficiency and compliance. A similar trajectory is visible in telephone communications and its various remote contact off-shoots. The organisation of the central chapters in this book is inspired by the work of Marshall McLuhan, who coined the phrase *medium is the message*. The way he structures his book *Understanding Media* (1964) shows how the medium, the means through which we communicate, matters; it makes a difference. A phone call is not the same as meeting somebody face to face. Such a logic seems to run counter to much of the advancement of what some call multichannel management, which, through advocating the quantification of public encounters, to express them transactions, leads "rational" government actors to close down unnecessary and expensive human interaction. Why this matters is that after several decades of public service being delivered face to face, over the phone and websites, there are many new opportunities. New opportunities come from service robots, virtual agents and interactive kiosks, not to mention a host of AI-based software that can support public servants on a variety of mobile devices. With the renewed interest in AI the long-established "channel shift" mantras have not gone away. But rather AI, as an idea, is new fuel on the fire. It is for this very reason the book is structured in this way to understand

how we ended up with examples above, to the example of Amelia that opened the chapter and with many more emerging every day.

Building on previous work (Jeffares 2008, 2014) the theoretical foundations of this book are the political discourse theory of Laclau and Mouffe (2014) and those that have subsequently found application of their work in public policy analysis (Griggs and Howarth 2008; Glynos and Howarth 2007; Torfing 2005) and inspired by interpretive approaches to policy analysis (Hajer 2002; Yanow 1996). What discourse theory brings is to look beyond assumptions about interest and to focus on the unit of analysis that is "demand" and to understand how these become chained together through a process of articulation and reiteration. This moves us on from thinking about AI as an idea that has "caught on" to it symbolising a chain of demands which in turn help shape perceptions and practices of public managers and other decision makers. AI appears to be functioning as a type of fantasmatic logic that simultaneously symbolises both what is lacking and what is desirable in frontline public service.

In the next chapter, I will argue there are four essential public service problems that AI is offered to overcome: a problem of control (e.g. ensuring compliance with rules), a problem of cost (e.g. how to meet demand with reduced funds), a problem of convenience (e.g. how to meet growing customer expectations), a problem of connection (e.g. how to maintain trust and mutual empathy). A central argument of the book is that while much of the automation of public service processes has served the first three, it has come at the expense of the fourth. What is different about the discourse of AI is its promise to offer automation while compensating for any loss of human connection and consequences thereof.

Methodologically the work is primarily qualitative but incorporates the factor analysis of Q-methodology. It draws on primary research interviews with frontline public servants and their managers working in policing, local government, education, health and welfare. It also develops and deploys a Q-methodology study, where public servants sort a set of statements drawn from what is a broad concourse of discussion around the role of AI in frontline public service. The development of such a research instrument combined with the nature of the topic required me to go beyond the conventional academic sources (Beer 2018) to draw on the often overlooked and ephemeral marketing materials of the industry selling AI and robotics to the public sector. Given the speed by which this field is developing what is offered in this book will never be exhaustive; however, what it does offer is to bring together a diverse set of international sources and examples in one place for

the first time, examples so often fragmented by the nature of disciplinary silos. Given the nature of the industry, much of this is available online. Where relevant videos are transcribed and quoted, sometimes at length. Sources are referenced in full and available in the reference list.

What this book is not is a comprehensive guide or introduction to AI. Lots of these now exist—many of the great AI minds are taking sabbaticals from their labs to write book-length pieces for the generalist market (ala Russell 2019; Lee 2019; Tegmark 2017). Such books offer similar conclusions that we need to be cautious and build in safeguards. But they are also reassure us that the idea of general-purpose AI is a long, long way off. Neither is this book overly focused on the morality of AI, the ethical implications. Of data security. Of freedom/liberty. All this matters, and it often defines what seems like a polarised literature between utopians and dystopian. But much is already written on this. Barnhizer and Barnhizer (2019) systematically catalogue various harms AI poses to the globe. Whereas Van Belleghem (2017) tells us of the great commercial potential of "AI bots and Automation". Government can often be paralysed by the fear of misusing data and now working with particular AI or robotics companies. But many are also experimenting, oftentimes coming not from the top of the organisation but with middle managers playing with free trial software.

The book is not going to arrive at a universal definition of public service AI. In many respects, anything that calls itself AI is for this book worth consideration. For the emphasis is on the role of AI as an idea, a brand—not on the consistency of its contents. That said there is a focus on technology that is focused on learning rather than programming. But given the focus is to track how we got to this point—many of the technologies discussed in earlier chapters of this book are necessarily old-fashioned and very much not what anybody would claim as AI. But what they do show is what needs to happen for AI to be incorporated into frontline public service. That is: the datafication of face-to-face encounters, the creeping automation of our call centres, the ephemoralistion of self-service interfaces, the rise of social robotics and investment in virtual agents. There are chapters on each.

This book has ten chapters: Chap. 2 seeks to establish the conceptual foundations for the oft-repeated public service problems and related technology-based solutions. Given the inability of the technology industry and digital government communities to resist shrouding everything in cloaks of ever-evolving jargon, Chap. 2 will also serve as a useful glossary for the remainder of the book. This book reports original primary research

data gathered between 2016 and 2019, including interviews, case study visits and social media text analytics. An overview of this primary data collection and analysis is set out in Chap. 3. Chapters 4, 5, 6, and 7 follow a similar structure, each containing an overview of literature, examples of how the technology is being used and is changing and primary case drawing on research interviews. Chapter 4 focuses on face-to-face work, Chap. 5 on remote contact and Chap. 6 on self-service. Chapter 7 focuses on social media. The cases these four chapters include the use of software to structure transactions in a customer service centre, the use of AI to automate live text chats, the deployment of self-service libraries and the use of software to manage social media communications. Chapter 8 continues in the same vein—but brings a range of examples around the growth of robots and virtual agents. Chapter 9 then revisits our opening case of Amelia—to explore what happened to her employment and how they are perceived by existing public servants. Chapter 10 offers three prescriptions for the future of virtual public servants—shaped by a ground-breaking Q-study of frontline and managerial public servants.

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CHAPTER 2

Control, Cost, Convenience and Connection, Four Problems for AI and Public Service

Frontline public service delivery is problematic and a multibillion-dollar industry is waiting in the wings to offer technical solutions. The marketing materials of this industry serve to both frame the problems and define solutions. The language used is informed by a host of emergent ideas and principles wrapped in the latest buzzwords. The growth in prominence for AI has served up yet more. A core aim of this book is to understand how such ideas are shaping our perspectives of frontline work and in turn informing decisions about what practices are retained and what are subject to reform. Given the nature of the source materials in the chapters that follow it is important first to offer something of a grounding. First this chapter develops and defines a framework of four problems of frontline work.

The four policy problems that AI is solving are alliteratively labelled: *control, cost, convenience and connection*. Before sketching out each it is worth remarking on frameworks that informed this. The processes started whilst touring technology conferences and watching marketing videos. There seemed many parallels with some earlier work around e-government. Back in 2006 Andrew Chadwick set out four reasons for e-government. The first is cost reduction. The greatest cost to running an organisation is its payroll. Technology can be developed to undertake relatively simple but relatively high-volume work. Much of the early work in this field also stresses how technology can relieve staff of monotonous and tedious work. Although new systems come at a cost, the overall saving can be substantial.

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The second offered by Chadwick is effectiveness. Historically organisations have been organised to suit the capabilities and technology of the time. Technology offers new opportunities to work that cuts across traditional silos that can improve the quality of the service on offer. The third is coordination. It offers a means to defragment any previously implemented information management systems through a process of what others have highlighted as reintegration (Dunleavy et al. 2006). This offers a means to integrate two things. First the legacy systems that have been incrementally introduced over decades. And second the various systems of a disparate group of governance actors—including commissioners regulator and providers. The final of Chadwick's reasons is democratisation. Here technology can offer new opportunities to involve more in the process of decision making. It offers the opportunity for e-rule making and deliberation and the coproduction of decision making and service delivery.

There are clear parallels with Chadwick's four in the earlier work by Janet Newman (2001) in her study of governance. It offers four idealised models of governance plotted on two axes. The value of Newman's framework is it reminds us of the potential tensions between different models of governance. On the vertical axis (Y) is a tension of differentiation/decentralisation to centralisation and vertical integration. On the horizontal axis (X) is continuity and order to one of innovation and change. Four models are plotted onto these axes: hierarchy, rational goal, open systems and self-governance. Continuity/centralisation gives rise to a hierarchy model akin to a traditional civil service bureaucracy. Exemplars would be command and control arrangements used by the army or police. This is in tension with decentralisation/change giving rise to an Open Systems model of governance. Here Newman highlighted the emergence of greater use of networked forms of governance through formalised partnerships and hybrid organisations. In a third model centralised/change offers a Rational Goal model, where the exemplar would be the private sector firm. Finally, continuity/decentralisation that Newman labels as a model of self-governance. The exemplars here would be voluntary or neighbourhood organisations. Although the application for which this framework was developed has long since moved on, the framework has an elasticity that helps remind us of the competing motivations for greater use of technology in frontline public service.

The final framework is one developed with a focus on both technology and frontline work. Here Busch and Henriksen (2018) extend Moore's

(1995) notion of public value and Kernaghan (2003) to set out four general parameters: *ethical values, democratic values, professional values* and *people values*. The authors develop this theory out of a systematic review of articles related to street-level bureaucracy and digital discretion. Most helpfully are the public values contained within each of these general parameters. "Ethical values describe frontline workers maintaining integrity, fairness, loyalty and honesty" (2018: 6). Democratic values cover loyal implementation in line with the intentions of the policy maker. Professional values uphold "effectiveness, efficiency, service, leadership, excellence, innovation, and quality" (2018: 7) that characterise a given profession of the frontline worker. Finally, people values pay attention to the treatment of individuals mindful of their context and need. Such values include caring, tolerance, compassion, benevolence and humanity. Although the focus of Busch and Henriksen's work is explicitly on implications for discretion, these general parameters have a broader applicability to consider how we describe the conduct of public servants when working on the frontline.

The three frameworks from Chadwick, Newman and Busch and Henriksen, although developed in isolation, can be combined. The motive to coordinate, to maintain control and values of loyal implementation points towards a problem of *Control*. The motive to improve effectiveness, to cut across and join up traditional silos, to support open networked arrangements, to offer fairness to all service users points to a problem of *Convenience*. Cost reduction motives, rational-goal and related professional values including efficiency and excellence point to a problem of *Cost*. In contrast democratic motives, grassroots models of governance together with values of tolerance and humanity point to a problem of *Connection*.

The Problem of Control

The problem of control speaks to the very notion of procedural correctness of bureaucracy. Control is about management, about ensuring policy and procedure are implemented as intended. It is about consistency and fairness. It is about drawing on technology to reduce practices of discrimination (Wenger and Wilkins 2009) and increase accountability (Reddick 2005). Control is about making decisions based on evidence and drawing on available data. It is giving public servants information that they can access out in the field, client records and information to support decision

making. Control is about accurate and timely record of public encounters that can be accessed by all. Rule-based decisions can be delegated to algorithms to uphold fairness, reduce burden and speed up processes. Digitisation allows all this to be captured in a digital paper trail that can feed into performance management of both individuals and collectives.

A core idea around maintaining control is command of information and information systems. Hand-written forms, typed or dictated reports have long offered a means of capturing information of the public encounter. Trained professionals or specialists are called upon to relay specialist knowledge or know how to access information required—be it a request for a particular service, or the need for diagnosis or assessment. The increased availability and power of computers from the middle 1980s sparked fervour about "the computer age". Year-on-year improvements in data storage and retrieval have in turn shaped the encounter (Downs et al. 1988). Gone are the days of the police officer's notepad or the scribbled note in the legal pad. Speech to text, body-worn camera footage and apps like Deepmind's streams on mobile tablet computers are some of the many kinds or methods for capturing the information required (see Devlieghere et al. 2016).

A second idea for maintaining control of frontline work is the notion of process. This has a long history; the steps to achieve a particular end is exemplified in the 1950s video showing how the Ford Motor company are using the LEO computer to process its payroll. Clock cards from the factory are packed into a van, driven across town and then typed and retyped into LEO. They are checked and then LEO prints individual payslips and aggregates the data for management. Computers have continued to improve in speed and power and more parts of the process have been subject to re-engineering, eradicating what are deemed unnecessary or wasteful touchpoints. Such a model also conceives of front-end and back-end systems. Whilst much of the re-engineering efforts have focused on "back-end" processes, in 2008 the UN summarised the increased interest of states in "enhancing the value of services to the citizen". That requires, they said,

> a recognition that an increase in the value of services is not possible without consolidating the way the back-end systems and processes work to bring about the front-end service delivery. The new approach maintains that genuine cost savings and quality improvements will occur only if there is a re-engineering of the internal structures and processes of the administration towards a connected form of governance. (United Nations 2008: xv)

Processes also mean consideration of the journey of a user, how they receive a service from "end to end" and this in turn shapes how, where and when users will come into contact with public servants, if at all.

Maintaining control of public service is hampered by legacy systems. Legacy is what those in computing call software or hardware that has been superseded but is hard to replace and remains in widespread use. Hospitals with the continued use of pagers and fax machines are prime examples. When the WannaCry ransomware attack hit machines running Microsoft Windows XP (a legacy operating system) it revealed that there remained many thousands of specialist hardware, like microscopes and scanners, dependent on this legacy operating system. Any new application introduced into the public services will likely have to run alongside a myriad of existing systems. Public servants are street-level bureaucrats and may choose to adapt or indeed ignore new systems in favour of what they trust or prefer.

The digitisation of the interactions between government and citizens and related information flows requires the development of systems. Back in the 1980s and 1990s the excitement was around "expert systems" that made use of earlier forms of artificial intelligence that would serve as a resource for public servants to draw on (Berry et al. 1998). But the introduction of electronic systems also means a potential shift in traditional ideas of discretion afforded to those in frontline roles (Tummers et al. 2015). As Buffat (2015) suggests, findings are mixed, with some finding for technology served to increase managerial control over staff and clients, whereas others argue it reduces discretion.

Most notably Bovens and Zouridis (2002) pointed out these changes meant for frontline work and the machine bureaucracy. They illustrated their argument with some worked examples of transformed services, the process of student loan applications and the issuing of a speeding ticket. In the latter example the traditional model would involve a police officer pulling over the speeding vehicle, speaking face to face with the driver and making some decisions as to whether to issue a fixed penalty fine or whether to use discretion. Such discretion could see the officer either being more lenient or in contrast "throwing the book at them" and seeking to punish the driver, something that Tummers et al. (2015) refer to "Moving toward or moving against". This discretion is a coping behaviour and characteristic of what Lipsky coined as a street-level bureaucrat. What marks out Bovens and Zouridis' paper is that digital transformation removes the cop from the transaction. A fixed camera reading the number

plate records the traffic offense and the computer system triggers an automated fine. Any power to bend the rules is in the hands of the person programming the algorithm rather than an agent on the ground. This, for the authors, is system-level bureaucracy.

The break-throughs around AI over recent years are to a large extent due to increased computing power, but entirely dependent on the abundance of data (Russell 2019). For a comprehensive introduction to the politics of data we need look no further than Kitchin's data revolution (2014). At the time of publication "big data" was the buzzword of the day. Kitchin helpfully extended the definition of big data as more than the ubiquitous 3 Vs (volume, variety, velocity), whilst also joining those to raise concerns about the hidden biases in big data (Crawford 2013). The first few years of the 2010s were also peak for open data (Bright et al. 2015). Governments around the world set up virtual data warehouses and portals for open data and competitions were launched to see who could devise the most original and useful third-party apps that could make use of data sets being made available for reuse. Around this time the idea of "data as oil" idea took hold in business, it was seen as an exciting new way to bring in income. Whereas public services were criticised for sitting on treasure troves of data without the awareness or skills to exploit it.

Ideas of *information, process, mitigating legacy, systems* and *data* are all examples of attempts to control frontline work with technology. In the next section we turn to consider the problem of cost.

The Problem of Cost

The problem of cost looks to technology to make public services more efficient. This is long established in the e-government literature and central to those creating and selling digital products (Wastell et al. 2010). The problem of cost is addressed through multi-channel management, by seeking to measure and compare the relative cost of public service transactions, and advancing behavioural techniques to encourage low-cost transactions and reduce use of and dependence on high-cost channels, with face-to-face work as a channel of last resort. It may also involve deliberate rationing or sanctioning to change the desirability of services. The problem of cost highlights unsustainable demand on public services—aging populations, people living longer with chronic conditions, skill and labour shortages, brain drain, part-time working. Problem of cost points to staff

facing burnout, stress and overload from reorganisation. The problem of cost talks of a need to redistribute or reinvest resources or to make services more affordable to open them up to more.

Over the last decade technology has been inextricably connected with austerity politics in many developed nations. However, it is important to acknowledge that this is played out very differently in say the US versus the UK, where the latter is increasingly dependent on the introduction of digital technology to help resolve a budget crisis, with some local services seeing a 40% reduction in budget.

The first idea responding to a problem of cost is transformation. For many years the transformation of government and public service was expressed as e-government. It was defined as "the continuous optimization of service delivery, constituency participation, and governance by transforming internal and external relationships through technology, the Internet, and new media" (Gartner cited in Chadwick 2006: 179). Authors have since noted the shift in emphasis of this e-government project, such as Lips distinguishing between E-government 1.0 and E-government 2.0, is between technical determinism and transformational government (Lips 2012). Others have formulated a stagist models, such as Gupta and Jana (2003) offering four stages of development outlining the structural transformation of the government. Governments have adopted transformation to describe their core strategies: like the UK Cabinet Office "Transformational Government" (Cabinet Office 2005), or the Local Government Associations "transforming local public services (LGA 2014). The label of transformation often intertwined with the language of business (business transformation), whereby public servants begin to wholesale adopt the language, terminology and techniques of private sector transformation. Whilst for some it meant entering into formal partnership or joint ventures with the private sector (Jeffares et al. 2013), others are critical (Nograšek and Vintar 2014; Bannister and Connolly 2015), yet the label of transformation persists (Waller and Weerakkody 2016).

The idea of digital has grown in prominence and takes a number of forms. Digital government (Lips 2019) has become a widespread umbrella term; for some it also implies a technocratic bias. For several years the label "digital by default" (e.g. European Commission 2012) was popular with decision makers, whereby non-digital methods of transmitting information to government were all but withdrawn. In practice this means removing paper forms as an option and requiring all applications to be online or similar.

A related concept is the shortening of technology to "tech" (e.g. Bickerstaffe 2013) and the practice of compounding it with abbreviated umbrella terms for a particular sector of the economy: most notably fintech (digital transformation of finance and banking), govtech, civtech, proptech and plantech. It brings into sharp relief the determination for the technology industry to sell their products into government, often viewed as backward or lagging behind the private sector. Specifically, this technology is "B2G", business selling to government. Overall ideas of digital and govtech serve to legitimise ongoing reform of public service encounters which often focuses more on how technology can remove the need for a human encounter. Face-to-face encounters become those the last resort. Whist many of the processes are without controversy (say taxing or licensing a motor vehicle, registering a pet), it becomes particularly problematic when involving vulnerable service users.

A further idea is channel. It became commonplace for public agencies to calculate the relative cost of a face-to-face meeting, with a telephone call, with an online web transaction. Such figures have been fed into numerous "business cases" and resulted in the reorganisation or termination of channels as a result. Communication scholars compare digital and traditional channels (Reddick and Anthopoulos 2014) and study the motivations of particular channels (Reddick and Turner 2012; Madsen and Kræmmergaard 2015; Laenens et al. 2018; Ebbers et al. 2016), and how to offer and incentivise the cheaper self-service (Meuter et al. 2000; Kallweit et al. 2014) and to reduce "traffic" on the traditional channels (Madsen and Kræmmergaard 2018). This channel idea has also given rise to other labels like the emergence of "multichannel services" and omnichannel environments (Sousa et al. 2015).

Less common in public management circles is to describe channels as media. Marshall McLuhan (1964) organised the second part of his seminal book *Understanding Media* as follows as a series of chapters documenting the emergence of new forms of media and how they shape society: spoken word, written word, roads, numbers, clothing, housing, money, clocks, print, comics, the printed word, bicycle, photograph, the press, motorcar, telegraph, typewriter, telephone, phonograph, movies, radio, television. For him the medium was the message—the medium mattered, dictating which of our senses are activated during an exchange. And yet for decades digital transformation initiatives have played particular attention on the efficacy and most certainly cost of different "channels" of communication.

A third idea addressing the problem of cost is virtual. Virtual as in not physically existing but software makes it appear to do so. Fountain brought us the notion of the virtual state defined as: "one in which the organization of government increasingly resides within networked computerized information systems and within interorganizational networks rather than in autonomous bureaucratic agencies" (Fountain 2004). Back then, the Internet was only just going mainstream and governments were transfixed with what this could offer them. The concept of virtual was associated with the de-bureaucratisation of government. For most countries the development of a virtual state has been somewhat slow and piecemeal, although countries like Estonia have actively branded themselves as e-Estonia (Kattel and Mergel 2018). Its government took the decision to build its system around two key building blocks—a secure digital platform called X-Road and to offer all citizens a digital ID card. This it was hoped would enable citizens to access government services over the Internet. It meant that some e-government services were available to Estonians long before other developed nations. The government boasts that citizens can file their taxes in a matter of minutes, or can view or renew their prescription with a few clicks. One of the phrases it uses to describe this is "the establishment of an invisible government".

Whereas this Estonian position is to see the shift to a virtual, invisible, state as a badge of pride, others question what is lost in the process. For example, Pollitt asks: "does the overall shift aware from local, face-to-face relationships to distant, usually virtual relationships have an accumulating or long-term effect on the way citizens conceive of public authority?" (Pollitt 2012: 201). Pollitt questions whether a disconnect is growing between the tiny minority of "cosmopolitan, always-on-the-move, 'rootless' business and professional people" and residents, ordinary rooted people. What Pollitt was hinting at here is that the people who are leading the redesign of our public services are a very long way from the people whose lives they are transforming.

Responses to the problem of cost draw on some of the core ideas of information systems, processes, data to think about transformation, digitisation, virtual government, channels and transactions. These ideas have to a varying degree taken hold, particularly dominating during the 2000s. Although some of the labels, like channel-shift and virtual government, have faded, the practices they helped legitimise have become embedded in the repertoires of public management.

The Problem of Convenience

The third problem is one of convenience. The keyword here is expectation. Emerging from the consumerisation of public service is a current and growing expectation for high-quality services and a responsiveness of public servants akin to other service and for-profit sectors. It is about waiting times, response to questions, availability of support, designing systems that people can navigate, offering choice in how and when to receive a service, how to navigate the system and accessibility. This has given rise in interest in formalising customer service functions, the use of customer relationship management (CRM) systems and the development of online and mobile applications to offer fully automated channels to complete common transactions. All these create a set of services that make sense from the user rather than often fragmented organisations/professions/government departments/state/public and private sector organisations responsible. The problem of convenience is how to create public service that is joined up and 24/7.

Central to understanding the problem of convenience is the idea of customer. Despite critical discussion of the growth of consumerist discourse of public service provision (Clarke 2006; Clarke and Newman 2007), it seems the idea of customer is now firmly established among public servants. Whilst the label "patient" remains in health, "client" and "service user" have been replaced by "customer" in many contexts. "Customer" is written into the locations and job titles of those responsible for public encounters both online and face to face: customer service centres, customer contact centres, director of customer contact, customer service advisor. The off-the-shelf systems public agencies use are CRM systems or CEX (customer experience) systems. Like the private sector much technology aids those frontline "contact employees" to offer customers "effective service recovery" and offer "spontaneous delight" (Bitner et al. 2000).

Whilst the likes of Jung (2010) argue the customer label is problematic, because it assumes availability of choice, public agencies have looked to technology to enable patients to have easy access to online reporting of inspection performance and user ratings in order to make an informed choice of provider for a given procedure. Technology also enables, it is argued, the ready collection of user feedback on the usefulness of websites or visitor satisfaction. The growth of third-party online review platforms (Facebook, Google, etc.) means public agencies are subject to the same

level of public scrutiny as a hotel or purchase on eBay or Amazon. Furthermore, the widespread availability of smartphones that can capture or livestream video of a public encounter with a civil servant on a video sharing platform like YouTube introduces another layer of public accountability and sousveillance (Mann et al. 2003) for the public service "customer".

One response to the problem of expectation is a principle of *once*. A long-established characteristic of public service is the requirement for citizens to navigate a plurality of different systems and buildings, repeating the same information over and over. The exemplar is the experience of a hospital patient who whilst in hospital receives a visitation from a variety of different specialists. Each visit the patient is asked to repeat their story. Or a family living in relative poverty with a range of complex needs has to navigate a range of different systems resulting in information scattered across a variety of systems. The alternative is to develop systems where there is only a need to "ask once". That is, once the information is lodged so many processes can be automated. A person who has sold their car and requires a refund of road tax does not need to contact the agency to arrange a refund: their payment details are on file. Dunleavy et al. (2006) conceptualised this as "needs based holism". As subsequent transformation projects have removed unnecessary face-to-face encounters, public agencies have consolidated offices and centres into "one-stop-shops" (UN 2004) and online this has resulted in single-user portals, MyAccounts. In both the physical and online versions, there is a sense of designing the services around user need rather than historic structure of state institutions. The UK government's decision to follow the likes of Denmark to roll a range of welfare benefits into one in some regard follows the same principles.

A third idea in response to the problem of convenience is platform. Just as Apple or Google set up a platform for third-party developers to create useful mobile apps, this offers a model for government: government as a platform (O'Reilly 2011; Barrance 2015). It led to a push for governments to publish data in a reusable form as part of open data initiatives. However perhaps the most prominent role for the idea of platform is the consolidation of power into a handful of technology giants, in the West: Amazon, Facebook, Google, Apple and Microsoft; in China the likes of Tencent and Alibaba dominate. These tech giants compete to host government data as more shift away from servers to storing data in "the cloud". A great proportion of Amazon's profit comes not from sales of

products but from its web hosting. While Microsoft have dominated for years with its Windows operating system and software, the likes of Google are offering an alternative platform and set of apps for its government customers. This then enables the emergence of platforms for cognitive computing, for building virtual agents, chatbots, speech and image recognition. These major companies are establishing platforms that function as eco-systems for government (and business) to develop AI capability.

A fourth idea responding to the problem of convenience is design, giving rise to *service design* and *design thinking*, This interest in technique of service design is around mapping user journeys, and focusing work around personas.

> Service design helps organizations see their services from a customer perspective. It is an approach to designing services that balances the needs of the customer with the needs of the business, aiming to create seamless and quality service experiences. Service design is rooted in design thinking, and brings creative, human-centred process to service improvement and designing new services. Through collaborative methods that engage both customers and service delivery teams, service design helps organizations gain true, end-to-end understanding of their services enabling holistic and meaningful improvements. (Megan Erin Miller quoted in Stickdorn et al. 2018: L609)

All this sits at the intersection of design thinking and customer service. Stickdorn et al. set out the six principles of service design: that is, human centred on the experience of all affected, collaborative engagement of these stakeholders, iterative exploratory, adaptive and experimental, a sequential visualisation of actions, real research and prototyping of needs, holistic services addressing needs of all stakeholders. In practice this draws on a number of tools and techniques—drawing on available data, development of personas, customer journey mapping, stakeholder mappings, service prototyping and business model canvases. Ideas of service design have created a role for specialist consultancies to work hands on with teams in public agencies to encourage greater reflection on what it is like to be a user of their service, to humanise it, to create a visualisation of the journey they make and the stakeholders involved. Their techniques can be used to shock decision makers with some choice examples of protracted or painful journeys. For example, their research reveals it takes three weeks to get a repeat prescription. The use of prototyping allows for the consideration of radically different ways of structuring a process. It might involve

technology such as the development of an app or a digital process, or it could be about changing the layout of a facility. But it also opens up questions about radically different ways of structuring or funding a particular service.

Just with the rise of design, it has been a fad for things to be agile. It has excited public managers who have been versed in the application of traditional project management techniques. Ideas of agile development first developed in the software industry and manufacturing have influenced models of project development and delivery in government and public services. Some have labelled this Agile Innovation Management (Mergel 2016), characterised as a process of prototyping and interaction, of testing, of sharing. Various practices have been embraced by public servants: use of Kanban Boards on the office wall to show progress towards project goals, morning stand-ups, show and tells, forming and briefing a small sprint team to spend a month developing a solution. It brings to new terminology an energy and excitement not characteristic of traditional bureaucracy. It also brought with it a growing interest in software like Slack and Trello to support this kind of approach.

To summarise, the problem of convenience is expressed as the expectation of consumers of public services. It has invited technology providers to offer a range of customer service "solutions" and in turn helped to blur the distinction between public service and private sector customer service. It has also brought in ideas of simplifying and consolidating systems to automate and integrate previously fragmented processes. There is an emphasis on redesigning services around customer need rather than the organisation; this also brings in a willingness to iterate, prototype and fail early as agile methods are adopted.

The Problem of Connection

So far many of the ideas presented above have offered technology-inspired solutions to inherent problems of frontline public service. Yet such reforms can give rise to additional problems—namely connection. Attempts to bring efficiencies, to make services self-service, to standardise and performance manage public service delivery, to close down local offices, to consolidate library provision and to remove police from their neighbourhood beats all have consequences. Such reforms can dehumanise public services, and serve to remove the opportunity for social contact, or opportunities to place hand on the shoulder, express empathy, to sympathise, express

compassion, to build trust. These reforms can remove the opportunity to make eye contact, to persuade somebody to quit smoking or to sit the exam, to get down from the bridge or to put down the gun. Front line public servants have learnt to understand a person's situation not based on their data on a dashboard, but their body language, the presence or absence of dirt under their finger nails, their smell as they enter the office. This problem of connection is traditionally assumed to be best done face to face, human to human. Are there technology-based ideas that offer a corrective?

The first idea to consider is the prominence of the idea of "social", particularly for marketing and communications teams within public services. Since around 2010–2011 public agencies have formalised their use of corporate social media. Tools like Facebook, Twitter and Instagram became a means to broadcast, connect and converse with users of their service (Mergel and Bretschneider 2013; Heverin and Zach 2010; Mergel 2012, 2013; Meijer and Thaens 2013). Later came work exploring the political consequences of social media and its role in propagating misinformation and use of highly segmented and targeted political advertisements (Margetts et al. 2015). It is important to state that the informality of language and interaction can often mask bureaucratic caution and reputation and brand management. The informality of the exchange does not necessarily equate to the authenticity of face-to-face communication.

Another idea in response has a status as ubiquitous as digital government: smart. The idea of smart has enjoyed a meteoric rise and is attached to a wide range of devices and entries—smartphones, smartwatches, smart home, smart technology, smart cards, smart digital ID, smart cities, smart government and smart-technology empowering frontline interactions (Marinova et al. 2017). The rapid growth of non-human objects connected to the Internet is enabling people to have a "smart home" and smart light bulbs and towns to have smart rubbish bins, parking meters, lampposts—all part of the growth of what is known as IoT (Internet of Things).

Over recent years a good proportion of the scholarly attention on the role of technology and government reform has focused spatially on the idea of the smart city (Giffinger et al. 2007) With predicted growth of urbanisation, smart cities were argued to be the solution. Although the focus was dominated by connected objects described above, there was also a wider consciousness about smart cities offering sustainable future for humanity. Several showcase smart cities were frequently mentioned. Here there is a distinction between brownfield and greenfield smart cities.

Whereas the former is about designing a city from scratch to be smart, the latter is about embracing the challenge of how to overlay smart city infrastructure on an existing location. Here's one of the better attempts at a definition:

> We believe a city to be smart when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance. Caragliu et al. (2011: 70, cited in Meijer and Bolivar 2015)

Meijer and Bolivar's review (2015) finds a separation in the literature between work focusing on the technical aspects and social aspects of smart cities. The desire for governments to engage with large technology firms in cultivating smart cities has also attracted criticism, such as Toronto's Sidewalk Labs partnership with Google, with some arguing it as an privatisation of the city and an extension of surveillance capitalism where data are extracted from private experience, conveyed to computational factories and fabricated into behavioural predictions and then these predictions sold to business customers that trade in human futures (Zuboff 2019).

Whilst ideas of social and smart both offer something of a corrective to the problem of connection set out above, much of the attention more recently is around artificial intelligence (Wirtz and Müller 2019; Agarwal 2018; Young et al. 2019; van Engelenburg et al. 2019; Bullock 2019). Albeit difficult to quantify, take, for instance, successive annual UN reports on e-government, that until recently contained little or no mention of artificial intelligence, or AI. The 2018 report contains 130 (United Nations 2018) mentions.

Compared with earlier iteration there is a notable humanisation of the discourse of AI in recent years. Some focus on the opportunity for AI augment qualities (Daugherty and Wilson 2018), to offer unprecedented degrees in personalisation in the service (Hao 2019). It offers something counter-intuitive to the dehumanising standardisation of information systems. If allowed to play a role in frontline public service, it is argued that AI can offer something, paradoxically, more human than currently offered. The current offering is something of a hybrid, with public servants increasingly expected to interact with electronic systems as they go about their work with citizens. The problems of connection that stem from such practices are corrected through greater involvement of AI—as an assistant to public servant, to citizen or both.

But AI is an umbrella term, incorporating a whole range of ideas and principles. There are definitions—like this—

> Artificial Intelligence (AI) is an umbrella term for a range of algorithm-based technologies that often try to mimic human thought to solve complex tasks. Decisions made using AI are either fully automated, or with a 'human in the loop … Things that humans have traditionally done by thinking and reasoning are increasingly being done by, or with the help of, AI. (ICO 2019: 4)

Put simply AI is about developing agents and giving them goals. The degree to which the agent is supervised or unsupervised to help achieve that goal will vary. It brings in a variety of ideas: but two important ideas at this point: *intelligence* and *learning*.

Some AI researchers, wisely, warn against the temptation to bottom out a definition of intelligence, arguing it is futile and what matters is what can be achieved with AI not understanding what happens within hidden layers of neural networks (Ashri 2020). But given the influence of neuro-science on advances of AI there is some merit in exploring the types of intelligence public servants are drawing on in their role.

Let us (following Fry 2019) consider what a public servant is capable of. A local neighbourhood police officer, working and living in same area for ten years. The officer will be able to remember the beat he normally walks. Or the route a particular known offender usually operates—and how to walk there (a capacity to replay). He will know that if he wants to get his arrest rate up for the evening he needs to go to certain locations where offences are more likely to be happening. He makes this decision based on previous shifts, previous rewards. When asked to give evidence in court he can interpret the notes in his notebook and talk fluently (drawing on his episodic memory). If he spots a car parked out of sight with a strong smell of cannabis he will be able to imagine what is happening (drawing on a capacity for mental stimulation); similarly, this capacity means if his boss nods at him in a particular way he knows to interpret this as "turn a blind eye" this time. If he gets a new job working in a new police force, the neighbourhood might be different but he is not starting from scratch; he has an ability to draw on his previous experience as an officer and apply this to learning how best to function in his new role. Whilst his boss may reward him if he focuses on particular criminal activity such as car crime or burglary, he is also motivated with a range of intrinsic motivations that give him particular pleasure and these (public service/conservative/Islamophobic) motivations may differ from those of his

colleagues. At the end of his shift he remembers to put his police phone and radio on to charge so that they are ready for him in the next morning.

When scientists seek to develop intelligent systems, with agents capable of independent thought, their aim is to try draw on some of these human capabilities; in this case the police officer has the capacity—to replay, to locate, to predict likely outcomes of particular actions, to recall memories, to sense (see/smell), to imagine, and to apply knowledge and experience to new settings, to learn from both extrinsic and intrinsic rewards.

This brings in the second idea, learning, as distinct from programming. AI researchers distinguish between approaches of AI in the 1960s–1980s and those in recent years. It is moving away from programming agents with intelligence (how to play chess) but rather programming reward systems that can enable agents to learn. They train them on a game or a task, telling the agent not how to play the game with a set of step-by-step instructions, but rather giving them a goal and a simple reward mechanism (1 good, 0 bad). Multiple copies of the agent can then play the game over and over, learning which particular combinations of moves were successful. Deep learning is a form of machine learning. Approaches differ based on the degree of involvement of humans in the process. In unsupervised learning it can result in hidden layers of decisions unknown to the researchers. This is analogous to the difference between our conscious minds and unconscious minds. We know how to play chess and could teach a child the step-by-step rules. But we cannot easily put into words how to see, hear or walk, or for that matter comfort a grieving mother shortly after telling them their child has been killed in a car accident. The skills that experienced public servants possess may in some ways be taught, but much of it is about learning from experience. Historically it has been this subconscious ability that has been viewed as near impossible for machines to replicate but something increasingly possible.

Conclusion

By highlighting four problems of frontline work in control, cost, convenience and connection it has brought to the surface a long list of technology-related ideas from the general to the specific. I accept that none of the ideas surfaced sit neatly in their box—transformation is more than about cost; concepts like smart and digital are so nebulous they can mean everything and nothing. But by organising the chapter in this way, it offers something of the evolution of ideas around public service work over recent decades. Whereas earlier work focused on using technology to

bring about efforts of control and subsequently costs, it is only more recently that we find explicit consideration for the human experience, conisderation for the design of services and latterly for matters of connection, empathy and trust.

Organising the chapter here as a set of ideas chained together by four perennial public service problems reveals why the idea of AI has taken hold in public management. Its appeal is not just that it offers a corrective to the dehumanising effects of successive waves of digital transformation, but rather it offers a level of connection better than the finest, best resourced, least burdened public servant on their best day. Furthermore, it is argued, the deployment of AI in our public services offers a response to the other three problems: control, cost and convenience. Such is the appeal; such is the grip of the idea of AI.

The literature it seems is polarised—whilst some can barely contain their excitement for the potential of these rapidly emerging capabilities, others express caution or further catalogue how AI could be catastrophic not only for public service but for wider humanity (Barnhizer and Barnhizer 2019). This presents an empirical challenge of understanding how the technology industry is exploiting AI as an answer to the four problems and how public servants, particularly those in frontline work, are making sense of the tools and solutions on offer.

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CHAPTER 3

AI, Public Service and Research Methodology

The aim of this book is to find ways of understanding how policy actors are playing a role in articulating support or opposition to the advancement of AI and related technology at the frontline of public service. To do this required three careful design decisions. This chapter sets out those decisions and details fieldwork and analysis informing the remaining chapters.

1. To bracket what we mean by frontline public service.

There are a host of challenges of researching frontline work that have been further complicated following successive waves of public service reform. Whilst we can suggest that frontline are those who are less likely to be in managerial or supervisory positions and more likely to be either working hands on/face to face or in regular direct contact with their clients/customers/service users. Decisions to outsource or contract out certain roles—such as cleaning, call centres, maintenance—means there are tens of millions of people across the world delivering tax payer–funded services who are employed and managed by profit making companies.

A further complicating factor when considering frontline work internationally would be what is public sector in one country is private in another. Where there is particular disparity would be in major utilities like water and in health systems. Additionally, there is the problem of disciplinary silos, with researchers researching education, or health, or local

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government or policing, for understandable reasons but when something as potentially fundamental as the widespread deployment of virtual agents/robots into frontline public service, there is need for interdisciplinary research.

2. This is an emotive subject, but also highly technical and somewhat speculative.

Such a category of subject matter is commonplace in technology, but not exclusively so. The recent referendum on exiting the European Union is one such example where the electorate were given the option for in/out. A great number of those who advocated a Remain vote argued that people were not offered sufficient information about what they were voting for. It was advantageous for those promoting a Leave vote to emphasise the various advantages of leaving and to play down the uncertainties or technical aspects. There are parallels with the idea of virtual public servants.

Whereas much of AI is about the development of systems that can learn, with various degrees of supervision and oversight, the media, as we saw with the case in Chap. 1, get more traction by articulating the idea of robots. Public servants have variable exposure to robotics and virtual agents. Whereas some will have involvement in experiments with a variety of tools, others will work for agencies where they are only just starting to digitise paper files, let alone be deploying robotics. Public servants will also have experience of advanced technology in their personal lives, and as a result increasingly finding a disconnect between the tools they use at home and what they have at work. A doctor manipulating a device running Windows XP at work could choose to have a smart home, with voice assistants in every room, heating/lighting/security in the cloud and robotic vacuum cleaners and an electric vehicle capable of autonomous driving. Public servants could also be transitioning from a different sector where the level of automation and use of technology are strikingly different from that they are experiencing in work. All this presents considerable challenges for empirical research.

3. To capture a sense of how technology companies are propagating discourses of virtual public service and frontline work.

In an industry riddled with jargon, the practice I describe is known as B2G marketing. That is, the marketing of products from business to

government agencies/public services. This is in contrast with B2B (business to business) or B2C (business to consumer). Just as some write off the value of social media content as data source, it is easy to do the same with this. It is easy to pour scorn on the repetitive use of familiar tropes and techniques. Look no further than the two-minute marketing video. Video sharing sites offer free background music—ukulele or marimba—offing a friendly voice-over:

> Meet John. He loves his job but finds it hard to answer all emails he gets in a day. If only he had an assistant to give him a hand. Well now he does—meet Ai.dan. Ai.dan is an intelligent assistant who learns on the job and frees up John so he can do what he loves and what he does best.

Companies also share recordings of webinar presentations or it is popular to have a panel discussion at a conference—usually featuring speakers from a particular technology company and then two or three current "clients"—that is, senior managers who have been using the tool in question over recent months and are already starting to see "results". Other written B2G marketing materials include two- or three-page leaflets, ten-page brochures, scientific "white papers" and longer-form books. Another word for this material could be "grey literature"—but unlike, say, a think tank discussion paper or a government white paper, there is no guarantee that it will remain available for long. As new versions of a tool are released, videos and PDFs disappear without trace. Similarly, as start-up technology companies either fold or are acquired by larger firms, the earlier material is deleted. Such material is ephemeral. And yet they serve to give public servants the language to discuss this new technology with their organisations and constituents.

With these three challenges—of an ill-defined notion of what we mean by frontline public servant, an emotive and speculative subject matter and somewhat ephemeral source material—what are the implications for our research design?

In response this book does three things: It focuses on public servants who are employed in one of five domains of public service. It is qualitative but draws on a variety of creative and systematic methods. And third it captures and considers B2G marketing materials as a date source alongside interviews and card sorts.

The main backbone of this book is based on a series of in-depth multi-method interviews with frontline public servants and their direct line

managers. Given shear volume and variety of frontline work I sought to constrain this by identifying five domains of public service and some named roles within. This then aided the search for examples and to help guide participant selection.

The nature of the project is qualitative, favouring depth of engagement gained from longer than average face-to-face interviews and Q-methodology card sorting. Whilst a conventional survey-based research would see the research participants as informing the research process by conveying facts and/or opinions, this is closer to a co-production of knowledge (drawing on principles of William Stephenson, discussed below). The role of the participant is to help give meaning to the subject matter. Whilst the researcher can read current policy and published research, participants can help to contextualise and connect. This comes from interviewing face to face in the participant's place of work—to observe them in their natural habitat.

The interviewees focused on a range of regions of England, a diversity of the five domains and a mix of both low/moderate and high-technology adoption.

The five domains have been discussed above but there is a need to define what we mean by higher- and lower-technology adoption. The intention here was to include public servants who are currently working with known or widely discussed examples of AI-related technology. The assumption here was these would have a higher degree of knowledge or consideration of AI technology, but there is no assumption they are more or less positive about their use. The aim here was not to pretend this somehow a representative sample of "all public service". Such an approach would require many more participants.

The sampling has been purposeful to obtain within the scope of the study as broader range of service areas, role types, technology experience, channel (face to face, telephone, webchat, frontline management) and locality as possible. It should be noted that the domain local and welfare are somewhat overlapping given this sample, given the range of roles.

Documents

This book is primarily focused on the view of public servants, but in order to maintain a sense of how their work is being used we collected a sample of online reviews where people had recently experienced either a face-to-face encounter or had contacted a public agency over the phone or online.

Online Reviews

The source for these reviews was the Google Reviews, or more technically known as the reviews of businesses listed on Google Maps. Whilst primarily associated with reviewing a business, public service buildings are also listed here. In an era where more and more interaction is moving online, the Google reviews offer us insight into experiences of face-to-face public encounters. Search for a type of public service and the name of a town or city and the top hit on Google will likely be the website—but alongside will be the listing from Google Maps—offering directions, address, opening hours, Q&A, popular times, the average time people spend in the facility and reviews. The reviews include an average score out of 5 and a link to a list of free text reviews, organised by "relevance" (although can be ordered by date or rating). Each review includes the name and image of the reviewer, the star rating they are giving out of 5, how many months/years since the review, how many reviews and/or photos they have published on the platform previously, how many people have "liked" the review. Reviewers who have published many reviews from a given locality are also awarded a "Local Guide" badge. Local Guide is awarded once a user has clocked up 250 points. Points are awarded for things like the number of reviews and photos/videos posted and the number of questions answered. The highest level is a Level 10 guide with more than 100,000 points worth of contributions to the platform. As well as offering rewards for contribution, these additional features are designed to allow readers to judge the trustworthiness of a review/reviewer. If the business/organisation being reviewed has been verified by Google they can also reply to the review.

We chose ten examples of public facilities, two from each of the five domains:

Hospital
GP Surgery
Job centre Plus
Care home
Town Hall
Neighbourhood office
High school
Primary school
Police station
Magistrates court.

We also selected 15 locations in England. Locations were chosen by randomly selecting one local authority from each decile of a ranked list of authorities on the Index of Multiple Deprivation (IMD). Although deprivation is not a key variable, the IMD combines a range of factors including health and educational factors. Sampling offers a range of urban and rural, affluent and deprived localities. A town/city within the local authority was chosen as a search parameter (e.g. "GP surgery near Basingstoke").

The 15 locations were: Prescott, Barnsley, Halton, Birkenhead, Cleethorpes, Stockton on Tees, Huddersfield, Bournemouth, Leeds, Stockport, Stafford, Milton Keynes, Chipping Barnet, St Albans, Oxford. Searches were performed between 23 and 27 July 2018. Because some reviews are star ratings only, the focus was on text-based reviews. The text of the most recent five text-based reviews for each locality were recorded. Reviews of ten words or fewer were omitted. A sample of the reviews are used in the introductions of Chaps. 4, 5, and 6 and are subject to machine classifiers in Chap. 9.

B2G Marketing Materials

A central focus of this book is to capture a sense of how the idea of AI is being sold to government.

The very nature of this industry favours online methods of marketing with websites featuring comprehensive overviews of the technology, videos, webinars, diagrams, images and what are known as "use cases" and examples of current and previous use. Most of these companies sell into a wide range of sectors, so tend to offer tabs which filter the content or relevant products for retail/finance/insurance/health care/government. Public services tend to be listed under the umbrella of government with heath care often being separate. There are also a great many companies that specialise in just one domain of public service.

Working with these data should come with a health warning. This is a fast-moving and highly competitive environment. To survive these companies have to promote their products without giving too much away about how (or if) their product works. These materials are designed to encourage public servants to "Get in contact". Several companies use techniques like offering a report or some "research" on the industry, but require customers to enter details about their organisation—like the size and business of the organisation. They also invest considerable resources in producing high-quality video content about existing clients. In order to differentiate their products there is a tendency to coin new words or combine words to

create a point of difference. Working with this data is a sensory overload. Given these materials are designed to grab and maintain attention and pursued, the researcher can find themselves falling victim to the hype.

A second opportunity to observe and experience B2G marketing is at one- and two-day technology conferences and "workshops". The easiest way of identifying and differentiating these from other kinds of trade or association conferences is one simple principle—the technology companies pay to attend and the event is free (or at least very cheap) for the public sector. The venue will be a conference venue in a large city. There are three spaces typically—an area set out with rows of chairs and a stage for plenary sessions. A space for lunch and refreshments and an exhibition space where the technology companies pay a few thousand pounds for a stand. These stands can range from the simple table and pull-up banner, to something amounting to a theatrical set complete with hired furniture and props. Also popular is to integrate as much "tech" as possible into the stands. Some conferences use wireless Bluetooth headphones, to allow them to include plenary presentations among the throng of the event spaces. Stands feature robotic arms, a chance to speak with a humanoid robot and touchscreen demonstrations. The table is laden with freebies—mugs, pens, folders, sticky notes. Details of the products are printed full colour on thick glossy cardstock paper. Delegates drift from stand to stand, and staff from the companies sit behind their laptops, breaking off from their work to engage in yet another conversation about their solution. At some point in the conference a senior member of the organisation might take to the stage to talk about their company to a larger group. They might give over part of their slot to a current user of the product—which essentially means paying for a team of public managers to travel to the workshop and help spread the message. Delegates are free to roam around the market place or workshops/talks; however, organisers and exhibitors will scan the QR code on their badge in order to track their interest and aid follow up.

In many cases the following remain online for a few months after the event: videos of the plenary talks, a list of exhibitors and their bios, a PDF of the programme.

Some of the larger conferences I attended included:

- NHS Expo Manchester 2019. 4–5 September 2019 https://www.england.nhs.uk/expo/about/
- NHS Expo, Manchester, 5–6 September 2018\https://www.england.nhs.uk/expo/2018lookback/main-stages/

- Robotics and Artificial Intelligence Industry Showcase, Salford, 12 March 2019. https://ktn-uk.co.uk/news/highlights-from-the-robotics-and-artificial-intelligence-industry-showcase
- March of the Bots—London, 23 November 2018 https://www.ibm.com/blogs/think/uk-en/watson-summit-london-2017/
- IBM Watson Summit—London, 10 October 2017. https://www.ibm.com/blogs/think/uk-en/watson-summit-london-2017/

I also attended public sector trade conferences with technology exhibitors:

LGA Conference, 5–7 July 2016—Bournemouth https://www.local.gov.uk/lga-annual-conference-and-exhibition-5-7-july
SOLACE Summit—Manchester 1–3 November 2017. https://events.solace.org.uk/events/

Another substantive piece of work involved working with a research assistant to systematically search for examples of AI being used in frontline public service. This involved the development of an extensive database of technology companies and products being marketed to the public sector.

The research involved the development of a data base in order to identify possible case study examples in health, social care, education, local government and criminal justice. The database included reference to technologies that encourage users to "self-serve" (through websites, apps or kiosks). The database focused on technologies that involve citizens/users interfacing with artificial intelligence–powered chatbots, virtual agents and voice assistants. Examples for the database were identified through successive web searches and via a series of keywords on a social media platform aggregator—DiscoverText.com.

A data extraction sheet was used to list and note content of the marketing materials: type of technology (management software/robot/Self-service/contact centre/Chatbot/AL, virtual agent); form (physical/website/other); URL; date accessed; domain(s); name of example client; short description of what technology is and its purpose; link to a promotional video; text examples linked to cost/control/connection/convenience.

Here we developed a sheet of 85 examples of AI use in the public sector from around the world. The main role of this focused search during the month of July 2018 was to start to develop a sense of the industry and how to best organise case selection and research instruments. From this initial list a shortlist of potential cases was identified.

Many of the examples feature in Chaps. 4, 5, 6, and 8. Since this initial search in July 2018, additional cases have been identified from additional hand searches, press releases, conference materials, newspaper indexes and news coverage. Additional examples were also suggested by interviewees. A collection of some 100 paper materials were collected from trade conferences.

Where a video was deemed particularly relevant to the focus on AI and frontline work the video was professionally transcribed. Twenty-five videos were transcribed in full. The rationale for transcript was two-fold—to first and foremost capture the argument of the video, given it could be deleted or replaced at any point and second to make it possible to perform discourse analysis alongside other written forms.

Cases and Extended Examples

In this book there are three case examples, one in each of Chaps. 4, 5, and 6 that each follow a similar structure: the identification of a technology product being used in the public sector, the capture of the B2G marketing materials and transcription of any associated video content. Each case drew on five or six face-to-face interviews with a range of policy actors involved in the procurement/adaptation or implementation of the product. This includes at least two people using the product on a daily basis in their interactions with service users. All interviews were face to face in the workplace, with interviews digitally recorded and professionally transcribed. Where possible a follow-up interview was carried out with the provider—two of the three providers agreed to be interviewed. These were carried out over a video call.

In all three cases they agreed to be named although names of those interviewed are anonymised. The three cases are all local authorities: a customer service centre in West Yorkshire, a contact centre in Buckinghamshire and a library service in Greater Manchester.

Case selection. The cases were purposefully selected around three modes of interaction—face to face, remote contact and self-service. Additionally they should be relatively established for two years or more rather than being trialled.

The contact centre case came up in the initial search for examples as it had received coverage around a nomination for an industry award. The decision to select this was further compounded after meeting with project staff at a Local Government Association conference.

The self-service case selection was different in that it started with identification of the tool, but it was in widespread use. The local

authority was selected because they were using it extensively in all of their libraries, whereas others were experimenting or only using in a handful of locations.

The face-to-face example started differently again. It was initially identified as an example of self-service; however, after an initial meeting the technology used for managing the customer service centre was identified as well as suited as an example of managing face-to-face interactions. The majority of products identified overall were more about remote contact or self-service, and many that were face to face were at an early stage of development.

International Examples

Whereas the three cases were about showing the similarities and differences in how the products are discussed by different policy actors, the aim of these extended examples was to offer salient examples of some tools in use across the world. In many instances these named cases included conversations with representatives at conferences and workshops and/or over email/in phone calls. During the writing of this book the author also spent a week in Estonia which involved a visit to a local library, presentation at the eEstonia Briefing Centre and conversations with two leading professors in the area.

Public Servant Interviews

The aim was to interview a range of frontline public servants in both professional and customer service roles. Aside from the three cases described above—a further 30 public servants were interviewed. These included professionals like a social worker, a primary school teacher, an environmental health inspector, a hospital consultant and a junior doctor, and a clinical psychologist. Additionally facilities assistant, receptionists (2), leisure assistant, and call centre staff (2), teaching assistant, pastoral support officer and school administrator. The job roles were selected at random from (that big database of job types). I had hoped to also interview some other job roles but these were not possible in the time frame—probation officer, nurse, and planner. The above were recruited through established professional networks in my capacity at the University of Birmingham. The most fruitful method came from contacting former students (working in the public sector) who then signposted me to gatekeepers able to help me make contact with potential participants. Participants were sent an

ethically approved invitation email, complete with participant information sheet. Interviews took place between April and June 2019. Details of what the interviews consisted of are given below.

Police and Police Staff Interviews

Two additional groups of frontline workers were interviewed for this book: police and police staff in communications. This work contributes to the case discussed in Chap. 7. In total 11 police officers (or more specifically 8 officers and 2 Police Community Support Officers) and 6 communication staff were interviewed. The process began by identifying a case police force that was active on social media. Three forces were shortlisted; the first force to be contacted agreed to assist in my aim of interviewing police officers who manage social media (Twitter) accounts as part of their role. A shortlist of officers was identified from social media analysis of the force accounts. Those shortlisted were actively using their Twitter accounts on a near daily basis and worked in different types of policing roles and were of different ranks. Dates for case visits were set and available officers were approached by the administrator assisting with the study. All agreed.

The officers ranged from a chief superintendent, a superintendent, a chief inspector and a neighbourhood sergeant, and four PCs, one with specialism in Youth engagement, one in response and two traffic cops. I also interviewed two PCSOs, whose role reflected the more day-to-day face-to-face interaction and engagement with the public.

The officers were interviewed in July 2016. A further five interviews with the three members of the social media team, the communications director and a senior manager were held. The 15 interviews took place over a two-week period in the offices of the communication team, with no more than three interviews a day and space in between to allow time for observation of the team at work. Additional observation fieldnotes were written up within 24 hours of each visit. Details of the content of the interviews are outlined below.

Research Instruments

Research Instrument 1—Frontline Topic Guide

Each of the frontline interviews was guided by the following topic guide (see Box 3.1). The opening question was designed to put the respondent at ease and encourage them to talk broadly about the nature of their role.

Box 3.1 Frontline Interview Topic Guide

Service—What is your role? What service to the public?

Encounters—By what means does your organisation (or the public organisation you are advising/supplying) interact with citizens/clients/service users? (channels of communication, methods, media)?

Changes—how has mode changed over time.

Photo-prompt exercise (10–15 minutes)

Q-sort exercise (25–35 minutes).

What are the challenges facing your frontline service (probes—cost, convenience, control, connection).

Are there any methods of interaction you use when interacting with businesses/services/friends&family you think could work in this organisation? And any that wouldn't work? (probes around transport, social media, health, energy, telecoms).

Are there somethings you can achieve when working face to face with a citizen/user that would be difficult by any other means?

The second question then focused on the way in which they work with people—frequency of communication. This sometimes required considerable probing as people tended to focus on the most common form of communication—such as face to face in a classroom. Others wanted to emphasise technology because they knew from the invitation/project information that it was my interest. The question of what service users were called also prompted some unexpectedly rich insights. The question of changes was posed by asking them to imagine what work was like on day one—to allow them time to describe this. Participants seemed to enjoy this and I gave them plenty of time to start to make comparisons between then and now.

The interview then featured two card-based exercises (described further below). Time permitting questions 4 and 5 were asked, although much of this was often covered in the previous sections. One question that was asked to all was around the limitation of channels. Although on face value this is a question about face-to-face service, it is something of a nuclear question in how it starts to reveal if and how respondents distinguish between the different channels through which they work with local residents. Further still it starts to reveal something of any underlying public service ethos or what they believe is unique about public service work.

Research Instrument 2—Visual Cues

What was particularly striking when conducting these interviews was the disparity in how much frontline public servants knew or, for that matter, cared about the growth of AI and technology in general. All, without exception, could recall bad experiences of technology at work. But several also had a very active interest in technology and were optimistic about the future. As expected the overall awareness of what kinds of AI and robotics were being deployed was more advanced in the interviewees from the three case studies compared with the remainder. This was anticipated. However, I think I was surprised to find that in every case the employing organisations of my interviewees were experimenting with a range of technologies and many had recently experienced large-scale transformation programmes that had meant fundamental changes to the way they worked.

In order to orientate those who were less interested/knowledgeable in the use of AI/robotics I presented respondents with a set of 18 printed photographs. The 18 examples were identified from the work described in the previous section. Although far from exclusive they represented a range of different domains; some were physical robots, others virtual agents. Some were primarily interfacing with users/customers, whereas others were designed as service robots or virtual assistants to frontline workers themselves. Three of the 18 were also used by the three case studies. One of the images was purposefully of Amelia—featured in the opening chapter.

The 18 images were mainly used with the non–case study participants. Although at various points during some of the case study interviews the cards were occasionally discussed as conversational prompts. Most of the images were screenshots of a demo version of the software, or from proportional material. The interviewee was handed the deck of images. They were asked to consider one image at a time at their own pace. I would briefly introduce the image: a couple of sentences about the name of the product, the intention of the company behind it and one or two examples of its use. I would answer further questions; otherwise, I encouraged the interviewee to give their first impression—do they like the look/sound of it, have they experienced something similar?—and some would go further and think how I would use it in my work. In one case, an interviewee went through each relatively quickly giving her general opinion and then spent a further 25 minutes going through each again reflecting on how it would work in her organisation. This was a hugely insightful and enjoyable process to watch—and

despite having been through these products several times—it made me think about the so-called "use cases" for these products in completely new ways. The findings of these discussions can be found primarily in Chap. 8.

Research Instrument 3—Q-Set

Q-methodology (hereon Q) was first developed by William Stephenson in the 1930s and refined into a comprehensive methodology (1953, 1972). Stephenson left an extraordinary legacy. Q is advocated as a scientific method of studying subjectivity. More precisely it allows the systematic exploration of shared subjectivity, expressed as shared viewpoints on a topic. Q has been widely applied across the human sciences (Brown 2019). Much of my previous work has stemmed from collaboration on Q projects to better understand change in public management and public services (Jeffares and Dickinson 2016; Jeffares 2014; Skelcher et al. 2013; Durose et al. 2016). A role for Q in policy analysis is firmly now established (Durning 1999; Ockwell 2008), as is its role in identifying policy discourses within policy (Barry and Proops 1999; Jeffares and Skelcher 2011; Kroesen and Bröer 2009). It is increasingly used as a means of understanding policy actor perspectives and attitudes across a range of settings including around environment (Steelman and Maguire 1999), health (Cross 2004), and as a means of facilitating dialogue and conflict resolution (Focht and Lawler 2000). It has also been deployed to develop stakeholder dialogue around the emergence of new and often poorly understood technologies (Cuppen et al. 2010).

Application of Q to AI as such is starting to emerge, to explore perceptions of AI (Kim 2019), and their use in health care (Scardoni and Odone 2019). This work builds on Q work that seeks to define human intelligence (Diaz 2011), and views around automation and business processes (Ponsignon et al. 2014) and implications of robotics and AI for professional capabilities (Rivera-Hernaez et al. 2019). Aside from a piece on the use of service robots in hospitals (Mettler et al. 2017), much of Q work around such technology is not focused on public service per se. But this sits alongside a growing body of Q work public management. Q has been deployed to understand subjectivities and motivation of public servants (Jeffares and Skelcher 2011; Brewer et al. 2000) and public service ethos (Salminen and Mäntysalo 2013). As a tool it helps us move beyond assumptions that somebody's stake in a policy, profession or job role

dictates their viewpoint (Dickinson et al. 2014). Additionally many, if not all, of the main frontline job roles have seen Q applied, whether it be parks and recreation (McLean et al. 2005), nursing (Akhtar-Danesh et al. 2008), teaching (Herrington and Coogan 2011), social work (Ellingsen et al. 2010), social care (van Exel et al. 2007), library services (Shrimplin and Hurst 2007) or policing (van Eijk et al. 2017; Bayerl et al. 2014).

There is now a well-defined process of a Q study—starting with the identification of concourse—a total volume of communicability on a topic. With ever greater international communication through Internet and social media this is getting somewhat more difficult to be exhaustive. The concourse is sampled and then given to participants to rank sort. This permits factorisation of the sorts. Those sharing a family resemblance are combined to produce ideal type sorts.

The statements for this study were drawn from a range of sources that reflect the volume of debate surrounding the introduction of AI and related technologies in the delivery of public services. Because public service can carry several meanings in different context the project focused on five domains of service. Although both overlapping in scope and far from exhaustive, taken together they offer a comprehensive reflection of public service. The five domains included: Health: with a focus on primary and acute care. This focused on the use of technology by general practitioners, nurses and hospitals, and paramedics. Local services. Here the focus was on services typically delivered by local authorities such as street and environmental services. Welfare—including social care, employment and disability benefits. Criminal justice—policing and prisons. Education—especially school age education, aged 5–18.

The project then set about finding examples of discussion of AI and related technologies for each of these domains in a range of sources. The sources were distributed across six main types:

Marketing materials included presentations, video, websites, pamphlets developed by businesses selling solutions, software, methodologies and idealised visions of how the technology can transform services. Many of these were identified through attendance at trade shows/public sector technology conferences, described above. Additional examples were identified by searching publicly available sponsor lists of recent conferences. Marketing videos were often rich sources of potential statements, some 25 of these marketing videos were professionally transcribed.

Grey literature from government and non-governmental agencies, research institutes and development agencies (OECD, European Union,

World Bank), trade literature discussing case examples of the use of AI and related technologies in public service delivery.

Social media, Twitter, review general platforms Google Reviews, and domain specific platforms such as NHS Choices, YouTube videos of public servant encounters.

Print and broadcast media: News media, Nexis newspaper database, documentaries featuring frontline public service available from the British Universities Film and Video Council (BoB) archive transcripts.

Textbooks developed for public servant education (e.g. nursing, teaching).

Academic literature—PDFs of articles and book chapters.

Q-Set

A critical task in the process of developing a Q study is how to sample from the concourse. Conventionally this is the establishment of a coding framework to as best as possible ensure the final Q set was representative of the diversity of debate.

Some 276 statements were identified from the sources described above. A coding framework was developed Although domain and source type had been a focus in statement identification, the coding framework was based on two dimensions (see Table 3.1).

The first dimension were statements that centred on service user, in terms of interests/expectations/motivations; secondly, statements about the service on offer, such as role or evaluations of the current standing of the service; and third, statements that centred on AI and related technologies and how these related to public service.

The second dimension was informed by the framework set out above: namely four motivations for technology use in public service delivery developed in Chap. 2, problems of control, cost, convenience, and connection.

Table 3.1 Sampling table

	Cost	*Convenience*	*Connection*	*Control*
Client	4	4	4	4
Service	4	4	4	4
Technology	4	4	4	4

Each of the candidate statements was coded twice, first by topic and second by motivation.

In order develop a Q set that was of manageable size for sorting by a diverse range of policy actors, it was decided to seek a set of 48 statements, a number that would be both manageable in a one-hour Q-sort interview and also allow a diverse mix of topics and motivations from the concourse identified. Table 3.1 shows the weighting, with four statements from each cell. This sampling process revealed several duplicates in each of the cells. Duplicates were stripped out and then four selected at random from the remaining. The remaining 48 statements were then lightly edited to remove mention of particular service users or service names (such as "benefit claimants", patients or prisoners), to make them potentially applicable to practitioners taking part. Given the aim of the Q-sorting activity is to identify what statements are meaningful to what groups of public servants, hence, the editing was light and there were no attempts to make a set of statements that would be meaningful to all comers. The first priority was to preserve the natural language expressed in the statement.

Two earlier versions of the Q set were piloted by one group of student nurses and a second one by two academic colleagues and a retired teacher. The aim here was to check wording and ensure instructions were clear.

Person Sample

Some 40 Q sorts were collected, 27 of which were carried out as part of face-to-face one-to-one interviews lasting between 1 hr. and 2.5 hours in length, collected from public agencies across four regions of England between April and June 2019.

The interviews then moved to a Q sort. Participants were handed the 48 statements each on a 2″ × 2″ card. The instruction was given your current role, "how much do you agree with the following statements?" Participants read each card and pre-sorted them into three piles: agree or disagree, or if they had no view either way they placed them on a third pile, neutral. Participants were then asked to sort the three piles into a response grid. The grid had 11 columns, arranged to force respondents to distinguish between statements (Fig. 3.1).

Participants were supported through the process. They started by laying out all of their agreeable statements so all were visible in one glance. They were asked to select their two most agreeable statements and then shown to place them under column 11 on the board. They then selected their next three by agreement and placed them under 10. This continued

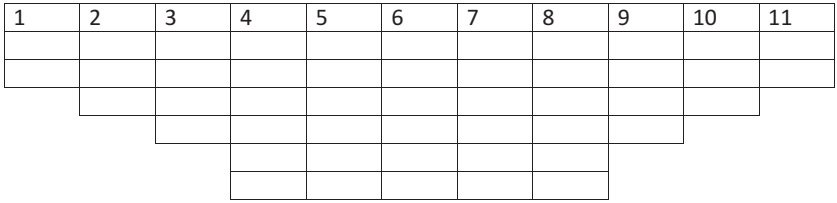

Fig. 3.1 Q Grid

until all the agreeable statements were placed. They then repeated the process working with their most-disagreeable, starting with their two most-disagreeable and placing these in column 1. Finally, participants were asked to sort the remaining "neutral" statements into the remaining spaces on the board. Everybody's neutral is different but this tended to fall around columns 4 and 5.

Before moving to questions about their Q sort, participants were asked to review their selections and make any changes. Only one of the 40 participants made any changes at this point. Participants were asked to talk through their selection for all five statement in columns 10 and 11, 1 and 2. In addition they were asked to point out and discuss one statement from each of columns 3 and 9. Additional follow-up questions then followed based on the sort and often connecting back to matters surfaced earlier in the interview. This discussion was guided by questions intended to probe how decisions are made of what channels are used, what challenges the organisation/service is facing, whether there are technologies they use as customer of other services (public and private) themselves or in previous roles. Finally all interviews finished with a question about what aspects of their role can only be achieved face to face.

A further 13 Q sorts were collected in an invited workshop. All participants were serving senior managers in UK local government. They were first given an overview of the key themes of the project and were presented the 18 images of automation used in the interviews. They were then guided through the Q sort. After sorting the 48 statements they were invited to write a short paragraph for the two most and two least agreeable statements (column 1 and 11). In the second half of the workshop they were presented with a preliminary factor analysis of their data combined with the interviews described above. Participants were given instruction as to how to interpret the findings and were asked to characterise the factor viewpoints.

Research Instrument 4—Police Topic Guide Police

The interviews that are reported in Chap. 7 draw on a different interview guide. This can be found here in Box 3.2. As with the previous guide the opening line of question focused on the role and how long the person had in the role. This also usually extended to consider what they had done prior to joining the force. The second question explored the motivation to use social media and to better understand how it is used. In the case of communications staff, for two of the interviewees their role was overseeing the forces' 300 or so social media accounts. In the case of many of the officers, they played down the time they spent on duty on social media and spoke of maintaining their accounts during commutes or off duty. The focus on tools for the police officers interviewed was driven by how much the limitations of current police equipment played a role in how and what they did on social media. For police staff the focus was more on what social media management software they were using and how this may have modified their practice. The question of activity was primarily an opportunity to get officers to share stories or examples of what they were posting or responding to.

During the period of interviews I had informed them I was monitoring their account with social media software, so this often came into the discussion. In some cases I brought up examples of posts on my tablet computer to enquire about the motivation to post certain imagery and so on. DiscoverText was used to capture and sift (Jeffares 2014) Twitter tweets and public Facebook posts and comments related to ten Twitter accounts

Box 3.2 Interview Guide—Police and Police Communication Staff—
Role—what is your role, how long have you done this role?

Balance—why do you use social media and how does social media feature in your day to day work?

Tools—what hardware/software tools do you use to manage social media accounts?

Activity—what do you do on your account? how and who decides what is and can be posted?

Demands—how do you field requests to report crime,

Trust—how do you respond to suspected hoaxes, trolling, abuse through social media?

managed by the police interviewees together with the main force corporate Twitter account managed by communications staff. The number of tweets captured in total was 14,167—ranging from 107 to 2613 per account over a 55-day period in the month before and the month after the interviews. I also captured mentions from two of the forces' corporate Facebook pages which totalled 17,611. Only communications officers had credentials to use Facebook.

The question of activity was also about agency around how accounts are managed, monitored and censored/self-censored. Finally I was interested in discretion, of what happened when somebody asked them to deviate from the social media policy—most directly by people trying to report crimes and more subtly when they come up against trolling or abuse.

Analysis

Analysis of Public Servant Interviews

The interviews were digitally recorded and professionally transcribed but given the nature of the topic area—with both technical and sector-specific language and regional accents—it was necessary to spend time with each transcript cleaning and correcting. This was also an opportunity to listen back to each recording in full and add memos—that is—observations and reflections. It was also a chance to crosscheck these observations with the post-interview notes I dictated immediately after each interview. These observations usually just offered some of the main feelings coming out the interview—did it go well, were they open to the questions, any surprises, any regrets, etc. Once all of the transcripts had been corrected they were then imported into Dedoose (Version 8.3.11). A code set was developed and each of the transcripts was coded (or, to use Dedoose terminology, Excerpted).

Following my experience of previous projects with long and extensive code sets (see Skelcher et al. 2013) I followed the advice of Shulman to use a series of short code sets (see discussion in Jeffares 2014) but to be prepared to undertake multiple "passes" of the data.

The three top-level codes were as follows—example of discourse; discussing a specific medium/channel; discussing one of the 18 robots. The child codes for discourse were: Connection/Cost/Control/Connection. For Medium/Channel—Face to face, Remote contact, Self-service, remote contact. Most times excerpts were coded twice—offering a

two-dimensional filter—where examples of connection discourse could be identified regarding face-to-face work. Initially I had intended to place each interviewee into sets depending on their role. However I found almost all, even the call centre workers, worked across different channels at various points in their daily work.

As for the top-level code of "robot" this was relatively straightforward in coding for each of the images. The coding also allowed any subsequent discussion of the robots to be connected back to the earlier mention. There were two further top-level codes which were mainly addressed at the very start and the very end of the interview—a question of how the role had changed/descriptions of the past and a question of what could only be best achieved face to face.

One further remark on coding of these frontline interviews is the role of the discussion of Q statements. In each of the interviews respondents were asked to specifically address up to 12 of the statements they felt most strongly about. Once in the analysis software it was relatively easy to start filtering by statement—which offered further insight.

Analysis of the Q-Methodology Data

The 40 Q sorts were recorded in a spreadsheet and imported into KenQ Analysis (version 1.0.6). The analysis involved first comparing each sort pair-wise to produce a single correlation matrix comparing every sort. This was then subject to a Centroid factor analysis. Q-methodologists employ a range of tests to determine the most appropriate factor solution, in this example there was a clear case for a three-factor solution. Whereas the first three factors had eigen values of 11.32, 3.48 and 2.02, the fourth factor had a value of just 0.16. Three factors were retained and rotated using varimax to maximise number of sorts loading exclusively on a single factor. Those judged to be loading significantly on a single factor (of 0.41, $p<0.01$) were flagged. The flagged sorts on each factor were used to create composite Q sorts, based on the relative weighting of each contributor. Each of the composite factor arrays was subject to interpretation focusing on the characteristic and distinguishing statement together with recall to the interview transcripts of the factor exemplars. In the case of two exemplars for factor 3 being senior managers in the workshop, their response sheets were transcribed and follow-up telephone interviews (lasting 45 minutes each) were carried out. (This use of follow-up call is an approach I previously developed in collaboration with Durose et al.; see Durose et al. 2016.)

Analysis of the Police Interviews

Police interviews were coded (using Nvivo for Mac 11). The main headline code (or Mother codes) were the following 7

- Posting—what are you posting/why
- Balance—how do you balance your duties with social media.
- Tools—what devices you using and how are the design of these tools shaping practice?
- Editors—Who decides who can tweet and what is posted.
- Hoaxes/Trolls—scenarios—how do you deal with these
- Controversy—How they react when something related to their organisations or something they have posted goes viral or attracts controversy.
- Lessons—what have they learnt/other remarks.

The transcripts were initially coded for these eight codes. A second round of coding of each of these codes gave rise to further themes.

Ethics

All but the medical interviews were carried out in their place of work. This project did not have full NHS ethics—but it was possible to interview two doctors and a psychologist in a private capacity. The project was approved by the university ethics committee. This included assurances that all participants were given a detailed participant information sheet and asked to sign a consent form. Interviews were digitally recorded and professionally transcribed. Partnerships were given the option to have a copy of their data, to ask follow-up questions and a deadline to withdraw their data if desired.

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CHAPTER 4

Position Closed: The Disappearance and Datafication of Face-to-Face Public Service

We live in an era of online comments and five-star reviews. The techniques for reviewing electronic devices and hotels extend to reviews of experiences of visiting public service facilities: doctors surgeries, schools, job centres, courts. These reviews on these third-party platforms are far from representative of the average experience. Polarised between extremely positive and negative what they do is reflect the extremes, that is, the joy or misery that can be achieved during a face-to-face encounter. Where previously such joy or misery would be contained within a thank-you card pinned above the reception desk or a letter to the complaints department, this can be visible to all. Here's a small selection of negative public service experiences collected from Google Maps (see Chap. 3 for method, my emphasis):

> It's quite ridiculous how long **we had to wait**,
> Nothing compounds **the shame and humiliation of being unemployed** like this place.
> When I said I would be back within the 56 minutes I was told that **the appointment would be cancelled**. Why cannot appointments be better managed?
> If I wanted **to suffer in pain** I would have done it at home.
> I lost 15 minutes of my time without doing anything wrong and **treated as a criminal** for no reason!
> **The staff tried to log into the computer system**. It seemed that no one knew the user name.

S. Jeffares, *The Virtual Public Servant*,
https://doi.org/10.1007/978-3-030-54084-5_4

> There is a comment system at school which means that **the teachers can abuse their power**, if they give you a comment then you can't justify yourself because they give you another comment for "talking back".
> Was kept waiting for over 1 hour with an 8 month old, and refused hot water for making formula … **Treated like cattle.**
>
> "Why did the Court Service remove the front desk people who you could go to see to seek advice? … When phoning I am told to go 'online'? **People need someone to TALK TO!!!"**

This list reflects the kinds of things that can go wrong on a daily basis. These are not catastrophic failures that would result in media attention, formal enquiries or prosecution. But they are more than consumer gripes. This is not a faulty electronic device or a bad meal in a restaurant; these are essential public services. And over the last three decades various attempts have been made to manage this, to make it a matter of measuring and managing customer satisfaction, to identify and eradicate sources of poor satisfaction, and to mitigate reputational harm.

When it goes well, little can beat the quality of the connection that be established in a face-to-face encounter. It can enable accurate assessment, support to be given, information to be shared, empathy to be established. But in a digital era, the practices of face-to-face work seem archaic, unstructured, expensive and difficult to manage. As new technologies are developed some argue that there is an opportunity to rethink what really needs to be done face to face. Such ideas have long been part of wider "channel shift" strategies (Kernaghan 2013).

This chapter considers two issues: First, how is face-to-face work currently being articulated within the range of frontline public services? Second, what technologies are being offered and what problems with face-to-face work are they seeking to address? The chapter has three main sections: the first considers academic and grey literature from a range of service domains to examine discourses of face-to-face work. The second section considers a range of technologies being deployed in face-to-face work, illustrated with examples. Third, the chapter offers a case of how frontline work is being organised in a British customer service centre. The chapter concludes that there are concerted attempts across public service to eradicate what are seen as avoidable public encounters. Where public encounters do remain, every effort is made to use digital technology to structure, record and monitor them. The resulting electronic data not only appeals to those responsible for performance management, but also helps to train emergent AI-based agents, through a better understanding of the behaviour of both customers and public servants.

Face to Face

It is oft repeated that staff are the most resource-intensive cost to an organisation. There is, and will remain to be, considerable effort to better understand how unnecessary costs can be avoided. For over 20 years research has tried to understand why, despite choice, citizens choose the channels they do, and how to develop strategies to migrate them away from face-to-face interaction (Madsen and Kræmmergaard 2018). Researchers are looking to the retail industry for strategies to avoid unnecessary staffing (Daugherty and Wilson 2018).

Alternatively, research is interested in the value of face-to-face interaction. For instance, some are finding that human interaction plays an important role in reducing customer anxiety (Shell and Buell 2019); others point out the importance of fostering empathy for clients: "face to face makes client assessment so important because clients dominate the physical space of street-level workers, making it impossible for street-level workers to ignore their feelings about clients" (Keiser 2010: 251).

At the extreme, Pinker (2014) sets out a thesis for why human interaction is more important than ever. Pinker's book considers the status of face-to-face contact in the context of social media and electronic connection. For Pinker the connection we make through electronic connection is no match for face to face. Pinker highlights how live interaction sparks greater activity in the brain regions that are connected to social cognition and reward (2014: 41), that the high rates of depression in online support groups should not be overlooked, that face-to-face conversation allows people to engage in social mirroring, which leads to higher levels of mutual trust (2014: 78), and that when it comes to persuasion there is nothing as potent as face-to-face contact. Pinker argues that social contact is like a vaccine; a little can go a long way (2014: 275). Yet at the same time the grab for our attention from social media and electronic communication platforms is eroding the time available for face-to-face connection with our public agencies, our families and our friends. The result of this transition, according to Pinker, is that we may be living longer but we are living more solitary lives. It leads Pinker to defend two points: first, that face-to-face encounters are devalued, while second, face-to-face encounters are premium. The devalued argument is that we are in danger of forgetting the difference that interaction with a great public servant can make to somebody's life (2014: 278). The premium argument suggests:

> As more of our interactions migrate to digital platforms, face-to-face contact in education, medicine and childcare has become a luxury commodity … Something that only the most privileged can afford. (p. 282)

For Pinker, all this matters because people with frequent face-to-face communication live longer, and she worries about the direction that western society is taking. Writing about China and the emergence of artificial intelligence, Kai Fu Lee reaches a similar conclusion, arguing that despite the great recent advances of artificial intelligence there remains one thing that only humans can provide:

> love. It's that moment when we see our newborn babies, the feeling of love at first sight, the warm feeling from friends who listen to us empathetically, the feeling of self-actualisation when we help someone in need. (Lee 2018: 195)

However, the position of Pinker and Lee is somewhat marginal to a more dominant position that face-to-face work is simply too expensive and that public service cannot afford to sustain face-to-face work at the current rate. Others point to matters of inconsistency, of prejudice and discrimination, of the safety of workers, or inconvenience to the user. For a variety of reasons, face to face is becoming outmoded.

Below I unpack these critiques further, illustrated and contextualised by examples of how face to face is positioned within a variety of types of public service: primary healthcare, probation, policing and local government.

Health

> Doctors arrive in clinic bored and uninterested. They try to rush the consultation and are distracted during it by their phone or their bleep. They don't make eye contact with the patient—their focus is directed to the computer screen. (Glass 2019)

Here Glass created the exemplar description of such "heartsink doctor" as a means of provoking a debate about the state of primary care in the UK. It describes a doctor who has ceased to be compassionate towards their patients. It describes how doctors can behave during a consultation, putting protocols before the patient. It also characterises what Tummers et al. (2015) describe as "moving away", of routinising and rationing in order to cope with frontline public service. Despite there being now a variety of means of meeting with a general practitioner (GP), the vast

majority of appointments remain as face to face in a GP surgery. Recent figures from NHS Digital suggest that there are around 19 million face-to-face appointments every month, compared by 3 million by telephone, 250,000 home visits and 150,000 online video appointments (NHS Digital 2019). Despite a variety of initiatives to encourage GPs to offer more telephone appointments it overwhelmingly remains a face-to-face activity.

There is, however, considerable interest in how practice can move away from the traditional face-to-face model, particularly as there is a chronic shortage of medical staff in many countries that shows no signs of improvement. The reduction in contact could take a number of forms, such as midwife appointments changing from weekly, to fortnightly, or only when required. Instead of requiring patients to attend a regular clinic, they are remotely monitored and attend a face-to-face session only if the data provided by their wearable (a small computer with sensors worn by the user connected to the Internet) suggests a visit would be beneficial. Duffy and Lee describe this as a move from *in-person care* to *non-visit care* and the idea of "in-person as last resort" (2018). They cite the dramatic increase in smartphone ownership as an example which shows that people are ready for non-visit care, that reforms amount to "retooling care pathways" (Duffy and Lee 2018).

One of the main reasons why in-person visits persist in health concerns the way in which doctors are paid for their work. But others make the case for continuity of care. In the UK only half of patients have a regular doctor (Sidaway-Lee et al. 2019); advocates for continuity of care argue that this has consequences for patient outcomes. A recent systematic review from Gray et al. (2018) argues non-visit care undermines continuity of care. Their study revealed 18 of 22 qualifying studies they reviewed showed continuity of care reduces mortality. They conclude that investing in technology-based reforms will pave the way to ever more depersonalised care and a continuing "decrease in the perceived value of personal contact between patients and doctors" (Gray et al. 2018: 1).

In an earlier study Gray et al. (2003) highlighted research that shows wider benefits of continuity of care, that it increases trust, fosters mutual empathy, breeds compassion and empathy for patients (Gray et al. 2003 citing Fugelli 2001, Taylor 1997, Dixon et al. 1999).

Other studies have tried to establish how much, or indeed little, time doctors actually spend with patients during a working day. They suggest the time spent with patients is reducing, with longitudinal surveys of US

suggesting that less than 50% of a family doctor's day is now spent working face to face with patients. Others are concerned with pressures on the length of consultations. Studies reveal considerable disparity between countries: contrast the longest being an average of 22.5 minutes in Sweden with just 48 seconds in Bangladesh (Irving et al. 2017). The same study highlighted the UK as having one of the shortest in the developed world, with appointments lasting less than 5 minutes on average. The NHS does not mandate how long doctors should schedule for patients—but in practice 8 minutes is the limit.

Arguments for alternatives to face-to-face care are long established and gaining traction. Back in 1992 Wasson et al. argued that shifting away from the mode of face to face, to following up with patients more regularly over the phone, could actually improve health outcomes (Wasson et al. 1992). With greater proportions of health records now digitised (US states range between 78% and 100%, Myrick et al. 2019), there are opportunities to introduce alternatives to the traditional face-to-face model, described sometimes as telecare, but previously as virtual consultations (Palen et al. 2012), electronic consultations (Stoves et al. 2010) or e-consults (Siepierski 2013).

The rising demand for doctors' time and the shortage of GPs are seen as unsustainable. In the UK this has resulted in the upskilling of nurses and pharmacists to be able to prescribe and in the NHS the introduction of Medical Associate Professionals, similar to the US model of Physician Associates (Drennan et al. 2015). It has also led to the development of dashboard interfaces that help doctors navigate patient records, which are viewed as particularly helpful if the patient is meeting them for the first time.

Welfare

In this section we move from primary health to how face-to-face work is described in social work and unemployment assistance. We move from describing people as "users" to a broad range of labels such as "service users", "claimants" and "clients" (Alford 2009). The issues facing frontline social work in the UK are numerous. Performance management methods are undermining the very humanity of social work (Gibson 2019). Unable to fill job vacancies, local authorities are resorting to staffing 15% of their departments with temporary staff, with so-called agency staff making up to 47% of the workforce in some local authorities

(Perraudin 2019). Critics also point to the progressive privatisation of social work, as aspects of the service such as children's residential care are increasingly delivered by private providers (Jones 2018). These understaffed services are facing unprecedented demand: caseloads are growing and staff and managers are seeking strategies that can satisfy regulators. Staff are required to carefully document all interaction with their clients, and those long accustomed to maintaining paper-based records are now required to use laptops and tablet devices.

Whereas the social work encounter is between citizen and professional, in employment support, since the shift in focus from welfare to "workfare", the relationship has become mixed. In a workfare model people are not passive recipient of benefits, but active jobseekers. Their entitlement to benefits is subject to evidence that they are active in seeking work: actively searching, maintaining their CV, applying for vacancies, taking up invitations for interviews and assessment. The role of the public agent here also incorporates assessing if the client is active, and sanctioning those who fail to attend meetings or demonstrate meaningful engagement in job search. The process of sanctioning is described by Hardwick (2017):

> She went to sign on at 3pm. The advisor said, you are two hours late, your appointment was at 13:00 that's one o'clock. The girl apologies she didn't understand the 24 hour clock. But she was sanctioned and didn't receive benefits for six weeks. (In Hardwick 2017)

Hardwick's article questions the growing inflexibility of staff in the jobcentre. Work coaches complain they have only 10-minute appointments, leaving little time to offer meaningful support, together with a shortage of staff, the closure of job centres and the complexities of implementing a new integrated benefit called Universal Credit (Guardian 2017).

In the UK in 2017 it was announced that a further 10% of the 714 remaining job centres would be closed (Monaghen and Inman 2017). In making the announcement, the minister responsible stated the reasons for the closure programme as a matter of changing demand and the deployment of resources:

> The way the world works has changed rapidly in the last 20 years and the welfare state needs to keep pace … the more people access their benefits through the Internet, many of our buildings are underused. We are concentrating our resources on what we know best helps people into work. (Employment Minister Damien Hinds, quoted in Monaghen and Inman 2017)

Critics of the proposal argued that the closures discriminated against rural populations: "forcing them to travel further is not only unfair, it undermines support to get them back into work" (Mark Sewwotka, General Secretary of the Public and Commercial Services Union quoted in Monaghen and Inman 2017). In addition, closures would undermine the effectiveness of work coaches, eroding local knowledge and increasing workloads. Others criticised that all this added up to purposive rationing of supply rather than reducing demand:

> They actually force you to apply online or on the phone. They won't generally see people in the office building without an appointment. It has been deliberately set [up] that way by the DWP [Department of Work and Pensions]. Now they're claiming that people prefer to do it that way. Ridiculous. (Guardian reader "ProjectXray, commenting on Monaghen and Inman 2017)

To better understand the origins of these two pro- and anti-closure arguments about the closure of job centres it is helpful to consider them in context. What we now know as jobcentres started as Labour Exchanges in 1910. By 1914 there were 430 locations, offering employment support and unemployment benefit. They were renamed Employment Exchanges in 1917 when they became part of the portfolio of the new Ministry for Labour. Benefits were paid in cash weekly. From the 1970s this was in the form of a girocheque. It was not until early 2000s that payment was made by an electronic bank transfer.

In 1973 the then Department for Employment began opening a new network of jobcentres. These ran in tandem with the Social Security offices until the mid-1990s. In 2002 the then Employment Service's jobcentres and the Benefit's agencies social security offices were merged, and overseen by a new arms-length Executive Agency called Jobcentre Plus.

Four years after its establishment, a 2006 report published by the House of Commons Work and Pensions Select Committee reported growing criticism that the Jobcentre Plus agency was failing. Service levels were said to be at rock bottom, the service was dogged by poor staffing and IT failures, and much was being channelled through contact centres that could not cope with the volume of calls (Work and Pensions Committee 2006). The report documented the situation in the LSO "Local Service Outlets" as "a deliberate policy to deter people from coming to Jobcentre Plus offices" (p. 48). "It is a fact that LSO resources are

reducing, particularly in the area of reception" (p. 60), plus concerns that floor managers were restricting use of customer access phones and encouraging use of home phones for the purpose of job seeking (p. 36).

The 2006 report quotes earlier remarks by the Chief Executive of Jobcentre Plus which set out face-to-face interviews as to be used only in exceptional circumstances:

> We are establishing a number of Contact Centres that allow customers the flexibility of using many of the services Jobcentre Plus provides without the need to travel to local offices. In areas where this new process has already commenced, customers are asked to telephone the relevant Contact Centre to make their initial claim to benefit. If a customer has already travelled to the Jobcentre Plus office, they can use a "warm phone" in that office to make the call. **In exceptional circumstances, customers may have a face-to-face interview**. (Former Chief Executive of Jobcentre Plus, David Anderson, (Work and Pensions Committee 2006: 32, my emphasis)

They concluded that "Given DWP's client base, it is self-evident to us that a welcoming, local, face-to-face presence needs to be part of its delivery strategy" (p. 48).

More recently a whole range of working age benefits including incapacity benefit, income support and disability living allowance have been rolled into a single Universal Credit. A particular feature of Universal Credit is that all applications and the management of accounts are online. This, combined with all vacancies being published online, poses questions about why a physical network of job centres is required, as this review from a user concurred:

> Waste of time and money having staff as everything is done on computers … finding a job on computer, when you go in the staff use a computer why not just get rid of staff and that will save so much money and get computers then that will give a lot more people jobs fixing them, when I go in there is lots of staff doing nothing. (Google review of an English Job Centre)

As attractive as scaling back face-to-face welfare services may be, there remains the point that the most vulnerable, the most marginalised, the poorest also most likely to lack the capacity to access the digital channels. For some, face to face is the only channel they can reliably access.

Criminal Justice

The previous section focused on social workers and job centres; this section turns to probation officers and police stations.

The traditional face-to-face encounter in probation is captured elegantly in Ben Rumney's (2013) BBC fly-on-the-wall documentary "Out of Jail and on the Streets". It followed a number of offenders and their nominated case workers. It showed what happens when a client breaches their licence conditions and, furthermore, the vulnerability of these clients. It showed the relationship between Roger and his probation officer Vicky. Roger was subject to a six-month restraining order and had a history of mental illness. In one scene we see that Roger's mental health has deteriorated—he hadn't been taking his medication. During the supervision Vicky, seven months pregnant, contacted the GP and walked with him to the pharmacy to collect the prescription. She returns to Roger's house to encourage him to take the medication. Roger tells Vicky the voices in his head are telling him he is evil and not to take them. After much persuasion he takes the tablets. Becoming distressed he starts to tell Vicky how lonely he feels, how he wishes he had a family:

> You don't have anything to apologise for, Roger, but just take the medication.
> *Right, anti-depressants.*
> Two of those?
> *Yeah.*
> Do you want some tissue?
> *I've got some here, lovey.*
> Oh, right, OK.
> *It's all right, darling. Don't worry about me. You look after yourself, because you…you're holding a little bump. Bless! Sorry, I shouldn't be so personal, but I just…*
> It's all right.
> *I want a family. I want, I want…I've got a hell of a lot of love to give. I want babies, I want children. I'm a sad, old, lonely, f**king bastard, basically. I'm a sad old git that needs shooting. That's all it is. That's all it is.*
> No-one else is saying that Roger.

At several points during the meeting Roger had made several references to her pregnancy, his warmth for her. This was emotional work, to work with Roger in his home, encouraging him to get dressed, leave the house, collect a prescription, return home and take his medication, despite the voices in his head. Roger was lonely and Vicky was one of the only people

showing any interest in his well-being. Outside in the street with the camera crew Vicky speaks to the camera of how difficult it is to strike a balance between comforting and maintaining a professional stance.

> When I'm out of my working capacity, my want would be to sort of reach out and put my arms around the person, comfort them. I can't do any of that and, of course, that's totally right and appropriate. But it is hard to continue that professional stance but also be encouraging and help someone. (Vicky, Probation Officer)

After the exchange above Roger phones the probation service to ask to have a new probation officer because he has developed "inappropriate feelings" for Vicky. We then see a meeting between Vicky and her manager where Vicky questions whether she had acted inappropriately.

> Well, it did make me question how I've been dealing with him. You know, has he completely misconstrued my intervention and my help to mean something else. And I think it's been the absence of another service or agency intervening or giving him some assistance, that has meant I've gone extra with Roger. I've gone further. (Vicky, Probation officer, in Rumney 2013.)

What the case of Roger and Vicky shows is the product of the relationship that can develop between client and public servant, the complexities of emotional labour, of fostering empathy and trust and yet maintaining professional distance and remaining safe. For over a 100 years probation has been a face-to-face role but this has changed in recent years.

> It shall be the duty of a probation officer … to visit or receive reports from the person under supervision at such reasonable intervals as may be specified … or, subject thereto, as the probation officer may think fit; to see that he observes the conditions of his recognizance; to report to the courts as to his behaviour; to advise, assist, and befriend him, when necessary, to endeavour to find him suitable employment. (Probation of Offenders Act, 1907, Section 4)

The face-to-face work of probation emerged from a tradition of missionaries working to rehabilitate convicted criminals. In the UK it has been through several iterations following the 1907 Probation of Offenders Act, with the Home Office taking control of the service in 1938. By 1948, following the Criminal Justice Act, probation is defined as to "advise,

assist and befriend". In 2000 the Criminal Justice and Court Services Act brings in a National Probation Service (NPS) and replaces the 54 local probation committees with probation boards. The 2004 establishment of a National Offender Management Service introduced a commissioning model into probation. But as we will explore here it was the further extension of the commissioning model for probation in the introduction of private Community Rehabilitation Companies (CRCs) which has brought with it new models of offender management that have moved away from a century of face-to-face interaction.

One of the most influential pieces in this industry about the role of face-to-face supervision is a report from Partridge (2004). Citing both randomised controlled trials on the use of assertive, face-to-face supervision models, and findings from her own cases, she concludes that regular face-to-face supervision is the most effective model in probation.

But the part-privatisation of probation has brought in new practices for supervision, with particular emphasis on remote supervision in at least two-thirds of the newly established CRCs (Gyimah 2017). Below is an example of the kind of guidance staff were given by one CRC. This CRC, Sodexo, was one of the larger companies, managing contracts across 6 of the 21 CRC areas.

> To make the step change in reoffending rates required of us, we need to spend a limited resource in the most effective way possible: that means not only identifying those who are likely to benefit from more intensive help, but also those who are best able to complete their sentence safely without it. (Sodexo Justice Services 2015)

Campaigners, such as this influential probation blogger, began to express their concern about the models being developed by the CRCs:

> Low risk … service users will receive little or no face to face contact with those staff actually managing their orders. They will be subject to a group induction and thereafter, the "channels of delivery" will consist of a combination of remote interaction/media … and attendance at community hubs … In our view, there is a very significant risk that, in the long run, this model will prove counter-productive in terms of the throughput of work into the CRCs as the [National Probation Service], and more importantly, the courts, come to understand that the level of service provided to low risk offenders involves little or no face to face contact with case managers. (Probation Matters 2016)

In its 2017 annual report the probation inspectorate (HM Inspectorate of Probation 2017) shared the concerns that there was little evidence that this remote supervision was effective but was convinced that a mix of online and face to face was:

> These models provide for up to four in ten individuals to be supervised remotely, for example by six-weekly telephone contact … We know of no evidence base to suggest that remote supervision works on its own to reduce reoffending or manage the risk of harm effectively, although research conducted to examine substance misuse treatment and recovery resources found that the use of online resources could work well when supplemented with offline face-to-face contact. (HM Inspectorate Probation 2017: 83–84)

The evidence for a mix of face to face and online was an article on the use of digital technology in substance misuse recovery (Dugdale et al. 2016). The report was critical of the size of caseloads probation staff were expected to carry. The inspectorate was concerned that junior staff in some CRCs were carrying out remote supervision with a caseload of 190–200 offenders, which far exceeds a suggested maximum of a quarter of this: "no worker could manage more than 50–60 cases effectively and safely at any one time" (HM Inspectorate Probation 2017: 86).

The then Chief Inspection of Probation Dame Glenys Stacey remarked:

> Some do not meet with their probation worker face-to face. Instead, they are supervised by telephone calls every six weeks or so from junior professional staff carrying 200 cases or more. I find it inexplicable that, under the banner of innovation, these developments were allowed. (in HM Inspectorate Probation 2017: 6)

In July 2018 the government announced they would be terminating CRC contracts two years early: in 2020. One of the criticisms of this operating model was the introduction of remote supervision (BBC 2018).

> Now for me anything that encourages face to face contact is welcome, but the real thing is about the quality of that contact, what is actually happening, you know, when you are meeting with somebody, we don't want contact that is superficial, we want contact that is meaningful and purposeful. (Dame Glenys Stacey, quoted in BBC 2018)

In a second example of the state of face-to-face public service within the domain of criminal justice we turn to the role of police stations. Whereas the focus of the probation example has been around the value of face-to-face vs remote supervision, here, as with the job centre case above, we focus on the removal of physical locations used for public encounters. This concerns an issue of place rather than channel. Pollitt's (2012) exploration of the value of place is helpful here. Responding to Clarke and Newman's (2007) critique of the idea of a demanding citizen-consumer who expects the same from their public services as they do from their supermarkets, Pollitt pondered the implications for place:

> This on-the-go citizen-consumer requires Web-based services, because they are ubiquitously available. He or she apparently does not have any strong allegiances to particular places or to individual professionals or officials. Their relationship with most services is dominantly virtual. (Pollitt 2012: 196)

Yet as Behn (1978) reminded us, for a variety of reasons government agencies must sometimes close their facilities. Whilst few become animated by the closure of a job centre, local citizens can be more attached to the symbolism of their blue-light services (McLaughlin 2008). A police station is viewed as a symbol of public reassurance (Millie 2012). People will passionately object to the closure of small rural hospitals, local police stations or hospitals; Behn cites the example of a 17-month sit-in to save the closure of a New York fire station (Behn 1978: 335). But as more services move online and headcount is reduced, managers are looking to close what they label as under-occupied and under-utilised space. An exemplar of this is the role of the police counter.

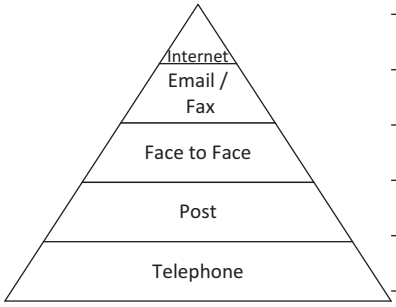
Police counters are the front desk of a police station. Traditionally they would be a place where a member of the public could turn up and report an incident requiring police attention. Although period dramas depict a uniformed police officer sitting behind the counter, for several decades they have been run by civilian police staff. Commissioners point to the rapid decline in how these counters are used. A review by the Metropolitan Police found that in 2006, 22% of crimes were reported over front counters. By 2013 this fell to 12% and by 2016 just 8%. Some locations received very few reports (Mayor of London 2017). Some 20 of London's police counters were receiving on average less than one report per day. Police forces collate such statistics as part of a wider transformation of their

estate. West Midlands Police announced it would close 24 of its 46 "under-occupied" buildings in order to save £5m per year (BBC News 2018). Not all police buildings have counters. Whilst it has attracted some press attention and examples of campaigns (Adams 2014), the closure of police counters continues at pace. Freedom of Information requests have revealed the closure of almost half of police counters between 2010 and 2017 (901 to 510, Beckford 2017). Senior commissioners behind the closure programme are quick to point out that it needn't mean an end to meeting face to face, but rather is an opportunity to identify locations like coffee shops instead (Davenport 2017). Decisions to close stations and counters are, however, part of a wider transformation programme. As we explore later in the chapter this has included the use of mobile technology but also a stark reduction in head count. For example between March 2015 and August 218 over 7000 neighbourhood police officers were reassigned or left policing, and Police Community Support Officers (PCSOs) had fallen by 18% (Shevda et al. 2018).

Local Government

Finally, we turn briefly to local government and our first introduction to the quantification of public encounters as transactions. One idea that caught on in UK local government in the 2000s and 2010s was "channel shift" (Kernaghan 2013; Mundy et al. 2011), what was subsequently labelled "multi-channel management" (Madsen and Hofmann 2019). This concerns demonstrating the benefits of offering multiple channels, and how to succeed in steering people away from traditional channels of physical meetings, telephone calls and so on (Madsen and Kræmmergaard 2016) through the use of behavioural economics and digital-"nudges" (John and Blume 2017; Schär and Stanoevska-Slabeva 2019). Much of the focus on "channel shift" became the comparison of the relative cost of different types of transactions.

Towards the end of the 2000s many local authorities began to calculate the relative costs of their various transactions, spurred on by examples by employer organisations (e.g. LGA 2014) and in the wider academic literature (e.g. Andersen et al. 2011). These calculations served a range of purposes, but mainly were about making a business case for the reduction in face-to-face encounters. The comparison table offered by the Local Government Association's (2014) report offers an attempt at triangulating various quantifications of public encounters. Such comparison tables



	Volume	%	Council's total cost for access	Benchmark cost per contact	Benchmark total cost per contact
	40,000	4%		£0.17	£6.905
	96,000	10%		£3.26	£287,343
	131,000	14%		£7.01	£922,271
	175,000	19%		£3.26	£569,708
	497,000	53%		£3.26	£1.6m
Total	**932,000**		**£5.9m**		**£3.4m**

Fig. 4.1 Cost of public access versus benchmarking data, by channel. (Adapted from Milton Keynes 2015)

were seldom subject to any kind of independent scrutiny, were often taken at face value and helped to launch transformation programmes across the sector, informing business cases to close facilities and introduce mandatory online applications. Such cases were variously labelled "public access strategy" or "public access transformation". In the example of Fig. 4.1, here the local authority (Milton Keynes) is comparing its then cost of public access to a sector-wide benchmark. The benchmark suggests that Internet transactions cost £0.17, Face to Face £7.01, and Telephone £3.26.

Similar such examples are to be found across local government during this period. Andersen offers a comparison table from Denmark (Table 4.1), and made two claims: that despite being digital, email costs more than a phone call, and that self-service is underused.

Such quantitative comparisons are designed to expose face-to-face work as unduly expensive and to legitimise reform without considering the quality of services. They know the cost of transactions but say little of the relative value of different modes of public encounter. In this case it prompts decision makers to ask: "What can we do to reduce the 59m visits to a town hall a year?" In Denmark they have put in place a range of mandatory services that have to be done through self-service (Madsen and Kræmmergaard 2016). Denmark is also among a small group of nations that regularly top the digital public service league tables (Finland, Estonia, Sweden, the Netherlands, Singapore, the UK), for example, OECD and European Commission (2019).

Table 4.1 Frequency and costs of citizen-public sector communication distributed on channels in Danish local government 2010. (Reproduced from Andersen et al. 2011: 23)

Communication channel	*Estimated cost DKK (GBP)*	*Estimated number of interactions*	*Total cost*
Physical meeting at city hall	110 (£12.58)	59 m	6.5b (£740 m)
Phone	60 (£6.86)	38 m	2.3b (£260 m)
Letter	80 (£9.15)	46 m	3.7b (£420 m)
E-mail	80 (£9.15)	20 m	1.6b (£18 m)
Internet self service	10 (£1.14)	285,000	0.003b (£3.4 m)
Total	–	165 m	14.1b (1.61 m)

The examples discussed so far suggest that despite strong arguments about the merits of face-to-face work, a range of pressures for reform present an uncertain future. The chronic shortage of skilled medical professionals and improved technology is increasing interest in non-visit care. Mandated online application and job search are resulting in the continued closure, consolidation and changing purpose of job centres. Reformers are looking to remote supervision as an alternative to traditional resource-intensive probation models. Despite their symbolic function, alternative methods of communication are allowing police forces to radically reduce their estate and develop new models of policing. And local government has spearheaded the quantification of public encounters as opportunities to shift transactions to cheaper "channels". Whilst face-to-face work will likely remain for some time across these examples of public service, to a varying degree, how is technology shaping its future?

Whilst there are some signs in the banking and retail sector of a renaissance of face-to-face analogue banking (e.g. Handelsbanken) or advances in face-to-face methodology (e.g. Buurtizorg), the primary direction is one of consolidation of smaller units into larger ones, be that police stations, GP surgeries or job centres, and towards purpose-built, carefully designed customer service centres that utilise electronic visitor management technology to manage every aspect of the visit from initial triage to the journey around the facility. The whole emphasis is to disincentivise the visit, to offer self-service or remote contact alternatives, and for those that do enter the centre to be encouraged to use self-service devices. For those that do make it through to a human agent, their meeting should be carefully timed and logged and regularly reviewed by management to find further opportunities to find more performance efficiencies.

Overall, the use of centres is creating an environment that can be quantified, can be measured. If it can be measured it can be managed and, importantly, automated. An example of this emphasis can be found in a variety of tools being developed to measure and monitor what are known in the NHS as PTLs (Patient Tracking Lists)—the journey of patients through hospitals. A variety of tools are being developed using different forms of wristbands or similar devices that track patients through different stages of their hospital visit. University Hospital in Limerick gives its patients plastic wristbands that connect to the hospital Wi-Fi routers dotted around the hospital. The system can track them as they navigate from admission; waiting rooms; time in theatre, recovery, ward; and discharge. The data not only allows automation of the reporting of performance data, but also offers predictive analytics to help avoid overruns or underuse of rooms/beds/theatres. It can be used retrospectively to examine where bottlenecks occur, and can be used to "notify staff when a patient is close to exceeding the target time assigned to any stage" (Tracworx 2019: 14).

A great number of public encounters, especially for the likes of social workers and police officers, take place in a variety of locations outside of government facilities/buildings. Transformation initiatives therefore often place a great deal of emphasis on mobile working. This includes replacing desktops with laptops/tablet computers, making it possible for frontline public servants to do more of their work whilst mobile rather than back at their desk. Such moves also allow public agencies to consolidate their office space, introducing flexible working, hot-desking, working from home and offices with a ratio of four desks for every ten workers. Mobile working also means introducing electronic ways of capturing the conversation—as an alternative to the iconic police officer's notebook or jottings in a legal pad. Capturing an encounter electronically allows the information to be integrated with a centralised CRM (customer relationship management) system. Given the differing regulatory requirements on public services, this has led to sector-specific CRM examples, such as CareDirector in social care (Careworks 2019), nDelius in probation, CPOMs in schools, Visionhealth in General Practice (Visionhealth 2019) and the Corvus Platform used in policing (Bluestar 2019). One of the arguments for CRMs is that they offer one single customer record. They allow any public servant, with permission, to access and amend a service user's record from any device connected to the Internet—a computer in the office, a mobile phone in a car, a tablet computer in a café. Below is a marketing statement from one tool being used by police forces in England:

> The platform provides officers with an intuitive set of tools for completing a range of activities whilst out and about in the field or at the scene of an incident. Data only needs to be entered once and is available to be viewed, reused and retrieved by any authorised individual. (Motorola Solutions 2019)

Claims about the benefits of technology-enabled mobile policing are made in publicity about police forces online—publicity about their ongoing transformation programmes. One force described renaming one of their tools—*Click and Collect*—where officers could "reserve" a particular suspect so other officers would know an arrest was imminent (West Midlands Police 2018). From the same force is a testimony from a Response Sergeant, setting out how technology like body-worn cameras has improved transparency and reduced complaints. Live links mean officers rarely have to attend court hearings (Taylor 2018). He continues:

> Our mobility devices have fundamentally shifted how we police. We've got easy access to information and much better recording, such as the electronic dash and stuff in search apps … providing officers with up-to-date intelligence when we need it … A few years ago, our first thought was arrest everyone, take them into custody and write everything down … Our new approach to smarter; responding aims to see officers become truly mobile and have them available when they're most needed … A new pilot portable office, which will provide officers with tools which will allow them to complete admin at the scene, reducing the need to continually return to the station. New apps will allow us to carry out live PNC [Police National Computer] checks and we will be able to complete digital witness statements directly from an incident as well as take digital notebook entries that populate multiple systems. (Taylor 2018)

This move to capturing public encounters on keyboard-based devices has raised concerns among some that devices can present an unwelcome barrier between public servant and citizen. Industry and government agencies are experimenting with speech-to-text conversation transcription tools, such as FutureGov's FamilyStory application, developed to be used by social workers to verbally record summaries of the key points of a meeting with service users whilst still in the meeting. Trialled with children's services in London, it offers a chance for the families they support to suggest additions or edits, and the record is stored in a secure platform that all parties can access. The speech-to-text element uses Microsoft's Azure speech to text service which is a cloud-based conversation transcription tool (Wood et al. 2019).

The requirement of applicants for Universal Credit to complete their application online is reflective of a wider move across public services to reduce time spent by public servants asking questions and inputting data. It is mirrored across a range of services, such as the now-widespread online crime-reporting tools used by many police forces. GP surgeries are also starting to deploy tablet computers to patients in the waiting rooms; they answer a series of questions and the AI built into the software suggests to the doctor a range of suitable treatment plans. The argument here is that instead of taking histories, appointment times can be reduced and the doctor can see more patients on a given day. This is far from a new idea; in 1974 the Computer Doctor was trialled, which involved in-patients answering a series of multiple-choice questions being asked by a doctor on video tape. The answers were entered using a paddle device which would record the answer and advance the tape to the next question; these were then printed off and read by a doctor prior to their consultation (Halliday 1974).

Case of Local Authority Customer Service Centre

This section features a case example of a local authority in the north of England. In particular we focus on how, in 2012, the organisation began planning a new customer service centre. In-depth interviews, conducted as part of this research, with the managers responsible for implementing this new centre give us insight into the motivations of those setting it up. When opened in the spring of 2013 the centre was one of only a handful of centres to be organised in this way (see for example Newport City Council 2012). The centre cost £1.5 m to install but had a projected saving of £200,000 per year. Now the design is somewhat universal across the UK.

The Kirklees customer service centre is one of two centres run by Kirklees Metropolitan Borough Council, located in the Yorkshire town of Huddersfield. The centre of interest here is located in the centre of the town on the ground floor of a 1960s office building and adjacent to the Jobcentre Plus. “Customers”, as they are known, enter via a set of automatic doors and are met by a “greeter”, dressed in a bright yellow T-shirt. The greeter asks the customer their reason for visiting, and makes a decision as to whether the person needs to meet with a human advisor or whether they would be better suited to use one of the self-service terminals. (The greeter is briefed to direct as many as possible to “self-serve”.)

This could include using a document scanning station, or accessing an online service through a computer or information printing service. A prominent help button is provided in case a customer gets into any difficulty with the self-service machines. "Floor walkers" respond to requests for help. It is notable that floor walkers are there to guide people in using the self-service devices, but instructed not to do it for them.

If, upon arrival, the greeter deems the customer to be incapable of self-service, or the nature of the enquiry is of a complex nature and requires face-to-face interaction, they then advise the customer which service to select from the touchscreen tablet. This tablet places the customer in one of a series of queues for different advisors located around the edge of an open plan area in numbered "booths". Most of the booths are staffed by general customer service advisors who have a comprehensive understanding of a wide range of services the council offers. Two of the most common reasons for a face-to-face meeting is a blue badge application and a taxi licence renewal. A blue badge allows disabled drivers or their carers to park in designated disabled bays. Applications for the badge can be made online depending on the age and circumstances of applicants, or if an applicant does not have access to the Internet at home or prefers to do such a transaction with somebody face to face. The taxi licence renewal is a different matter; here there is a need for the taxi driver to present in person as part of the verification process. On any given day some of the booths could also be occupied by other services, such as specialist planners or a housing association. Whereas some agencies may operate an appointment service, the customer service centre is set up as offering walk-up appointments.

Over time the nature of the space and the management of this "walk-in" service have evolved. When the centre was located in the town hall, interviewees recall people queuing for over 40 minutes to see somebody:

> People queued and the queues were out the door and they were constant… There was a semicircle of desks. There were about five or six officers behind the semicircle, … The queue didn't end … we would send queue busters out then. We would try and find out if we could get people out of the queue to stop them. (Advisor 1)

In the old system there were two levels of officer—a receptionist and a specialist. The receptionist would be able to handle basic enquiries but if the request required specialist knowledge, they would then queue for, for

instance, a council tax specialist, or a licencing specialist. Over time a process has made the frontline workforce generic—everyone is capable of dealing with all enquiries. This is made possible in part by upskilling but also by removing the higher-paid decision makers from the frontline. Whereas previously a planner might have been located in such a centre full-time, now the planner is available for just a few advertised hours per week. By making the frontline service as generic as possible and reducing access to specialists, managers argue that waste is reduced and productivity improved.

The space itself is carefully designed to be as flexible as possible. By numbering the booths and removing all traces of council branding, the space can be used flexibly on different days by a variety of agencies. The space is designed to be flexible and its use evolves with demand. Over time, if footfall drops in the centre, more services move online or more customers are judged to be capable of self-serving, then booths can be replaced by self-service machines. This has parallels with supermarkets and banks, where staffed checkouts and counters are replaced by self-checkouts and ATMs.

This model of delivery is made possible by a computerised queue-management system. In this case this is provided by a company called Q-Nomy (Q-Nomy 2019a). Other public bodies using their systems include Harrow Council in London, Nottingham University Hospital, New York City Department of Transportation, South Carolina Department of Motor Vehicles, and Calbrini Health medical imaging department in Victoria, Australia. Kirklees uses the company's "Customer Flow Management Software".

The software is designed to allow customer service centres to operate multiple booths of both generic and specialist advisors, and a range of different customer services ranging from short to lengthy meetings. The system is designed to minimise the waiting time for the customer and to make greatest use of the human advisor's time. It starts by ensuring the customer is routed to the most appropriate queue. The council had initially experimented with customers choosing this themselves; however, there are two problems here. First customers do not always know which service they require; there is a risk they choose the wrong service and end up waiting in the wrong queue. And second, customers who could self-serve are choosing a human agent, which undermines the council's attempts at encouraging customers to use more cost-efficient channels. Therefore the "greeter" role is important in enabling the organisation to meet its broader objectives.

Customer service officers interviewed for this project talked of a need for the use of discretion, particularly if a customer is struggling with the self-service terminals: "Then one of my floor workers says," Well, I've seen them now and I don't think they can. I'm going to give him a ticket. " They've used their discretion" (Advisor 1).

Once issued with a numbered ticket, the customer takes a seat and waits for their number to be called on the "digital signage" screen. Their number will be called and they are told which booth to attend. Q-Nomy describes this as "smart routing of customers depending on segment, value and profile". Management can therefore set up the system to route customers as appropriate based on need and circumstance. Q-Nomy divides the benefit of using such a system into two parts: "A customer journey solution" and a "customer flow management" solution. The former concerns what the customer experiences—the length of the wait and trust in the process. The latter concerns supporting the management to best plan and allocate resources. This allows what Q-Nomy calls "Staff Optimization", helping the organisation to plan the number of agents required in each of the booths on a given day based on customer statistics. The data allows managers to monitor how the service is operating in real time and also provides data for workforce planning. A similar pattern is seen across retail, with brands using AI-based systems that help schedule the optimal number of people to deploy on the shop floor (Daugherty and Wilson 2018: 89 examples of Japanese clothing retailer Uniqlo using system from percolata.com).

Q-Nomy describes how the staff optimization software "tells you how many agents you need at each branch and department, for each day and hour. These parameters are based on statistical analysis of previous demand, current service level goals, and future trends" (Q-Nomy 2019a).

At the Kirklees centre, the managers sit behind large screens directly behind the meet and greet. They sit behind terminals displaying the Q-Nomy dashboard. They can see how the queues are performing and the performance of individual agents. Each transaction in the booth is carefully timed, with agents starting the clock at the point a customer sits down. At the end of the meeting, the agent wraps up with any final data input and closes the transaction. This gives management information about the length of transaction by type. Such measurement is not unusual in telephone contact centres, where many aspects of calls can be monitored (see Chap. 5), but these technologies bring these metrics to the face-to-face encounter.

The way the centre is organised also allows staff in booths to be re-designated from face-to-face work to the telephone contact centre located on the floor above. Managers will be alerted that demand for face-to-face contact is reducing and some of their human advisors will have spare capacity. Q-Nomy describe this as "Automated allocation of staff for back-office work during off-peak hours. When the system identifies low traffic (based on current and historical data) and calculates that one or more counters can be closed … it will assign staff with back office tasks" (Q-Nomy 2019b). Advisors are then prompted to put on a headset and log into the telephone system. They might take calls for 20 minutes before being instructed to resume face-to-face transactions.

Conclusion

The traditional face-to-face encounter is becoming increasingly rare. The pressures on managers to reform face-to-face practices vary by service area, but add up to staff shortages, reduced budgets, complexity of need and increased customer expectation. The quantification of public encounters as transactions has been transformative, paving the way for the legitimisation of a range of reforms to face-to-face service. Whilst some will continue to argue that face-to-face work plays an important role in nurturing trust, empathy, compassion and ultimately improved quality of life, the majority view is somewhat channel-blind. This view sees technology as an extension of, a complement to, the human agent. The use of behavioural economics techniques (such as "nudges") has played a part in this, as public managers have first placed a price on each of their channels and then employed strategies to disincentivise people from using the most expensive. In countries where austerity has been most acute, there has been little choice but to do this. Such processes have been part of wider cost saving programmes through consolidating public buildings, reducing office space, encouraging agile and home working and staff redunancy schemes. But even where austerity has not been the main driver, the use of technology in face-to-face encounters allows for an unprecedented degree of managerial oversight. Hospitals do not need to spend a month preparing patient flow strategies—they can watch this in real time and act accordingly. What happens in the public encounter has always been something of a mystery, but no longer are meetings undocumented or written up based on a few scrappy notes in a paper book. Tablet devices, sector specialist apps and new ways of recording meetings with the likes of text-to-speech

technologies are becoming a reality. Again this implies managerial control and presents challenges for street-level discretion, of bending the rules to help or punish a client.

As face-to-face service is increasingly centralised and consolidated into the last remaining physical spaces—specialist service centres—these must utilise the same customer service systems as a modern contact centre. These centres are designed with flexibility in mind—to allow staff to move from face to face to self-service as demand fluctuates. Similarly, staff are "generic" rather than specialist, and can work across a range of channels—switching from a face-to-face mode to telephone or live text. This is not the preserve of lower-paid customer service advisors, but is also the system that is increasingly shaping how doctors, probation officers and police officers spend their days. The growth of video consultation over the next few years will be the new shape of what remains of face-to-face work—complete with dashboards, suggested questions and time monitoring software.

What does this mean for human-to-human connection? As we discuss in Chap. 9, face-to-face work can achieve things that no other method can. The technologies being introduced into our public services promise to free up staff to undertake this kind of work. The question becomes to what extent managers allow this to happen, in place of increasing caseloads or closing recruitment. Much of this chapter has been about the transition of face-to-face work to something that resembles a call centre. In the next chapter we explore how AI and related technologies are in turn transforming remote contact.

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CHAPTER 5

Can I Speak to a Human? Automating Remote Contact in Frontline Public Service

This chapter tracks the evolution of remote contact in public services, from call centres to AI. It has three main sections. The first offers an overview of what is meant by remote contact and the different forms it takes. This section provides an overview of existing research in this area. In the second section we explore examples of how AI and related technologies have started to change the nature of how we interact with public services. Third, we focus on a case of a local authority who have installed an AI-based system in their contact centre. We explore what motivated this and hear from different actors in the case. The chapter concludes with a discussion of how this connects back to the two frameworks applied in this book.

Let's start by grounding this chapter with some extracts from online reviews of frontline public services in England:

> I had a right nightmare trying to speak to somebody over the phone … I gave up in the end. Will have to visit in person. It seems to be the only way
>
> I've called them twice and they were very polite and helpful, however that advice turned out to be inaccurate. the staff on the phone are "admin" and not "legally trained professionals".
>
> The council tax phone line think they have some kind of special authority the way they talk, they are little receptionists who need to get over themselves.

S. Jeffares, *The Virtual Public Servant*,
https://doi.org/10.1007/978-3-030-54084-5_5

> Asked to be put through to a PC that was taking a statement from me in the next few days and the phone was put down. Very hard to get hold of anyone on the other end.
>
> Public service deplorable, can't get past the electronic phone system, … makes me very angry that I can't talk to a real person for information or advice
>
> I phoned to make appointment for my grandchild … the young lady on the phone was very abrupt and very unhelpful with a terrible attitude
>
> Why is there no direct telephone number for this police station? Never heard anything so ridiculous not being able to phone your local police station for non-emergency call
>
> Been trying to get an appointment for two weeks now to no avail. Phone lines are "always busy" so you can never actually get through to them
>
> I have spent more than 30 mins trying to call [the] Council in order to report no collection of blue bin. It's impossible to get hold of anyone and all the auto messages are just ridiculous.
>
> I have telephoned over 145 times to date and only once was it answered only to be swiftly cut. This is such poor service and so frustrating!!!
>
> You get an automated voice saying to apply online but if you don't have internet access, press 1, the information given by an automated voice at this option is to register online.
>
> Now when you ring the so called direct dial No & get hit with about 7 options, if someone is hard of hearing or has mental health issues they could easily miss the option they want.

These are common complaints of online reviews of GP surgeries, courthouses, hospitals, schools and town halls. The main theme running through these extracts is frustration. In many instances, unable to get through on the phone, service users have taken to an online review site to vent their dissatisfaction, sometimes anger. In several of the examples the frustration is directed at the long wait; in others it is about the lack of a direct number and the need to go through an automated system. Some of the reviews pick up on attempts to deflect their call with some recorded information. Such venting is not new, as demonstrated by the following 1936 letter to the editor:

> On a recent occasion I waited 5 minutes for a so-called supervisor to answer the ringing tone. Either the operators are inefficient or the exchanges are understaffed and until a subscriber may expect an immediate reply to his call the post office instruction "In Emergencies dial 0" is little more than a farce. (London resident John Wilson from Letters to the Editor, in *The Times*, 11/11/1936, quoted in Sanderson 2017: 58)

Remote contact centres are designed to provide managerial advantages in terms of organisational efficiency and consistency of service, but the nature of the mode of communication also requires considerable effort to mitigate dissatisfaction. It is no wonder then that much of the management of remote contact in public agencies has fallen to "customer services" departments. One of the consequences of this is that the remote contact centre becomes somewhat overlooked by academic research, or belittled as a customer services issue, when in fact it is responsible for the vast majority of public encounters. In the next section we review two areas of this somewhat sparse research landscape: the first relates to how service performance can be optimised; the second to the consequences of such efforts for human agents on the frontline. This brief review takes a chronological approach to reflect the evolution of remote contact.

Remote Contact Research

The growth of call centres in government and public sector agencies led to some academic interest during the 2000s. The literature broadly splits into two—each focusing on a different aspect of call or contact centres as they are widely known. The first is around public management and performance. Here we have work that explores the role of call centres in wider transformation projects. In particular is the shift from "specific service touch points" to general points of interaction, such as the development of single non-emergency lines like 311 in the US, 101/111 in the UK. "The main goal of 311 systems is to enhance accessibility of city services, increase cities' effectiveness in responding to public inquiries, and ultimately improve city life. This evolution has greatly reduced the complexity of accessing city information and services from the stakeholders' *perspectives*" (Nalchigar and Fox 2019, emphasis added). Other work explores how 311 is changing city government and compares different approaches and cases (Nam and Pardo 2012, 2013, 2014). Work has also centred on the establishment of customer relationship management techniques and systems (Pang and Norris 2002, Hartmann et al. 2017) and explored matters of performance evaluation (Lima et al. 2014).

In contrast, other authors have highlighted the role of call centres in controlling, directing, surveilling and disciplining public sector workers. They build on critical work that argues that call centres are "electronic panopticon" (Fernie and Metcalf 1998). In a recent ethnographic examination on life in a call centre Jamie Woodcock summarises call centres as

systems of control—spaces of direction, evaluation and discipline. He argues that the scripts that call centre workers follow are "a logical extension of Taylorism" where management attempts to exert control over labour processes. He quotes Braverman's rendering of Babbage's contention that "one great advantage of which we may derive from machinery … is from the check which it affords against the inattention, the idleness, or the dishonesty of human agents" (Babbage in Woodcock 2017: 66). Woodcock described how when working in a call centre his supervisors used privacy screens so it was difficult for others to see who or what they were monitoring. Woodcock argues that the systems and methods employed in call centres amount to creating a fiction of omnipresence but also a regime of continual monitoring, reward and punishment. Similar critical accounts have explored this in the public sector (Pupo and Noack 2009). Some of this work connects with wider conversations about changing discretion in public sector work, with call centres described as a screen-level bureaucracy (Bovens and Zouridis 2002; Landsbergen 2004; Reddick 2005), but others arguing that the "death of discretion" argument is exaggerated (Evans and Harris 2004, Smith et al. 2008).

A further seam of work highlights the introduction of professionals into call centres. The exemplar here is the use of nurses. This is described as telenursing, telecare or teletriage (see Purc-Stephenson and Thrasher 2010 for review). The practice dates back to the 1970s in the US but was brought to prominence in the UK with the establishment of NHS Direct, a nurse-led phone line. Research documents similar schemes in Australia and Sweden (Larsen 2005). Whilst some focused on the shift in practice from sight to voice (Pettinari and Jessopp 2001), boredom (Knowles et al. 2002) and stress (Wahlberg et al. 2003), others focused on ideas of deskilling (Bolton 2004), the role of algorithms (Russell 2012) and professional values (Mueller et al. 2008).

Smith et al. (2008) offer a snapshot of what the NHS Direct infrastructure looked like five years after its establishment in 2003: 22 call centres, handling around 560,000 health enquiries annually. They carried out interviews with nurse assistants in two call centres, one of around 38 telenurses, and one of around 75. Smith and colleagues were interested in the extent to which the establishment of these call centres equated to Flynn's (2002) critique that this is a shift from professional bureaucracy to a machine bureaucracy. Popular accounts of NHS Direct often portray it as a nurse-led service; however, Smith's paper highlights a division of labour between call handlers taking the initial call and triaging it, directly where

appropriate to a nurse assistant. It also highlights the central role of the Clinical Assessment System (CAS) software that structures the encounter with patients—leading the call handler through a series of questions. Whilst there is a tendency in critical work to highlight the dominance of such algorithms over professional judgement, Smith et al. are careful to stress the interplay, whereby the CAS relies on the clinical expertise or occupational knowledge of nurses. Whilst some nurses complained it limited them and eroded any specialist knowledge (as NHS Direct was a generalist service), there were plenty of opportunities for nurses to over-ride or under-ride the system, where over-riding might be to skip a bank of questions about breathlessness if the patient was clearly breathless on the phone, and under-riding might be suggesting to a patient that the system's prescription of going straight to A&E was a sign of a risk-averse system (Smith et al. 2008).

An early account of the nurse-led system in Australia (started in 2000 in Perth) is offered by Larsen (2005). The study focuses on whether the algorithmic scripts reduce subjective responses and assess the resulting surveillance from call monitoring. The views of nurses reveal something of the different positions of recent recruits to what was a new way of working:

> I talked to the girls on the telephone more like a sister than a nurse. I do not make apologies for that. I was pulled up numerous times … I don't think I can be a robot. I never looked at my call times; I did what needed doing at the time; I would not maliciously do anything wrong. ("Nurse R" quoted in Larsen 2005: 141)

Larsen describes how performance metrics are shared on the Intranet to encourage competitive behaviour, something that mirrors Woodcock's experience in the private sector (2017). This involves the public display of the number of calls taken, the length of each call and time between calls. "The scene is set for competitive behaviour that ties into how nurses govern themselves. Nurses who compete and improve their performance are rewarded by receiving a promotion, an annual salary increase, a nomination for the quarterly best nurse prize, a chocolate or scratch and match ticket" (Larsen 2005: 138).

Whilst in Smith's account the use of nurses is not a replacement for nurses but rather "an adjunct service'(2008: 583), we know with hindsight that six years after the publication of the Australian study the UK's NHS Direct service was replaced by a predominantly non-clinical call

handler–led service—NHS-111. Pope et al. (2017) describe this shift to a non-clinical-led service as a significant labour substitution, suggesting that whilst satisfaction at the point of enquiry was relatively high, the call length was longer than expected, and therefore expensive, costing around £12.26 per call (£13.82 in 2020 adjusting for inflation). They also noted the number of the calls to the service, with over 15 million users in 2016. More recent figures from NHS England suggest it had increased to 16 million in 2018. They also pointed out that although calls were led by non-clinical call handers, one in four callers ends up speaking to a medical professional via the 111 number (NHS England 2018).

Such accounts of nurse-led call centres highlight how the nature of remote contact has changed. Whether the person on the end of the line is a professional or lower-paid customer service agent, the technology continues to evolve. In the next section we explore how remote contact is evolving in terms of platforms used and the methods of communication employed.

Emerging Technologies for Remote Contact

Historically call centre software and related data were hosted on in-house servers. The likes of local authorities or police forces would typically choose an enterprise software to run on these servers. This would require the call centre worker to log into a given system to log a particular type of call. In any given local authority, it wouldn't be unusual for certain services to run different pieces of software. For example, the planning department might use a different system to the rest of the organisation. This means the call handler in the central call centre would have to log into a specialist system for any planning-related queries. Because systems can be procured piecemeal, it was not unusual for call handlers to be asked to navigate three, four or more different systems to carry out bits of their work. Whilst this is an issue across the public services and beyond, the time-based performance management pressures only serve to compound these problems.

This led some to attempt organisation-wide service transformation, where one overarching enterprise platform would be selected and all "legacy systems" (some old, some new) swept aside. Such a move is often met with considerable resistance. It asks staff at all levels of the organisation to cease tried and tested ways of working. It sometimes means replacing a piece of software with a less sophisticated piece of software that happens to be compatible with the new enterprise solution. It also often requires

considerable external "help" in the form of consultancy. During the 2000s, public agencies in the UK experimented with a variety of partnership models to provide the upfront financing of such technological solutions. Such an approach became discredited as many found themselves locked into eight- to ten-year service contracts.

In recent years there has been a trend towards "cloud"-based solutions, where instead of maintaining a set of servers in house, everything is hosted by an external supplier. One of the advantages is much of the data management and security work is off-loaded. This then allows the organisation to select the most appropriate software to manage its affairs. For the purposes of call centres this may involve the selection of a single customer relationship management platform, but one where it is possible to add in third-party software applications. It is becoming increasingly common for this to be on a subscription basis, bringing in the flexibility to trial and subscribe to a huge variety of applications.

The Internet is filled with technology companies offering this SaaS, or "Software as a Service" solution, to the government, health and education sectors. Often the functions of these are broadly comparable. There are specialist features for particular service areas. Much of this is developed with an assumption that the company is profit seeking. In other cases former public service staff have developed specialist applications with processes particular to public service. This is a competitive commercial environment. In this space we have a number of players seeking to get paid for their service—the provider of the cloud-based servers (Amazon web services), the CRM platform (Salesforce, monthly payments per number of user "seats"), app developers (DigitalGenius, monthly); it might also include staff being seconded into the organisation during the initial deployment of the software. And then there might be consultants who broker these arrangements, also known as "digital partners", though it is not always clear how this is a partnership or reciprocal arrangement.

The whole world of information systems is business. A glance at the Freedom of Information (FOI) request archiver Whatdotheyknow.com reveals the regularity that public agencies have to field questions about what systems they are using and what existing systems are being used for. This also reveals something of the fragmentation of systems that a single agency can be using at any one time. For instance in 2019, Southwark Council, with a population of a little over 300,000, are using 492 information systems or databases, and only around 20% interact with one another. It also reveals that its Online portal for residents—MySouthwark—has over

228,000 active accounts where people can manage rent, service charges, repairs, council tax, benefits, business rates, library accounts, MHO registration and e-forms (Southwark 2019).

Although there are several generic global providers, CRM systems generally are sector- and nation-specific. For example, in local government in the UK, councils use the likes of Meritec (Meritec 2019) and ESB (Pentagull 2019). Meanwhile, in policing, Avon and Somerset police use Qlik as an AI-based CRM. To add to the confusion some are rebranding their CRM as CEX or CXM platforms—with a focus on Customer eXperience. In all cases they offer broadly the same types of functionality:

1. Recording and monitoring—remote contact software makes it possible for supervisors or colleagues to listen live or listen back to calls. It enables managers to investigate complaints, review staff performance and train new recruits.
2. Scripting, compliance and consistency—given the wide variety of demands and requests made by callers there is a need to maintain a set of protocols, templates or scripts that mean that generalist ("generic") staff can work across a range of areas in a way that is consistent and compliant with rules and procedures.
3. Data entry, management and security—call handlers must be able to accurately capture important details of the request on a system where it can be securely stored and where necessary shared with partners through the approved system.
4. Monitoring performance—the set-up of remote contact makes it possible to closely monitor the performance of the operation and individual team members in real time. It is possible to measure key performance indictors like average call waiting, calls dropped and average call length per query type. Additionally, qualitative measures can be incorporated by surveying callers immediately after the call. This performance information can be used at an individual, service or organisational level.
5. Turnover/recruitment/onboarding—contact centre work is low-paid and often low-skilled and intensive work. The turnover of staff is often much higher than in other areas of the public sector. Call handlers are required to deal with often frustrated and dissatisfied residents. The demand on the service can fluctuate at different times of the year and managers are under pressure to maintain service levels. The continual challenge for management is how to retain and motivate staff and how to effectively replace staff when required.

In the US, the city of Denver uses a CRM called Salesforce. It started its 311 programme in 2004. It has around 350 employees serving just over 700,000 residents. Before Denver launched its integrated CRM "people used to have to use the downtown customer service centre … For the most part they had to drive downtown, pay to park, wait in line and hope that they didn't get a ticket". Whereas it used to take 12 weeks to train a customer service agent, by moving to a cloud-based server they can focus their resources on tasks, and not on patching servers or worrying about upgrades. They used to have 22 different severs and 44 databases. By moving to the cloud they had more predictable operating costs and could reduce the team needed to maintain the system from 22 to 11. Another reason for the CRM was to develop a single knowledge base that could offer them a rounded view of the various ways citizens had interacted with the council. They have calculated that in the first month they went live they shaved 23 seconds off each call, and have calculated that for each call that is moved to an online transaction the city saves $3.50. One of the ways they have reduced calls is to launch an app called PocketGov. People can lodge an issue on the PocketGov and this goes into the CRM. The request can be tracked by call centre or case workers (Binnicker 2017).

In this example of a CRM the emphasis is on the ease for the citizen, and yet the city is actively incentivising channels that are more cost effective. Moreover the decision to use an integrated CRM is about control. It offers insight into how each part of the system is operating and how efficiencies can be realised.

Beyond the Phone

Several times in the discussion above we have heard about additional or alternative channels of communication to the traditional phone call. Below, these additional or alternative channels are introduced and discussed, illustrated by examples from interviews conducted as part of this project.

SMS—Point of Contact/Distribution

Technology for the broadcast of simple 140-character text messages (short message service, or SMS) has been available for several years and now is a highly affordable way of reaching a given community. It remains a key

element of technology for government in the developing world where access to mobile internet remains patchy. The British transport police have one single text number (61016) that passengers can use to notify them of issues or suspicious activity. This is built around their campaign slogan: "See it, Say it, Sorted". School-based interviewees spoke of using a text message application to communicate with parents. Schools find text messages are a low-cost alternative to the "note in the bag"; however, they cannot rely solely on texts, as parents change their phone numbers.

> And it's got some good benefits and some not because you're keeping another system updated. Some parents will have had the same mobile phone for six years, some will have changed it six times in 12 months, so they're not getting the messages. We're trying to keep that because you can go back in and look on a report who it has not been delivered to. It's a nightmare, it could be a full-time job. (Helen, School Administration)

Apps

In the early 2010s there was great excitement about the idea of government being a platform for applications. The investment in apps has dropped off in recent years. Where once it was seen as the future of contact between citizens and public agencies, improvements of responsive websites (websites that display well on desktop, tablet and mobile) and the expense of maintaining apps for communication between state and citizen have led to the use of apps being scaled back in favour of other methods. However, there remain examples of issues raised on third-party apps being channelled towards the relevant agency. A book like this published in the mid-2010s would probably have mentioned apps like SeeClickFix, or fixmystreet. These are general third-party apps that public agencies can subscribe to. The alternative is the emergence of "My Account" services, where something like reporting faults would be one of several functions of a single local app. We have seen above the examples of MyAccount in Southwark and the PocketGov app in Denver.

Email

Whilst the likes of Microsoft's Outlook remain the most widely used method of communication between public servants, when contacting customers a variety of CRM-based emailing solutions are used. These enable

agencies to send out personalised messages to large numbers of residents and to handle questions through email. The availability of tools that can parse natural language (unstructured data) means that, rather than requiring people to make contact through templated webs forms, customers can instead express their concerns in an unstructured email, and tools can be deployed to route that email to the most appropriate person in the organisation. Tools like MonkeyLearn offer a range of different classifiers for handling these kinds of data.

Videocalls

In the late 1990s the London borough of Lewisham council launched its Teletalk service, with terminals around the borough seeking to utilise fledgling video conferencing technology to allow people to communicate one to one with the most appropriate person in the council. Through the CRM lens described above this is an unnecessary and resource-intensive approach and much of the contact with the highly paid expert or professional is avoidable. Much of the advice can be relayed by lower-paid general staff reading from a template. There are areas of service where there has been a resurgence in video consultations. For several years GPs have offered telephone consultations. This has since been developed into a new business model for primary care. This model sees patients being given a same-day appointment for a virtual consultation, video call, usually 10 to 30 minutes, with a trained general or specialist doctor. The doctor might ask the patient to use their phone camera or microphone to help inform their diagnoses and any treatment decisions.

Chat

Perhaps the most notable addition to the call centre is the maintenance of chat, hosted on either the organisation's website and/or one of the most common chat platforms like WhatsApp, Messenger (both owned by Facebook), Apple's iMessage and Twitter's Direct Message (DM). This live chat may or may not include the use of (ro)bot technology to triage the enquiry. We will explore chatbots in more detail in later chapters, but briefly this is most often a menu-based process. The customer initiates the chat by posting a question or a concern in a box on the website or at the relevant account on their messaging app. The chatbot will offer a series of multiple-choice options that will either result in the customer being

directed to a document or resource, contact instructions, or the bot will hand over to a human agent. Unlike a live phone call, it becomes possible for human agents to handle more than one chat at a time, thereby potentially making it more efficient per-minute than a call centre. Additionally because the communication is text-based it is more machine-readable. This is a set towards automation based on machine reading and artificial intelligence.

Interactive Voice Response

Interactive voice response (IVR) has been one of the most widely used technologies in call centres over the last 30 years. Callers have long mocked the process they have to go through when calling a central contact centre which asks them to select from menus using the keypad or voice. Although invented in the 1970s it did not become mainstream until the 1990s. By the 2000s voice response systems were becoming commonplace. These systems mean identity verification can be handled by the IVR before being handed over to a human agent. As this technology matures, companies are able to replace switchboard staff. One recent example is British retailer Marks and Spencer who moved 100 of its switchboard staff to "other duties" after it deployed a speech recognition software from a company called Twilio, which uses Google's Diglogflo AI tool (Baraniuk 2018). Some systems allow for the development of voice signatures that mean customers can use their voice to verify their identity in any follow-up communication. The department responsible for tax collection in the UK (HM Revenue and Customs) started using such a system in 2017. Callers were encouraged to use a voice recognition system by training a voice profile; by repeating the phrase "my voice is my password" they can then use just their voice in future calls. Privacy campaigners complained that people were not given the opportunity to opt out of joining the system, The Information Commissioner Agreed and HMRC had to delete some 5m voice profiles. HMRC continued to use the system after the ruling but with a new option to opt in to the automated service (Peachey 2019).

Hybrid Chat

Organisations are seeking ways to use machine learning to increasingly automate web chat with customers. Variously described as hybrid chat or agent augmentation, such tools essentially seek to predict the intention of

a customer request and suggest the most appropriate response or resource from the approved knowledge base. The Swedish city of Helsingborg uses one such system provided by Vergic (Vergic 2017). In a promotional video, Vergic explain this as a virtual assistant supporting "live agents" in what they call "hybrid chat".

> The AI conversation engine listens in to every dialogue and assists the live agent as a virtual agent. The virtual agent can suggest correct responses that can be passed on to the visitor or you can set the virtual agent to fully automated to run the dialogue as a bot. It would be like the service agent had a virtual assistant supporting him to be much more efficient. (Vergic 2017)

This hybrid approach has various benefits, in part relating to speeding up the response to questions, but also fully automating more simple requests, or allowing the live agent to hand over to the virtual agent to take care of transactional details. We explore this particular form of hybrid chat later in this chapter.

In summary, whilst telephone remains the predominant "channel", we now have a varied landscape, a plurality of channels that public agencies are expected to maintain. We are witnessing a splintering of how remote contact is resourced, depending on the level of specialisation. There will continue to be a move to create a truly "generic" workforce, where non-specialist agents can turn their hand to most things, aided and assisted by the collective virtual knowledge of the organisation. However there remains space for utilising the next iteration of the gig-economy, through the employment of highly skilled professionals to engage in short, electronically informed video calls. The mainstream response, however, will remain the development of semi-automated contact centres. This effort has started with web chat. But as voice-to-text capabilities improve we will see this deployed in the form of conversational voice assistants. The case that follows below is from a local government organisation in the UK. Here the council deployed AI to help manage email and web chat requests.

Remote Contact Case Study

Here we focus on a small district local authority in the South East of England. Aylesbury Vale District Council (hereon AVDC; note as of 2020, it became part of a unitary authority of Buckinghamshire), like other local authorities in England, had seen almost 40% of its budget removed over

the previous ten years. And like other local authorities it was looking for ways of saving. The leadership at AVDC focused their attention on moving their technology into the cloud, and in this process also planned to transform how and when they communicated with local residents. As with the case of Denver, AVDC also adopted a single CRM to manage its customer communications. This then enabled them to integrate some of the many applications that are built for this. One such App was DigitalGenius (DG), that offered a degree of automation of the templates used by call centre workers. In brief, it meant that if the classifier built into DigitalGenius was "confident" of the intent of a resident it would automatically send a reply, thus bypassing the call centre operative altogether. As DigitalGenius claimed in a 2017 promotional video:

> The agent sees the question with an intelligent prompt from our AI and chooses to either approve it, personalize the answer or ignore it and then reply.
>
> If the AI is very confident about the answer, the answer is fully automated. (DigitalGenius 2017)

In this case we explore how DigitalGenius was deployed and hear from different stakeholders. Representatives from both DigitalGenius and AVDC were interviewed, and marketing and publicity materials were analysed.

We start with a somewhat elaborate means of marketing to potential clients in the form of a full-length, self-published book from DigitalGenius founder Mikhail Naumov (Naumov 2017). If there is any concern among call centre workers that their role is to be replaced by artificial intelligence, the title of Naumov's book offers some reassurance: *AI Is My Friend*: *"A Practical Guide for Contact Centres"*. Over seven chapters Naumov offers an overview of AI and how it is being deployed in customer contact, how it could be deployed practically in a contact centre, the financial benefits and a guide to how to work with technology partners. The material differentiates simple chat bots from sophisticated AI. It highlights the role of existing customer service agents in helping to train AI: Just as all drivers of Tesla cars are training the cars to drive autonomously, the same is said of deploying AI alongside humans in call centres:

> When you give the AI historical [communication] logs to train on, you're giving it a strong baseline of knowledge to start making useful suggestions, but the real learning happens when the agents start interacting with those

> suggestions by approving or rejecting them, or by personalizing them. Only this joint approach ensures that the AI can be used effectively in the long run and continues improving at a rapid pace. (Naumov 2017: 44)

Naumov's core thesis is that AI and machine learning are the natural next step from face-to-face, telephone, email and live chat approaches to customer contact. His position is summarised in this quote:

> AI and machine learning are the next technology transforming the customer service experience. It's our vision that every agent will have their own machine-learning algorithm that can learn from the agent and from their peers in order to empower and support the human workforce. At the same time, it will provide a better customer service experience, making it a win-win for everyone involved. (Naumov 2017)

This quote exemplifies this idea of human and virtual agents working side by side to improve the customer service experience. Yet, ultimately this has consequences as the AI becomes more sophisticated. His book was aimed particularly at call centre managers—seeking to empathise with the pressure to improve key metrics like "*Average Handling Time (AHT), improving First Contact Resolution (FCR) and Customer Satisfaction (CSAT)* scores" (2017: 61).

In the book Naumov also includes a number of client testimonials—including from the Assistant Director of Customer Fulfilment at the council. Here he is explaining why they chose AI at the council:

> The challenges facing Government are similar to those in the private sector. We need to meet the needs of our residents whilst working in the challenging economic climate. AI squares that circle, allowing us to respond to our residents' needs, whilst ensuring we meet regulations and our duty of care. We know how valuable our people are and we need to free up their time so that they can tackle the innovative and creative challenges we need them to deal with. (Quoted in Naumov 2017: 136–137)

At several points in this interview extract this officer plays down the difference between the public and private sector and the contribution of AI to the challenges both sectors face. "To a certain extent, it doesn't matter if someone is enquiring about luggage capacity on an airline or claiming government benefits, they need an answer, they need it to be correct and they need it to come quickly".

The account also repeats the idea of "empowering staff" and freeing them up:

> AI will free up our staff to … focus on the more complex enquiries … reducing costs and providing as good as or perhaps even better services. (2017: 140)

We find other examples of where staff have been drawn into marketing the product. The then Chief Executive of AVDC set out at an event promoting Amazon Web Services why AI had been adapted, as part of a wider digital transformation programme:

> Back in 2011 with drastic […] funding cuts and rising service costs I was facing extinction. My council would fail in less than five years. We had to drastically aim for a rapid increase in income streams and change our business model and expand our services to meet the needs of our local communities … We had to energize our people and create a commercial mindset and behaviours that changed our culture. We need to leverage the trust in the council but from a wider audience. (Quoted in Grant 2018)

The chief executive speaks of how as part of a wider transformation project in 2015 the council introduced web chats:

> We now have 1,500 web chat inquiries a month. Our agents can deal with five web chats at one go costing 15 pence per chat as opposed to one phone call costing £2.25 a call. Web chat has reduced our overall phone call traffic by 20% and in our high volume areas such as waste or benefits up to 40%. (Quoted in Grant 2018)

Once Webchats were established, the chief executive suggested they were able to use the DigitalGenius tool to reduce response times by 50% and the average length of dealing with an enquiry has reduced from eight minutes to six minutes (quoted in Grant 2018). These savings add to previously celebrated reductions in call volumes from launching an online MyAccount service. In the first five months after launching in November 2015 the number of calls dropped by 25% (Socitim 2016).

In April 2018, DigitalGenius published a promotional video starting with an interview with Grant and colleagues. Here Grant states why they focus on the "customer" rather than the resident or citizen:

> We use the word customer here because we don't say resident or citizen as if they're different people consuming different services to their life generally. They all go about their business, they go to the petrol station, they go to the supermarket, they watch Sky, they buy on Amazon, and they have our services, and so customers are judging us how they judge the whole of life. (Quoted in AVDC 2018)

The video then introduces the director of the digital programme, and reiterates the core message about "freeing up staff":

> AI, artificial intelligence for us, enables us to automate some of the basic standard processes to free up our staff's time, so that they can focus on the areas where they need to spend more time helping our customers, our residents. The questions—we get asked a lot of questions over and over again and we can use artificial intelligence to answer those questions in a systematic way, quickly, we can do it out of hours … to spend the time doing the more interesting work and answering people's queries where they need somebody to actually talk something through with them. (Digital director quoted in AVDC 2018)

And finally we hear from two customer service agents: Patrick emphasises how AI makes his work easier:

> Well, I was quite sceptical at first, but it's really won me over. It's really helped the way we deal with customer queries. We can deal with them much more efficiently. A lot of the questions we're getting are very similar, so it allows us to deal with them very very quickly and deal with more than one at a time. We find that it's learning all the time. (Quoted in AVDC 2018)

And Stacey emphasises how it allows non-specialists to respond to specialist questions:

> I can also answer questions on the subjects that I wouldn't otherwise know. I can respond to planning queries that I have no knowledge of because the DigitalGenius template is there as well to do our thing. (Quoted in AVDC 2018)

So in the marketing materials a number of themes emerge. These can be summarised as follows.

First is the idea that the success of AI is based on interaction with human agents and access to large volumes of data, and is therefore something that perpetually improves. Second is the benefit to the agent: AI "frees them up" from repetitive (and boring tasks) so they can give those that need it more of their time. Third are references to budgetary pressures on public services that require bold and innovative responses. Fourth is a sense of growing consumer expectations, that residents are customers with high expectations. Finally, AI allows generalists to perform as specialists, through the creation of a collective knowledge bank.

To what extent do we see this echoed in one-to-one interviews with those working with DigitalGenius on a day-to-day basis? We see below that many of these points are indeed echoed by DG users, but the interviews reveal more of a concern for human-to-human connection.

Training the Bots

We heard above the creator of DG repeating the old adage that AI is only as good as its data, and its success depends on human agents training it. This emerged as a theme in the interviews. Interviewees spoke about being overly ambitious in the early days, trying to write and automate as many templates as possible. But without experience, the system could not recognise the intent behind the enquiry:

> the learning curve for us is that we thought, "Oh Brilliant. Let's just load it with templates and it will learn." Of course, it doesn't work like that. We've had to strip them all back and we're concentrating on the four. Now, out of those four, they're automated, about 40%. (Manager 2)

So despite all the focus on automation, what actually is automated is rather modest. Nonetheless, this modest automation represents a significant proportion of enquiries. The automation handles questions about refuse collections, requests for an assisted collection (somebody to the put the bins out for you), and requests to order a collection of clinical waste. It is important to recognise that (Aylesbury Vale Automation) or AVA, as it is known, is not a conversational agent. Nor does it engage in the kinds of platitudes built into voice assistants like Siri or Alexa: (ala "Siri, have a great day". "Have a great day yourself Steve") but rather what AVA does is provide a set of template answers to a range of possible scenarios. Much

of this information is already online, so the novelty is not so much the content of the reply, but the way in which it is delivered.

Interviewees spoke of how the first few months of introducing AVA didn't quite go as planned. They developed over 400 template answers

> We ran it for a three-month pilot, and it didn't prove itself … it wasn't really doing anything. It wasn't really answering questions … We hadn't really appreciated that it has to learn. Although we tried to teach it, you can't teach it, because you don't necessarily behave in the same way as residents, so we need lots of data. For automation and artificial intelligence, the more data, the better. (Manager 1)

They found that by reducing the templates by half, over time accuracy improved. Two years on, the accuracy of AVA against the various templates is still variable.

> We're up to 99–100% on some, and some are 22% because they've not been used enough. They're still the right answer, it's just that it's not automated. It's not used enough that it would populate automatically. (Manager 2)

Although AVA is working much better than at first, members of the implementation team spoke of wanting to pare down the number of templates further. They gave the example of a template answering a question about cancelling a bulky waste collection (such as an old sofa or mattress). This template complements the much more common request of arranging a bulky waste collection. Interviewees believed that having more than one bulky waste template undermined the ability of AVA to correctly identify the intent. These plans to reduce the number of templates are part of a wider desire to automate AVA further: "I'm desperate to get into doing a lot more, make a lot more automated" (Manager 3).

Customer Expectations

In the marketing quotes above there was a notable attempt to diminish any difference between public and private. Whereas some echoed this, arguing that good customer service comes before any sense of public or private sector, others drew distinction between their service as other providers. For example this call handler contrasted the council with major supermarkets:

> Because everyone that's using our service has to use our service. They can't swap from Tesco to Sainsbury's. They have to stay with us. I feel once we get something wrong, their expectations will be even higher. They will hold us to that. (Call Handler 1)

In other examples interviewees suggested that introducing automation like AVA into local government is more complex than other kinds of specialist service providers. They argued that compared with a telecoms company or an insurer, there is a greater challenge facing the development of an automated assistant in general-purpose local government.

> Vodafone you are ringing up about your phone … Direct Line. It'd be my insurance. So it's not the dog poo bins, the taxi licensing, the housing, the bulky waste, something else. So the *vast* topics that we have at the local authority. It's a completely different game than it is in the private sector. (Manager 2)

Whilst there was a desire to automate more of the enquiries using AVA, with regard to paid-for services, they did not want it to be too easy to cancel a subscription. Many authorities in England now get an income stream for having a paid-for garden waste service, for example. If a local resident has a complaint about a paid service they are customers rather than residents or service users. Councils feel the pressure of keeping the customer happy and are seeking out tools that give them the capacity to be responsive to their paying customers. But at the same time they don't want to make cancelling a service something that is too easy to do.

> "*I want to cancel my garden waste service*" … I don't want to make that automated because we don't want people to go, "Okay, thanks." Here's the link and off you go.

Budget

In discussing the implementation of AVA, budgetary pressures came up on several occasions. Rather than "same with less", some argued there is a chance to improve services:

> We're protecting the public purse, anything we do should be about reducing the cost of service. Again, I like the fact that it doesn't necessarily mean that things get worse, it could be that there's other opportunities to do things better. (Manager 2)

> The reality is that we want to deliver a cheaper service, and people cost money. I'm not saying that's the right thing to do, but we should have […], we could move to get in as much as we can, without officer intervention, so that we're left with a very small pool of highly skilled people that can meet the needs and not dealing with, "when's my bin day?" (Manager 2)

At the time of the interviews managers were starting to see how the automation of web chat was starting to reduce demand on services.

> It's just amazing because it's shaved so much time off of each web chat. Also, it will automatically send on a couple of options, fully automated. The customer's done. We haven't got to press anything. (Manager 3)

Because around 40% of web chat requests are automated this remains manageable for existing staff and they have not had to replace people. Some uncertainty remains, however.

> I've actually saved money. I haven't had to recruit more people. But I haven't had to lose any either. Whether that continues, I don't know. Because if more and more automation comes in, I can't have people sitting there doing nothing. (Manager 2)

Call handlers spoke of AVA being useful to them, particularly as they are short staffed:

> At the moment there's only five of us because some of us have been pulled away to do different things at the moment, so we're quite stretched at the moment. "DG" [AVA] helps cos we've been quite low. (Call Handler 2)

Knowledge

In this fourth theme we consider whether technology created opportunities for generalists to take on specialist roles. Management spoke of a flexible generic workforce:

> But I've got very generic workforce, I've got 96 multi-skilled people, they don't just answer the phone, they don't just do web chat, they can work with some caseload as well. It's very diverse. They don't just have one subject matter. They have a variety. (Manager 2)

The development of templates for AVA has meant that a knowledge base on a wide range of issues is now easily available to agents. One interviewee spoke of how previously it would have been a case of referring an issue to a specialist, or having to speak to colleagues to find an answer. The introduction of early templates for web chat offered the opportunity to search the knowledge base and copy and paste. The introduction of AVA has taken this a stage further: a customer question triggers a search of the existing knowledge base, and it suggests which of the template answers is most useful. Here this manager talks of how easy it is to use the knowledge base:

> Back then I was originally from a council tax background, I was like "ooh no idea!" So we used to ask colleagues around us, but now if it comes up, I can put in a search term or like bins, whatever it is and up will come the templates that we've all created. (Manager 3)

Others added that although customer service staff were sceptical at first, they are now the strongest advocates:

> When we first had it, I was a bit like, "Is it going to take away my job? Am I not going to be able to do anything?" (Call Handler 2)

> I think people started to see the potential of it … they absolutely love it to bits, now. They wouldn't do without it. They're the strongest advocates for it. (Manager 1)

The Missing Connection

The greatest point of difference between the staff interviews and the marketing materials concerned attempts to make the responses more personal. Where there are fully automated replies there isn't an opportunity to add a "personal touch", but there is when using a template response. This was observed during a site visit:

Extract from Fieldnotes, 22 May 2019
Large open plan office. Contact team sit together. Each agent with a two screen PC. Mouse. Keyboard. Webforms come in as emails. DG works on both webforms and live text. On emails, it reads, guesses what the intent is, and offers a range of suggested reply text. If exceeds 90% threshold then it replies automatically signed from AVA—and mentions that it is AI. When people do a live text they are not necessarily signed in. Whilst I sat with the team somebody got in touch to say that they had changed their name. DG only had a 14% that it was about changing name. But agent confirmed it was correct and clicked accept. The instructions for how to change a name were listed—how to log into MyAccount and do that. **The only thing he changed was to add her name in manually and Hi and the name. And signed it off from himself**. Although he had not changed it, 1min later she came back and said thanks. The whole thing took less than a minute. It was very, very quick. Other people were following up about their request. In one case they had asked about waste collection. They were asking again—hoping a new person would have a different answer.

Whilst the developers of smart assistants like Siri, Alexa and Cortana have invested in writers to add in personal touches/jokes, for example, there is no attempt in AVA. As one agent explained, it is all part of keeping templates as simple as possible:

> Have a great day, Lovely, Thanks for chatting to us. And all that malarkey is not on there at all because otherwise, it's going to be completely and utterly bogged down. (Manager 3)

But because much of the message has been provided, there is more time for agents to add in a personal touch:

> We like to go in and personalise when we have time by saying, "Hi, dah-dah-dah." We can edit it and make it personal. (Manager 2)

One call centre agent spoke of doing this to help demonstrate that they are not a bot: "We still get asked, 'Are you a bot?'. 'No, I am actually

here.' They will ask you to put a smiley face just so to know that you're a real person" (Call Handler 2).

What the council have not done is gone so far as to give AVA a human avatar, but they did feel the need to have a degree of transparency that the answer to an enquiry had come from a bot:

> We decided that we would sign it off from the automation service, so, "Aylesbury Vale automation," was … what the AVA piece was. We don't advertise it. We don't promote Ava as the thing, as a face. For us, it was just a true declaration of what was happening … We haven't tried to personify it. (Manager 1)

Despite this, some in the team admitted to humanising AVA: "I always think of her as a woman which I probably shouldn't do. It's probably very sexist to say that. I just think that it saves a lot of time" (Manager 2).

Conclusion

Remote contact introduces control, efficiency and consistency, but contact centres remain one of the most complained about forms of communication. This dissatisfaction peaked as organisations started to outsource their communications to external call centres or other public and private agencies, and when they started to contract with public service companies. Draconian call centre practices aimed at control and efficiency were somewhat alien to what people considered public service. This was coupled with a shift to a consumerist discourse in public service. The introduction of single points of contact, memorable numbers and call management systems means that demand for the service can rise above what a public agency can afford.

The remote contact technologies discussed in this chapter share a common concern for control and cost. The portrayal of call centres in the literature that opened this chapter exemplify contact centres designed to maximise the regimes of control, monitoring, reward and punishment. Next along from here are the Clinical Assessment Systems developed in the first iteration of the NHS tele triage system. By way of contrast are the likes of SMS, MyAccounts and NHS 111 non-clinical triage. Here the emphasis is toward saving money over all else. SMS is a cost-effective way of reaching a grip of service users, simple number services—both SMS and phone are organised to reduce the need of expensive specialist or

professional input but to offer a degree of convenience. The likes of email offer the means for users to use their own platform (rather than having to download an app, register for a MyAccount). This presents a greater challenge for the organisation, to be able to triage/prioritise unstructured text. We will read in later chapters how organisations are trying to deal with such a challenge. Fourthly, we have the likes of videochat, a more expensive medium reserved for calls with resource-intensive specialists—but, it is hoped, enabling something close to or exceeding the kinds of face-to-face contact discussed in Chap. 4.

This chapter has also raised several arguments for the greater use of AI in remote contact. There are ideas around enabling specialist knowledge to be deployed by a generalist/generic workforce. This sits squarely on a cost-control axis. There is the desire to both meet expectations AND make savings. And the oft-repeated argument that such technologies free up staff to connect better with those who need it. AI is offered as a triptych of duty of care, financial climate and resident needs, which provides the context for the use of hybrid chat—where virtual agents assist human agents, handing back and forth. In this chapter AI has been portrayed as the ideal balance between the most convenient customer services across a range of channels, in a way that is compliant and consistent, measurable and cost effective. But also running through this are concerns about connecting call handlers to the technology, and call handlers and the people they serve. In the case of the former, the role of a call handler is transformed, with agents freed from the drudgery of repetitive tasks and instead working hand in hand with intuitive AI-informed systems. Regarding the latter, this gives them the latitude to give a more personalised and connected service. Even if the human agent has never met the person before, the system can compensate by reading deep into their backfile and suggesting matters to raise, events to recall and questions to ask. In this position, AI is nothing to fear but rather it stands to be a friend to customer, call handler, manager and tax payer alike.

In this chapter we have explored the pressures to reduce the cost of remote contact, and the opportunities and challenges that automation and AI-based software offer. The case of automation in a contact centre showed that, as well as helping to deal with volume, the software introduced the idea of automation to a group of officers, enabling them to invest in being more “commercial”—mitigating the increase in demand for their service and encouraging behaviour change to self-service. In that sense automation is about reducing head count and reducing demand for,

and expectations of, remote contact with public services. Automation helps with the genericization of service. This offers flexibility for responding to seasonal demand in parts of the "business" and inspections, events or serious incidents. It also helps with redistribution of resources around the organisation. There is opportunity for greater personalisation—however in the case described above it was largely about the posting of copperplate instructions. Speed and efficiency rather than personalisation.

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CHAPTER 6

The Non-Public Encounter: Self-Service and the Ephemoralisation of Public Service

Service users are also increasingly required to self-serve. In April 2016 I attended a meeting in a local authority town hall. Instead of being greeted by a receptionist, I entered my email address into a self-service kiosk and a radio frequency identification (RFID) card was dispensed, giving me access to the building. I navigated to the room listed on the email invitation. After the meeting I left through a turnstile, depositing my card in a box. The whole experience was somewhat discombobulating. While I had become used to buying train tickets on an app or self-scanning groceries, I had expected to be met by somebody at reception, for them to ring the person I was meeting, to be collected shortly after and have an awkward conversation about the weather during the walk to the meeting room. Later that night I looked up the company that made the self-service terminal. There in bold letters: "This is a complete-self-service solution. No human-interaction required". Self-service wasn't only a money saving exercise; it was a badge of pride, a symbol of convenience.

In this chapter we flesh out this rationale and explore how self-service is understood. We then focus on a range of self-service technologies in place in our public services—these broadly split into two types—self-service in physical locations and self-service in online and mobile applications. The chapter draws on interviews with frontline public servants and managers, and includes a case of self-service libraries. The chapter argues that like retail public services are

S. Jeffares, *The Virtual Public Servant*,
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increasingly embracing self-service as part of a wider connected strategy. It includes further ephemoralisation of public service in a shift from the physical to the virtual and that will see further detachment of staff from their user group and place greater emphasis on the use of AI to draw meaningful insights from ever larger amounts of data.

Like the previous chapters, the discussion here is focused on these new technologies and new ways of working in public service. Some early references to self-service connect to the emergence of volunteerism in public service (Glazer 1983) and how organisations can incorporate self-service to foster a better customer experience (Goodwin 1988). Self-service has been associated with other concepts, some defining self-service as a form of coproduction between provider and consumer (Moon and Frei 2000), whereby organisations can use their websites to post useful information. In much of the literature self-service is a channel, part of a wider suite of e-government channels—a webform, a kiosk (Reddick and Anthopoulos 2014; Cholta et al. 2018).

Madsen and Kræmmergaard (2016) differentiate between channel choice literature that tends to focus on the individual's rationale for using a particular channel (e.g. Pieterson 2010) and multichannel management studies that explore government efforts to migrate citizens to more cost-efficient channels, Most often this is self-service. Previous chapters explored these motivations and cost comparisons. Two claims that have persisted in much of the literature on self-service in government are, first, that it is most successful for simple high-volume tasks, and second, that many attempts over the last 20 years have only had a modest impact (Reddick and Turner 2012). Faced with modest uptake of self-service channels, public organisations have pursued policies of digital-by-default, manifesting as mandatory requirements to apply or manage a particular service using a self-service channel. Examples include Denmark setting a target that 80% of citizen requests in 35 service areas should be self-service, and the UK government's requirement for Universal Credit to be online (Madsen and Kræmmergaard 2016; Harris 2019).

Much work on self-service has focused on particular policy domains, although there are those that look across public services in general (Kernaghan 2012), such as a study on how Japan introduced a self-service tax in 2003 (Chatfield 2009). In health care, earlier work looked

at service effectiveness and patient satisfaction with technology-based encounters (Chang and Chang 2008). More recently the idea of self-care (à la undertaking duties previously assumed to be the role of a public servant) has taken hold (Zainuddin et al. 2016; Sarasohn-Kahn 2013).

More critical accounts of self-service include Loader (1998), who sees the adoption of self-service technologies as a prelude to a self-service welfare system. His idea of *self-service welfare* grounds the objection that "the welfare service commodity is transformed to enable it to be produced in the home or local community … the recipient is responsible for taking on almost all the labour costs for the service, and the service may facilitate the transfer of labour costs to individuals, voluntary organisations or teleworkers" (p.228).

Building on Hoggett (1994) Loader argues further that

> Self-service welfare implies a strategy of remote control whereby individuals take on the responsibility for controlling their own actions … The empowerment achieved through the acquisition and manipulation of knowledge has an implied corresponding responsibility to solve one's own problems. (p. 228)

Similarly Eriksson draws a connection between self-service and consumerism, by distinguishing between participative politics and self-service politics:

> Whereas participative politics rests on and promotes activity based on active participation and the public good, self-service politics generally views its subjects as customers, users and consumers. Thus it is possible to consider a democratic system based on individualized responsibility, general consumerism and information technology as a kind of 'self-service democracy. (Eriksson 2012: 686)

Finally we have Lambert's critique of self-service in his book *Shadow Work*, in which he defined it as all the unpaid jobs we do on behalf of business and other kinds of organisations (Lambert 2015). He questions why we are happy to pump our own gas and why a lawyer on a six-figure salary scans and bags her own groceries. The aim of his book is to shine a light on all the various tasks that we now complete that

were previously entry-level work. Lambert highlights how self-service technology means that we are now our own secretaries, airport check-in agents, pump attendants, till operators, bank tellers and travel agents. All these tasks, he argues, eat into our precious time, in contrast to the hope that technology would free us from such drudgery. In the next section we explore self-service in public service, with examples of technologies and cases.

Online Self-service

A most basic type of self-service is an online form that can collect structured information. Previously this would be a paper form completed by the service user or by a public agent on their behalf. If hosted on an organisation's website, they are submitted and follow-ups would be handled over email. At their most basic they are essentially structured emails. Over recent years organisations have moved over to user accounts. There are several precedents for what local authorities in the UK refer to as "MyAccounts". In Estonia, or E-Estonia, as it brands itself, the country has had a single national ID card since 2002. These cards enable the 98% of citizens that have them to log into a single portal containing a range of "e-services" including entry into the population register, travel tickets, parking fees, health records and e-prescriptions. The two pin numbers and related two-factor authentication for use with a mobile phone mean citizens can access a range of services online and without the need to telephone or visit a physical location. Denmark has a similar system for government work, a portal called Borger.dk (Citizen.dk) where citizens can log in using their NemID (or EasyID).

The introduction of MyAccounts in the UK was first mooted around the time Estonia were launching their national ID card (e.g. Davies 2002). But for a variety of reasons the UK has not adopted a universal digital ID system. In its place at the national level there is an opt-in "Government Gateway" ID. In practice much of the emphasis has been on making digital processes as seamless as possible. The Government Digital Service is frequently lauded as an example of good practice, and has been emulated elsewhere.

Box 6.1 A Case of How a MyAccount is Addressing the Missed Bin
When customers shout up that their bins have been missed it is usually because it's contaminated with polystyrene on a recycling week. And we want to make sure we get to the bottom of it. But we certainly don't want a customer shouting without us being able to put it right … But if we have genuinely missed it, we go back for it within 48 hours. The crews they go around with a system, with iPads in the trucks, and it's all documented.

When you log on to MyAccount and just say my bin was due to be collected today, it would say bin date today, and it after six o'clock you would be able to click that button and report it as a missed bin, provided the crew hadn't marked it down as not presented or contaminated. [in which case it would be] flashing up saying sorry you can't report it because it's contaminated.

And the next morning, that's when they then ring up and say "it was not contaminated" … Garden waste bins, for example, at this time of year are obviously quite popular, with people out gardening. So a lot of people are weeding and chucking in their old flowers, but if it's got soil on it, you're not allowed to put soil in the bin. Because of the health and safety of the crews … they're not allowed to put soil in, it's on your terms and conditions—the small print.

So the work for us is dealing with the customer who's saying "look, I do understand, I know and I get you're now in a position. What on earth are you going to do?" We then have to talk them through that. Calm them down. I love that and I love sharing how I do that with people.

(Customer Service Manager Jenny)

Self-Completion Webforms

Web forms are the work horses of online self-service infrastructure. There is nothing particularly complex about a set of boxes on a website. Much of the challenge is making sure the information people give goes into a CRM (customer relationship management) or equivalent information system. These relatively simple forms, when well designed, can save public agencies considerable staff time spent completing forms on a customer's behalf, manual data entry or scanning paper forms or email

attachments. Representatives of the Estonian or Danish systems above do away with applications altogether. Why should a parent have to apply for a universal-type child benefit if the state already knows they have a child, their age, address, date of birth and so on. Advocates argue that there is much avoidable wasted time.

Yet there are other aspects that rely on users to report information: such as incident reporting to the likes of environmental health, fraud agencies or local police. In the previous chapter we explored the role of 311-style non-emergency contact services. Web-forms and those integrated into mobile apps can be used to reduce demand for telephone services and encourage more online reporting of lower-level crimes, damage to civic infrastructure and so on.

In the below quote customer service agent Nick reflects on the range of services that previously had to be ordered through him, and could now be done online. Further to this it was now his job to promote these alternatives, and this was now monitored by the council in his performance reviews:

> Basically you can report your bin missed online, … change your council tax details. … change of your address online and everything like that … fly-tipping or anything … you can order your clinical waste pick up, we do a bulky waste service where we would take fridges or settees … you can choose your day and it'll take you to payment and all that. We've got online forms. It's just trying to get people to actually use them now. A lot of people will just do it—… but a lot of people will still want to talk to you especially if they rung up in first place. (Nick, Customer Service Agent)

His problem with promoting self-service to somebody who has been waiting in a telephone queue is that by the time they get to him, they just want him to log the request, not be instructed on how to use a website:

> Problem we've got is they have rung up to report their bin is missing, … they'll know it's going to take me 20 seconds over the phone to log it or it's going to take me 20 seconds to sign-post them to where these forms are on there. They're like "Just do it now!" (Nick, Customer Service Agent)

Staff are now being monitored for how many self-reportable matters they are logging. This mirrors the experience of customer service centre

staff in Chap. 4 who are encouraged to direct visitors to a self-service terminal before booking them into a queue to see a customer service agent"

> We have stats and things like that, how many people we've actually reported missed bins for or fly tips for and obviously the less you reported the better it is, because they're doing it online … A lot of them will but a lot of them won't, if they don't want to, you've still got to [do it]. (Nick, Customer Service Agent)

Symptom Checkers

The online symptom checker takes many forms. Early versions were online, with a series of decision-tree questions. It offered a means for people to make a judgement of whether they need to rush to A&E, make an appointment with their doctor in a few days or take a paracetamol and get an early night. When it works well it has the potential to save thousands of unnecessary trips to hospitals, to prevent needless anxiety and reduce burden on an often overloaded health care system. But at its worst it results in somebody with a life-threatening or life-altering condition deciding not to seek the help they need. Second to this, the rigid decision-tree-based system leads to frustration and reduced satisfaction, which can undermine trust in the system.

There have been a number of symptom checkers for several years now. A study in 2015 evaluated 23 English-language tools (Semigran et al. 2015), and concluded that the tools made the correct diagnosis a third of the time, and listed the correct diagnosis in the top 20 suggestions just under a third of the time. Whilst marginally better than not seeking help or using a search engine, the paper suggested the tools were overly cautious and of marginal value. Other studies of users of the apps, such as the Dutch app "Moet ik naar de dokter?" (Translated: "Should I see a doctor?"), report relatively high levels of satisfaction and two-thirds of users intending to follow the advice (Verzantvoort et al. 2018). Two thirds of the users were female, and fewer than a fifth were aged over 45.

Over the years symptom checkers have migrated to mobile applications, to chatbots and to systems based on forms of artificial intelligence (AI). The hope is that such tools offer a more personalised and accurate diagnosis of what is happening. This is a shift away from flat algorithms

to something deeper, leading to claims that these tools are as accurate as medical practitioners, or even more accurate. The online GP company Babylon Health claimed in 2018 that its symptom checker had sat and passed GP exams (Razzaki et al. 2018), scoring 81%, some 9% higher than the average (Copestake 2018).

Such publicity stunts attract close scrutiny, and evaluations sometimes conclude that the tools are not as sophisticated as promised:

> Babylon's study does not offer convincing evidence that its Babylon Diagnostic and Triage System can perform better than doctors in any realistic situation, and there is a possibility that it might perform significantly worse. (Fraser et al. 2018: 2263)

Box 6.2 A Case of an Online Symptom Checker

The company has also attracted scrutiny on social media, with clinicians critical of the advance of AI-based diagnosis sharing videos the system making mistakes. Here a Twitter user (@DrMurphy11 (biography listing him as an NHS consultant) shares an example of him roleplaying a 66-year-old, 20-a-day smoker who has started coughing up blood, his appetite and energy levels are reduced, and he is constipated. After 2 minutes of multiple-choice questions on the "online doctor" application the system makes a series of predictions as what might be the issue. Before issuing the predictions it states the caveat found in all of these systems: "This is for information purposes only and does not replace medical diagnosis or advice. If you're concerned or something changes, please seek urgent medical advice or contact emergency services". In this case it suggested that the possible cause to be "Moderately Likely as "Ileus, Slowed or absent bowel wall movement, This is usually treated at the emergency department", with further less likely suggestions of myxoedema coma, blockage of the bowel, small bowl obstruction, bronchitis and so on. The consultant then demonstrated that a Google search of "I am coughing up blood" resulted in a quicker and more accurate diagnosis—suspected lung cancer—than the "dangerously flawed chatbot". It prompted a series of follow-up comments about the future of a health care system led by robot doctors (Murphy 2019). This account is deeply critical of the claims around AI in primary care (see Twitter accounts @DrMurphy11 and @BadBotThreads).

Babylon is political. It is facing opposition from doctors who connect the inflated claims about the potential of AI with its business links. This opposition connects together the start-ups and those that seek to further privatise parts of the NHS.

In a letter to the *British Medical Journal* GP Dr Margaret McCartney describes online health care services like Babylon Health as "Breeding with the vigour of rabbits". She highlights how they are attracting NHS GPs to transfer over with pay and perks; the claims of being faster and more accurate than doctors; the connections with private health companies and the lack of independent evidence about the efficacy of the artificial intelligence or the reduction of pressure on NHS services. She concludes:

> When we drop the threshold to consultation we change the demographic such that false positives easily become more common, potentially leading to unnecessary emergency department or GP attendance—which, in turn, makes it harder for sick people to get attention. If this happens we will be creating more dilemmas, not solving them. Innovation without sufficient evidence is a disservice to all. (McCartney 2017: 358)

As a rejoinder—the medical director of Babylon Health, Mobasher Butt, argued McCartney's criticisms were politically motived:

> Since we introduced our artificially intelligent symptom checker to Babylon subscribers, we have reduced same day GP consultations by 40% by appropriately providing alternative care, such as reliable healthcare information, self-management advice and pharmacy support. This is quite simply a game-changer for the economics of delivering GP services. (Mobasher Butt in reply to McCartney 2017: 358)

> As of October 2019 it had 50,000 registered patients in London and 2,500 patients registered in Birmingham and plans to expand into Manchester in early 2021. (Chowdhury 2019)

Chatbots

The year 2016 marked something of a turning point for the chatbot. Facebook boasted that over 100,000 chatbots had been developed on its platform. It seemed a long way from the days of Ikea's "Anna" who since 2005 had been offering customer advice. Interviewed as to why they had decided to remove this online assistant, Magnus Jern from Ikea said:

> In the beginning, we tried to impersonate a person, and we found that there was no reason to do that … In fact, trying to make Anna "human-like" meant that people were more likely to ask it stupid questions, … Around 50% of questions were sex-related, … If you try too hard to be natural, it diverts from the real purpose of it, which is about giving the right answer as fast as possible. (Quoted in Wakefield 2016)

Whilst in 2005 the online assistant was something of a novelty, by 2016 it was easier than ever to build a chatbot because of the availability of tools to build and deploy bots with little or no programming knowledge.

Chatbots may be understood as an extension of the form-based symptom checker in that they allow users to feel as if they were taking part in a live webchat, since bots are able to use natural language. In practice, however, chatbots have ended up being more about offering menu cards, introduced with a human-like informality. This is simpler to deploy than something based purely on natural language. There are many precedents for this that predated Ikea's Anna, such as the robotic psychotherapist "ELIZA" (Weizenbaum 1966).

There are plenty of examples of chatbots being deployed in public services around the world, below we discuss examples of Singapore and Finland (Figure 6.1). In Singapore it is Ask Jamie VA (virtual assistant), which since 2014 has been deployed in over 70 different government agencies including the police, land transport authority and national environment agency, and also offers a chatbot in Facebook Messenger. Singapore's GovTech agency for Singapore, who maintains Jamie, suggests the following five benefits:

> Greater convenience and accessibility to the government, 24/7; quick and direct answers to queries; Availability of self-help and reduced need for call centres; Ability to get help without the need to know which agencies to go to; and Better user experience through conversational digital interactions. (GovTech Singapore 2019)

Users of AskJamie are invited to click a link to a live chat box, each illustrated with a stock image of a customer service assistant: young, female, formally dressed. It is perhaps no surprise to find examples of people publicising how they have attempted to "flirt with Jamie" (MS News 2018). Jamie is hosted by FlexAnswer (FlexAnswer 2019). The tool includes a "thumbs up/down" feedback to allow users to give feedback on the quality of the answer, which in turn will help train the Virtual Agent to improve.

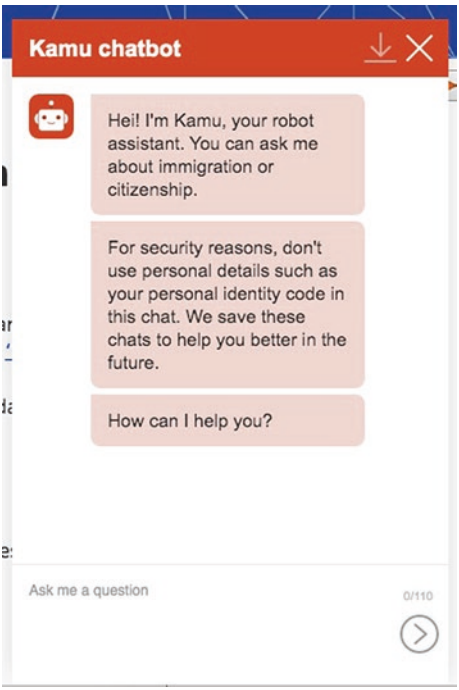

Fig. 6.1 Kamu chatbot in Finland, AskJamie in Singapore

Since 2018 public agencies in Finland have had a number of "robot assistants"—each with a different identity and role. They use cartoon avatars rather than human images. In this example I attempted a conversation with Kamu (Finnish Immigration Service 2019) who is listed as a specialist in residence permits. I started with a question often put to Jamie and Anna—"are you single?"—Kamu replied, "Yes, I don't have time for a relationship because I am chatting all day long". I asked what Kamu does in its spare time—"I like talking to you". I decided to shift the conversation to asking about a residence permit. I role-played being a non-EU student looking to find out information before arriving in Finland to complete my studies. For each question I asked, Kamu would guess my intent and offer a series of menu cards—"Is your residence permit application for: work; family; studies; permanent residence; other?" It is essentially another version of an online form. The menu card means there is less work for Kamu to do to guess intent, as choosing from a menu is more reliable. However, it is also less like a natural conversation. I tried asking, "How

Fig. 6.1 (continued)

long can I stay on after my degree?" Kamu replied ,"I understand that you have completed your degree in Finland". This was unexpected: in my role-play, I have not yet left my home country. The question that followed was also subtly normative—"Do you already have a job in Finland or are you looking for work?" There is no option of, for example, "I'm currently unable to work, I'm caring for my disabled partner". Kamu tried to keep me to one of two answers with the use of cards, but I wrote, "I am unable to work". Kamu replied with "I can help you find out residence permits for work…" and we started over. My case was too complex. This information is available on the website, but offering it via a robot provides another means of access to this knowledge base.

Physical Self-Service: The Kiosk

The physical machines are now a mainstay at railway stations. In larger stations passengers have the option of getting their tickets in three formats—from a person behind a desk, from a ticket machine or using an app or website to purchase a mobile ticket. Ticket machines offer the means to reduce or remove staffed hours. This has long been the case in some places. Indeed, the first ticket machines date back to the 1960s. One view is that kiosks offer one of a plurality of methods—providing the widest choice whilst also replacing unnecessary human interactions. Alternatively, there is an ephemoralisation view (Fuller 1971) where progress is understood as moving from the material to the abstract. This would mean that kiosks' days are numbered—just like the people they replaced—they in turn will be replaced by a digital transaction. The London underground is a case in point, where before the 1960s entry to the tube was by using a ticket checked by a guard, then it was a ticket into a machine, by 2005 it was a contactless oyster card, but by 2015 people could enter using their mobile or Apple Watch. The next iteration is already visible in China—where people can order food using their face.

It has been interesting to watch the evolution of technology in the business sector, for example, the use of this technology in hotels and in the catering industry. A major change was when McDonalds reversed a previous decision to avoid touchscreen kiosks in its restaurants. This physical infrastructure is somewhat at odds with the idea of ephemoralisation. Take, for instance, the role of a payments service in a local authority. Historically there would be a cashier office—imagine the desk, a queuing system, security glass. Residents would come in to pay their council tax, using cash. In seeking to transform this service there are two avenues—one is to stop accepting cash and suggest that residents use alternative methods, and where cash is required to seek out the services of a third-party provider, such as a post office or bank. The alternative is to install a self-service machine. This would allow residents to continue to come to the council and pay in the money. What is it that a resident seeks—is it the option to hand the money to a person, or is it to hand money over in an "official" council building? Are those councils that opted for the machine offering an intermediate technology?

These machines have a symbolic role—they take up space where previously occupied by humans. For the remaining human agents, their role may have changed from sitting behind a desk to now taking on roles that

did not previously exist, such as “Greeter” and “Floor Walker”. The role of the greeter is primarily triage, but it is also about actively encouraging people to self-serve. The role of the floor-walker is about reducing chances that people abandon their self-service, offering support and advice to help them complete their transaction. The human agent and the kiosk become colleagues. Yet it is also a dynamic situation. Consider the ratio of humans to passport gates in major airports. Whereas a few years ago there might be ten gates staffed by border guards and a bank of four experimental e-gates supported by one or two floor walkers, we now find 12 e-gates, one floor walker and just one border guard.

The preceding sections have explored a range of self-service technologies being deployed in public services. Most are accessed online through web browsers and mobile apps. At the most basic is a webform which feeds into some kind of reporting or archiving system. Basic chatbots are a means of automating the collection of data, and an attempt to replicate more of a human to human experience. Instead of spending ten minutes on a call where a call handler enters the information into a form, the user does it in conversation with a chatbot or a probabilistic symptom checker. What the interviews illustrated was their role to incentivise service users to make use of the channels. Whilst there remains a choice of channels some will continue to choose to wait in a queue, either physically or on phone line, rather than make use of these self-service offerings. There remains a significant proportion of users who don’t trust the system. For budget holders, particularly in those where they are working with reduced budgets or a shortfall of skilled labour, this non-use of self-service is unsustainable. In order to provide some further context to these competing pressures the next section illustrates this with a case of how self-service technologies are being introduced in local lending libraries. The case explores how the technology seems to offer a solution to all four of the discussed problems of frontline public service: more control over staff and stock, delivered at reduced cost offering greater convenience and wider access. Whilst some would argue the reduced staffing means it undermines connection, an alternative perspective would be that staff are freed up to spend more time with users and less time on laborious admin tasks and the insights from data can lead to a more personalised and targeted offering.

The Case of the Self-Service Library

The idea of self-service technology in libraries is long established (Brophy 1997; Butters 2007), with much focus on the use of self-service terminals for checking books in and out rather than self-service access to building. Although rarely called self-service, the practice of making an e-book collection available to local lenders is also a form of self-service, removing the need to attend a building or engage with library staff. The next iteration of self-service has moved to making the whole building available to users without the need for staff to be present (Fahim et al. 2019). In this section we explore how one local authority took the decision to make all but one of their libraries self-service for around half of the week. Much of this was motivated by cuts to budgets of around 40%. Decision makers were faced with a decision of whether to close all but the most frequented libraries or whether to explore alternatives like self-service. The case draws on in-depth interviews with frontline librarians and senior managers, together with a review of press and social media coverage. We start by understanding the technology involved.

The system used in this case is called *open+* from the company Bibliotheca.

> Open+ is a comprehensive system that allows libraries to provide more flexible hours, making them more accessible to the community. Designed to complement staffed library hours, open+ can be implemented in a number of ways to meet various library service models. (Bibliotechca 2018: 2)

The marketing includes examples of four user groups that would benefit from extended access: older people wanting "quiet time", students seeking a quiet place to study in the evening, shift workers and commuters unable to attend in traditional open hours, and parents with young children looking for a "welcoming and enjoyable space". They state that whilst the average US public library opens 52.8 hours a week, open+ is open up to 98 hours a week (Bibliotechca 2018).

The system works by installing a card reader at the front door. It allows open+ members access to the building when the building is unstaffed, including on evenings and weekends.

In the UK where public libraries have suffered a reduction in funding over recent years, it has also opened up an opportunity to reduce staffed time. Instead of staffing a library for 52 hours a week, the alternative is to

staff it a few hours per day in conjunction with an 80 hours per week in open+. It allows the library to extend service access whilst reducing costs.

Tameside is a collection of nine market towns in North West England, with a population of around 225,000. The towns were joined into one local authority area of Tameside in 1974 and named after the river Tame. Whilst several of the towns are an extension of the nearby urban conurbation, the borough also includes semi-rural mill towns and rural villages bordering the Peak District National Park. Each of the towns has traditionally had its own identity—and library. Below is a timeline of how the council began to implement a self-service library system.

- 2003—Introduction of council service advisors in all libraries
- 2011—Consultation about future of libraries.
- 2012—5 libraries closed. 8 remain.
- 2016—Consultation about what hours should be staffed. Library management system in need of replacement, no self-service, open+ considered as a way of keeping libraries open.
- 2017—May—Self-service terminals launched.
  - July—open+ announced.
  - November—open+ launched in 4 libraries
  - December—launched in 2 more libraries
- 2018—January—launched in 1 more library.

The July 2017 press release emphasised that the new system would enable:

> much greater access to libraries … meet the needs of residents while saving money … cheaper to run … the money saved can be spent on vital services …. meet demands of the 21st century … opening hours double … 276 to 495 … greater choice … greater flexibility … CCTV … no unaccompanied under 16s … more inclusive … job hunting … accessing online services. (Tameside MBC 2017)

Prior to the introduction of open+ the larger libraries in the borough opened according to the following timetable: 08.30–17.00 during the week, with one late night opening to 20.00. The library would be open on Saturdays for around 5 hours, either 09.00–13.00 or 10.00–15.00. The

open+ system meant that libraries were open 09.00 till 20.00 every night but staffed only for around 12 hours per week. Staffed in half-day blocks, staff in a library for the morning would move over to a different library for the afternoon. Whilst unstaffed, the libraries would be available to all open+ members. To become an open+ member, existing library members are required to complete a brief induction to ensure they are aware of how to use the door access and rules about safety and security.

Having set out an overview of the case and the technology used, we now explore the experiences and viewpoints of staff involved in the development of the system.

Cost and Control

For senior staff interviewed it was a matter of meeting explicit wish of the elected councillors that we would not close any more libraries. This solution means extending the opening house for that can self-serve and keep a handle on the budget. Implementing this system does carry costs—especially when starting from a base that none of the stock had RFID chips, there were no existing self-service provision and there were historic buildings that needed adaptation. "You can't do it overnight". Top two concerns from the consultation was safety of users and security of the "asset". RFID and CCTV technologies enabled to know who was in the building, and what stock had been lost. There were some unplanned issues—green exit buttons being used by mistake, meaning doors would remain permanently open, some tailgating including incidents with homeless people and higher than expected cost of adapting listed and historic buildings. It is important to remember that library use is no longer measured by footfall as so much of the library resource is in the cloud—and about supporting access to electronic resources. There will remain uncertainty about future demand for libraries but we need to be clear they offer much more than literature: they continue to be

> A community hub and a neutral space for people to come to for whatever it is that they need … a "go-to building" if you like. If you've got a face to face enquiry go to your library.

The self-service terminals: "frees up the library assistants and library staff, librarians to actually then do other things. That might be plan activities, but it might also be to help people that have got more in-depth

enquires or something that's not about just about checking your books in and out" (Senior manager 1).

For another manager interviewed:

> It's that every man thing, isn't it? It's one of the … few places where you don't have to justify being there … Nobody is going to say, "You've been here an hour and you've not bought anything." You can spend all day there if you wish. You don't have to be using the services. If you just want to sit there quietly doing your own thing, that's fine. There's that side of it and that fulfils quite an important social role. (Senior manager 2)

Open+ is a way of saving the last eight libraries in the borough from closure but it does spell the end of a universal service.

> We have a limited budget, which is constantly shrinking, and it's about targeting your resources in the most effective way. We can no longer, sadly, in some respects, offer that very broad universal access. And a lot of people can and are happy to get on with it do it themselves. We need to support that and give them more and more, we need to support people to become more independent. However, there is still a very real need for human contact and that is one of those soft things that library services provide, around human contact. (Senior manager 2)

Where face-to-face contact is required it can be done through programmes of social interaction, readers groups, well-being activities and events. Open+ offers a gift of time. It fosters independence and confidence.

> That technology has allowed us to let them do that themselves. It's given them the gift of time I think as well an independence and then gives us time to concentrate on people who do need or want that face to face. I think the stage we're at now is there are people who want but don't necessarily need face to face. Our next phase really is to persuade them and give them the confidence. (Senior manager 2)

We are not doing people favours if we do it for them:

> People do need skills and they need to become more independent which will help them in a range of ways but certainly help them to function in today's society. We are not doing any people any favours by continuing to do everything for them. (Senior manager 2)

Connection

The library staff interviewed emphasised the role of a local library for older communities:

> "bless them, old people are lovely, they will ring up and say, "I'm sorry, I can't come into the library today. I have to go to a funeral," or, "I have to take my husband to the hospital. What do I do about my books?" (Library staff 1)

The funding situation is very difficult—"we have been squeezed like a lemon". It has been a period of anxiety for staff and people are naturally resistant to change. Libraries also serve non-readers: people who want customer services have high expectations and expect to be spoon fed sometimes. They are finding it harder to get what they need from their library. The restricted staffing hours and open+ is somewhat confusing for non-readers, and can lead to frustration and dissatisfaction who have expectations that if the library is open there is somebody there who can answer their query. The location and layout of the building matter a great deal and use varies by library and building type.

> It's a bit frustrating for them because they're behind Mrs. so-and-so who's got a query, she wants to pay her council tax, she wants to reserve a book, and she wants to tell you about her little dog. (Library staff 1)

People frequently queue up to see her and declare they are helping to save her job. They refuse to use the machines.

> "They say: "Well, I would like to see a person because I don't want the machine to take your job." It's like, "That machine is not taking my job. That machine is helping me because in a busy period, I can direct people to that, and then they're being able to do what they need to do without having to wait, and means that it frees me up to deal with the more in-depth inquiries then." (Library staff 1)

Some people are put off using open+ because of the safety of the building.

> "The key concern has been … I don't want to be in a building without staff there to help if something goes wrong, whatever that something may be, be

> it technology or—I don't want a strange man lurking in a corner. Certainly, with the older generation, safety is why they're a little bit, "I don't want to come in. It would be a bit spooky". (Library staff 1)

For those that use the library for social contact open+ does not help them.

> It's a sad fact that most of the people that use the libraries are elderly. With the elderly people, it's not so much that they don't like new technology. A lot of the time, it is, "I don't understand it," but I think a lot of it is sometimes, this is some of the only social contact they will ever have in a day. There's one little lady we know of, … We know she doesn't read. She's just coming in for that face to face contact … it's important that we still have that face to face contact for people that the digital world isn't that accessible for. New technology isn't that accessible for them. It's the social contact because, otherwise, it's a very sad situation for them. (Library staff 1)

Staff suggested there was an opportunity with open+ to offer even more hours; they could open seven days a week.

> "Why do we close up at three o'clock on a Saturday afternoon, there's no reason for that, why not just leave it in open+ Saturday afternoon and all day Sunday? It's not costing anything". (Library staff 2)

Staff thought it was a pity that under-16s can't use open+, which means in some cases if a teenager wanted to use one of her libraries after school they could do so only on Mondays and Thursdays and that there is a need for face-to-face presence:

> We offer a lot of reassurance, a lot of calmness as well. I think that's quite difficult in an email or over the phone. I think people still need to see those facial expressions and make eye contact. To know that you're telling this truth, to know that yeah, everything is fine, it's absolutely fine. (Library staff 2)

Criticism of Self-Service Libraries

In both our case study areas and nationally there has been opposition and campaigns against the development of self-service libraries. Tameside's TUC (Trades Union Congress) secretary argued the council had usable reserves, reminded a total of 14 out of the borough's 22 libraries had

closed over recent years, that surveys of the public suggested a quarter would not use self-service technology and that women would be reluctant to use an unstaffed library for fear of safety.

> Could library users be put in potentially dangerous situations if they become isolated? CCTV would not necessarily allow for a rapid response if someone was in danger, nor would it deal with a medical emergency, a power failure, or a tipsy miscreant hell-bent on annoying library users. (Bamford 2017: 22)

This issue of user safety has been the main argument in other areas where self-service has been mooted. One example of opposition to a self-service library is a video made by campaigners who were against the London Borough of Barnet's introduction of a self-service system similar to open+. The campaigners made a video, set in a library during self-service hours, to show a series of vulnerabilities. Participants in the video acted out a series of scenarios. These included: "tailgating, malfunctioning automatic doors remaining open, somebody having a heart attack, users having an argument, toilets being locked, discriminatory barring of under-15s, unaccompanied children gaining entry and subsequent threat to these unaccompanied minors from predatory adults". The voice-over included:

> Who is that woman? Does the little boy know her? Without staff to monitor their presence, are our children safe? Perhaps this is why they are barred yet we've seen they can get in. Barnet council needs to think again. (Save Barnet Libraries 2016)

Barnet council later introduced self-service in ten of their libraries, with around 39,000 (72%) of active library users signing up for the service (Murray 2019). In the wake of a reduction of a third of full-time library staff in the last decade, the increased use of open+ and related systems has attracted criticism from the UK library association: "It's a folly … it is dishonest to represent this as a library service when taxpayers have paid for a quality service with a librarian … Libraries are a statutory service. People have a right to expect a certain quality of provision, and councils need to be honest with local people if they can't provide that" (Chief executive of UK Library Association, Nick Poole, quoted in Murray 2019).

Conclusion

This chapter has demonstrated how things have moved on from a discussion of the use or non-use of self-service channels. At several points during the interviews for this book interviewees talked about their own experience of supermarket checkouts and how they or family members made a conscious stand not to use the self-checkout. Several of the interviewees, particularly those in customer service roles, spoke of how callers would point out that they had chosen to call or queue because they wanted to save them from losing their job. Although well intentioned, this is somewhat naïve to how things have moved on. The investment in chatbots and is more than a cost saving exercise, it is advancing the development of type of digital ecosystem. As retail consumers the clues are there. Your coffee shop is unlikely to be running a loyalty card scheme with stamps on a paper card any longer. It is more likely encouraging you to build up loyalty rewards using some form of electronic card or app. This is part of a conscious "connected strategy" (Van Bellegham 2017). How many times on recent trips to a shop have you been asked by the assistant, "can I have your email address to send you copy of the receipt"? Emailing you the receipt is sold to you as a matter of convenience (no pesky scrap of paper cluttering up your house or wallet) or control (you don't have to worry about losing it; we'll have you on file), or cost (we can pass on the savings on paper to our customers). But the real incentive for the retailer is a matter of connection. It is the reason Tesco launched its clubcard in the mid-1990s. On the surface it is sold to you as a means of offering a more personalised communication—offers and vouchers for things you love to buy, but the real advantage is understanding your behaviour, your preferences. What Van Bellegham means by "connected strategy" is the opportunity to use AI to offer an unprecedented experience for customers whilst harvesting and analysing an unprecedented stream of data to understand user behaviour, emotion and intention.

What this chapter has started to reveal is that while many of the technologies developed for retail and communications are being adopted by government, the motivations are different. The MyAccount discussed above is a case in point. In a sense it is the public sector's version of a coffee shop loyalty scheme. Whereas the coffee shop loyalty scheme is about maintaining a customer, encouraging frequent visits, in many respects the MyAccount rather than seeking to increase visits to their facilities is trying to incentivise and foster self-care, self-service. Budget holders are placing

pressure on their frontline staff to play a critical role in this change—as we saw in the two previous chapters and above, frontline staff are being performance-managed to direct people to self-serve channels.

The case of the library helps to illustrate the attractiveness of self-service technology—it seemingly offers a win-win solution: more control over staff and stock, greater convenience and longer opening hours, staff freed up from admin to spend more time with those that need it and at a reduced cost. Longer term this datafication of library use will allow AI to be developed to offer even more personalisation and understanding of community need. During interviews for this book library staff spoke of the role of "weeding" where they prune out under-used or unused books. They can get clues from borrowing data, but much of the decision is based on an aquired understanding of their library users, the kinds of requests and questions they field on a daily basis. But on the one implications of self-service libraries means fewer staff, working for shorter spells in more sites. To compensate for this severance from their local communities are enormous treasure-troves of digital data that extend far beyond borrowing data—but data on searches, requests, electronic correspondence, and complaints. And with self-service facilities and in some locations—face recognition—it offers data on how and when the building and stock are used, who is using the facility with what frequency. It seems the semi-detached peripatetic librarian will be reconnected by a wealth of digital user data and AI systems to help interpret it.

If there is one principle that defines the direction self-service is heading it is ephemoralisation (Fuller 1971); so neatly illustrated on mass rapid transit; from ticket booth, to ticket machine to RFID card to smartphone and smartwatch; with each iteration a shift from the physical to the virtual. If tolerated, the next step in such a process of ephemoralisation of the transit example is face recognition. Something similar is happening in retail and indeed could be deployed in libraries and other public facilities. Note the criticism above in this chapter of online symptom checkers and self-service libraries—the main argument is one drawn of a problem of control; it is a matter of safety. Yet the accounts from library staff interviewed here remind us there is also a problem of connection, that so much of the role of the community librarian is not easily captured or measured. For those politically opposed to this shift it is easier to point to safety; as we saw in Chap. 4, articulating a loss of connection is far harder but something that advocates suggest AI is well placed to offer. In Chap. 8 we explore this further, with an array of robots and virtual agents that are

being deployed in frontline public service roles, but first Chap. 7 considers the most public of public encounters: a role for social media.

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CHAPTER 7

The Management of Social Media in Frontline Public Service

If face to face is one to one, self-service is one to no-one; a social media public encounter is one to one *and* one to many. At the extremes a conversation between a public servant and citizen is shared and debated to a point it spreads virally across the world. Whilst rare, this presents a democratic opportunity for increased transparency, scrutiny, social accountability, and with this a relatively unprecedented form of surveillance, what some have dubbed sousveillance, on our public servants. It has brought in new roles and new practices. The aim of this chapter is to unpack the idea of social media in frontline work.

After a brief overview of the main platforms, we start by exploring how social media came up in the interviews with existing frontline public servants—how social media is becoming part of their role, and their hopes and anxieties about its use. This leads to questions about the whole idea of social media management (SMM) and the use of software to support this. One area of public service that has readily adopted social media is policing, and this will be the focus for much of this chapter. The analysis will contrast two types of social media use in policing: that of the police officer vs the communications professional. It draws on a set of interviews and a corpus of social media posts outlined in more detail in Chap. 2. The data collected allow us to compare not only the two groups of frontline social media users in policing but also observations of what they do with what they think they do.

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The preceding three chapters have followed the three main channels of communication in public service—face-to-face work, remote contact centres running phone lines and live chat, and the increased availability of "self-service" sites, apps and devices. But there are other channels of communication—notably social media. There are immediate differences—whilst the preceding channels are private, social media is by definition to some extent public. There is also a departure from the usual formalities, the rules of public encounters—social media platforms potentially offer something more creative and informal; to a large extent the platform is chosen by the user, not mandated by the service. Then the question is how does this shape the public encounter—does it resemble any of the more established channels or does it offer something different, and with what consequences?

By way of introduction we start with an overview of the features and uses of the main three social media platforms in use in public service today. New platforms are launched every year, with the likes of Snapchat and TikTok examples of run-away successes. But in government social media practices, established platforms such as Facebook, its subsidiary Instagram, and microblogging platform Twitter remain predominant.

An Overview of Social Media Platforms in Public Service

Facebook

The way in which social media platforms are utilised by consumers and providers of public services is somewhat dependent on the nature of the platform. Outside of China, Facebook is now firmly the most widely used platform in most countries, with over 2.7 billion users. It is commonplace for public agencies to maintain Facebook pages, pages that are as publicly accessible as any website. Users can "Like" the page, or choose to follow updates. When an organisation posts on its page, the post will appear in the News Feed of "followers". Posts from the organisation are typically a short amount of text, an image or set of images or a video. Users can react to the page by Liking it (or expressing a range of other emotions including "Angry" or "Love"). They can also comment on it and share it, with or without comment, with their own network of Facebook friends and followers. These functions have evolved since Facebook was first launched in 2006, and will continue to do so.

Platforms like Facebook are first and foremost advertising platforms. They make money from charging organisations and individuals to advertise and this is dependent on developing methods for incentivising users to consume content on the platform for as long as possible. More recently, Facebook has modified their newsfeed algorithm to prioritise what it describes as "meaningful interactions" such as commenting and sharing rather than time spent passively Liking and scrolling (Tien 2018). Much of the early literature on the use of Facebook by government and public services suggested a tendency to broadcast rather than utilise the interactive spirit of an interactive communication platform. Despite this, Facebook pages remain a corporate communication affair, with carefully considered and frequent posts to inform or engage the page's community. Since the Cambridge Analytica scandal of 2016 Facebook has offered greater transparency on how organisations are paying to target who reads their posts, particularly where it is politically related. Where previously businesses and organisations could reach their friends and subscribers for free, they now increasingly have to resort to invest in advertising on Facebook. This is known as the end of organic reach. For example, Police Scotlands spent £4000 to boost 61 of their Facebook posts between September 2015 and September 2017 (Police Scotland 2017).

Instagram

Instagram, also owned by Facebook, now has over one billion active users, over two thirds of whom are under 35 years of age. Whereas many public agencies opened their corporate Facebook accounts around 2010–2011, their use of Instagram is a more recent development. Whilst Facebook offers a broad spectrum of post types, Instagram started out as an image sharing platform and has since become a popular choice for organisations to share one-minute-long videos. Users can like and/or comment on posts. Posts are also tagged with often several hashtags that connect the content to similar posts elsewhere on the platform. If a police force posts a video of one of their dogs in training, they could also reach a wider audience beyond their followers by including tags of #Police #dogs #policedogs #dogsofinstagram and so on.

Since its inception in 2010 Instagram has been known as a home of the "selfie", where account holders regularly share pictures of themselves. For frontline public servants Instagram offers a place to share selfies of themselves "at work", or connect to a global community of colleagues on

hashtags like #paramedic (1m), #nursesofinstagram (736,151 posts), #medstudent (1.7m), #firefightersofinstagram (27,636), #teachersofinstagram (5.9m) and #Police (7.5m). It has offered a means for some to develop large followings and a means of publicising longer-form videos on YouTube. One officer from Arkansas, Officer Tommy Norman (@tnorman23), has posted on Instagram over 26,000 times and built a following of one million, sharing pictures of himself and the local residents he encounters as a community police officer (Rogers 2016), although since 2017 he has been forbidden by his force to post whilst on duty (Eberhardt 2017).

Twitter

With around 330 million active users, Twitter has been around longer than most platforms. Since its inception in 2006 it was a platform used to share news and ideas about government, politics and public service practice. It began as a text sharing platform, with just 140 characters, but over time has struggled to compete with the dominance of Facebook and the rapid growth of Instagram, Snapchat and TikTok. Arguably its popularity among celebrities, politicians and journalists has maintained its profile in the wider media. Unlike Facebook where the majority of posts are visible only within groups of friends, when users tweet on Twitter it is public. This in turn has attracted considerable academic attention, particularly as Twitter made their Application Programming Interface (API) openly available for study. Some referred to it as the largest focus group in the world, and as offering an unrivalled insight into public opinion.

As with the example of the Instagram police officer above, individual public servants started using Twitter to share information about their working lives and to connect with local communities. At an organisational level, public agencies began to follow suit and gradually formalised the management of accounts, with Twitter used in tandem with Facebook and latterly Instagram/Snapchat accounts. Some cities were early adaptors of the use of Twitter as a 311 service (San Francisco's SF311 service is the exemplar) but over time more and more organisations encourage users to contact them via dedicated Live Chat or Email services instead, where any reputational or prejudicial issues can be better (privately) handled. In policing, regardless of whether a 311 crime reporting service is offered on social media, people continue to report incidents and crimes through platforms, despite attempts to dissuade them.

Here we have explored three major platforms: Facebook, Instagram and Twitter. Mention too should be made of Snapchat, and Weibo in China. Public agencies also maintain YouTube profiles and LinkedIn is an important networking platform for senior public servants. Messenger platforms like that of Facebook's Facebook Messenger and WhatsApp also play a role. Streets and neighbourhoods are maintaining WhatsApp groups, where they can either discuss issues of public service or occasionally invite local politicians or police officers into the group. Just as much as social media has become a space for public servants and their employees to share a positive image of their work, it has also been a platform of sousveillance (Mann and Ferenbok 2013) and protest. This can take a number of forms. A marketing hashtag campaign for MyNYPD was used by angry citizens to share images of police officers harming local citizens, and to create hashtags like #PoliceBrutality on Instagram or tags like #Ferguson (Bonilla and Rosa 2015) and #BlackLivesMater (Carney 2016). More recently attention has focused on the way social media platforms can be infiltrated by conspiracy theorists and hostile states to propagate "fake news" or propaganda (Allcott and Gentzkow 2017). This has been exacerbated by the use of AI to create convincing "deep-fake" video and voice files (Chesney and Citron 2018). The prevalence of review platforms also play a role in social media encounters; both Google and Facebook offer an opportunity for users to post 0- to 5-star reviews and comments about public services.

While most research on social media has focused on either commercial exploitation, social movements or political campaigning, there is a notable gap in research into its use in public service (Jeffares 2014). In this earlier work I offered a review of some of the literature prominent around the time that many public organisations were creating their first corporate Twitter and Facebook accounts. This included the development of dedicated brand communities, as tools for engaging with (for example) residents, or of encouraging positive behaviours (Fisher and Clayton 2012). Studies about the use of social media during emergencies, such as floods and fires, dominated the research landscape. While this was important work, it did not reflect the day-to-day somewhat mundane use of social media in public service. There was work around public servants behaving badly, and privacy concerns around governments and public agencies using social media APIs as surveillance or sousveillance tools (Jeffares 2014, Ch. 5). There was also a dramatic shift in how social media was being researched, from emerging forms of ethnographic studies of online

communities ("netnography") to ever-larger datasets of 500m+ items (Wilkinson and Thelwall 2012).

Some of the most helpful developments in the study of public service came from the likes of Innes Mergel and Albert Meijer and co-authors. In 2010 Mergel first introduced a framework of social media strategies—push, pull and networking (Mergel 2010, 2012)—that was subsequently advanced by Meijer with Thaens to explore differing strategies of North American police departments (Meijer and Thaens 2013). Mergel with Bretschneider also conceptualised the way in which public agencies adopt social media, starting somewhat informally before developing more formalised protocols (Mergel and Bretschneider 2013).

Meijer and Torenvlied (2014) then set out to explore whether social media de-bureaucratise the organisation of government communications. This distinguished between a bureaucratic and a post-bureaucratic model of government communication. In the bureaucratic model control over external communications is centralised and channelled through gatekeepers (Ruth-McSwain 2011), casting policy actors as depersonalised functionaries (Kallinikos 2004) maintaining a disconnection between internal and external communications (Egeberg 2003), in controlling what is shared from outside to inside and what is broadcasted from inside to outside. In contrast, in the post-bureaucratic model of government, communication is decentralised to make for smarter, more flexible communications. This model allows government actors to communicate informally in a personal way, and blurs and connects the relationship between the internal and the external, to permit the exchange of ideas, not just broadcasting. Meijer and Torenvlied examined the widespread adoption of Twitter by Dutch police. They found a large proportion of accounts to be decentralised accounts—of individual officers, or towns or police stations. However they found only a minority of police officers have a personal identity on Twitter and use it mainly as a tool for communicating outside their organisation rather than a tool for internal communication. They conclude that this co-existence of different forms of practice amounts not to a wholesale de-bureaucratisation, but to a hybrid model:

> The hybrid nature of the organization of police social media communications can be regarded as a reaction to changes in the outside world that require government organizations to be both centralized, formalized, and closed off from its environment and decentralized, personalized, and open to its environment. (2014: 15)

Although careful to point out that social media remains a minor player in the game of communication, Meijer and Torenvlied raise some important questions around what can be learnt about public bureaucracies in how they organise corporate social media activity.

Much of the remainder of this chapter will focus specifically on the use of social media in policing, contrasting how police officers and centralised communications teams use social media in their frontline work. First, however, we explore how some of the interviewees from frontline areas other than policing talked about social media. As I noted in Chap. 3, social media was not something that I raised explicitly but it came up frequently, and in two ways. One was about a sense that social media was contributing to an "expectant culture" (Sally, Customer Service officer), where people could raise issues and expect them to be addressed immediately, where issues could be debated and escalated. This was an experience shared by not only those who worked in customer services but also by those in professional services, as expressed by Jill, a primary school teacher:

> I feel that there's been a change in culture. I think a lot of it is heightened by social media and people then wind each other up. I think they expect a response like that [clicks fingers]. For us, we're in class teaching and the response can't always be [instant] *like that*. I think parents are not as patient with that. (Jill, Teacher)

This interviewee then went on to talk about how parents had set up their own Facebook page to discuss matters related to the school. This was not open to school staff. This presents a significant challenge for the school who are unable to monitor what is being discussed or when issues begin to escalate.

Interviewees who managed or worked in frontline customer services discussed how monitoring social media was increasingly part of their role. This helped to maintain a presence and a responsiveness. Yet it was also a source of fear and anxiety. They spoke of the caution with which messages were handled. Customer service advisors in Nick's call centre were given lists of names ("a black list") of people not to engage with when managing the council's Facebook page, and instructions of how and when to escalate certain messages to the corporate communications team.

> There's a few groups on Facebook who'll just literally spend all day complaining to the council … We don't handle them. They go up through our communications team. (Nick, call centre)

Interviewees with management responsibilities acknowledged that social media is a good resource for reaching a wide audience, but also the pitfalls and the careful job of taking the conversation *offline*, of "shutting down" the public airing of negative feedback:

> We do sometimes get things wrong. What we're saying is that we won't enter into conversation about something. If you want to do it, take it down the right channel … It can antagonise the situation. You've got to be very careful. There's a very tight line around social media … It's a very dangerous tool unless it's handled correctly … to give out messages and to get it out to a wider audience it's an amazing tool. But I do think it can become a real platform for people to voice their negativity. (Jane, Head of Customer Service)

This point does concur with research that suggests social media helps to propagate dissatisfaction. What is clear is that reputational risk means public servants are quick to respond, and such messages will be prioritised over email or other private forms of communication:

> We have a way of even tracking their telephone number. I will get straight on to them. I will send them a private message, it will say, "please let me know what time and day you phoned and I will address this". (Jane, customer relations)

We will revisit these concerns about reputation, and doubts about social media as a public form of public encounter, later. The next section will now turn to focus specially on the use of social media in frontline policing. Whilst the use of social media is widespread across all our areas of public service, its use by blue light services, and in particular police, is noteworthy because social media is used both corporately and individually—with specialist communications officers managing Facebook pages back at police HQ, whilst individual police officers manage their own public communications from a smartphone out on shift.

Observing the Police Use of Social Media

What are the police doing on social media? The question, first asked by Crump (2011), focuses on both the activity and the motivation, plus whether it is legitimate for police to invest resources in such activity. Police use of social media has attracted sustained interest from academic research.

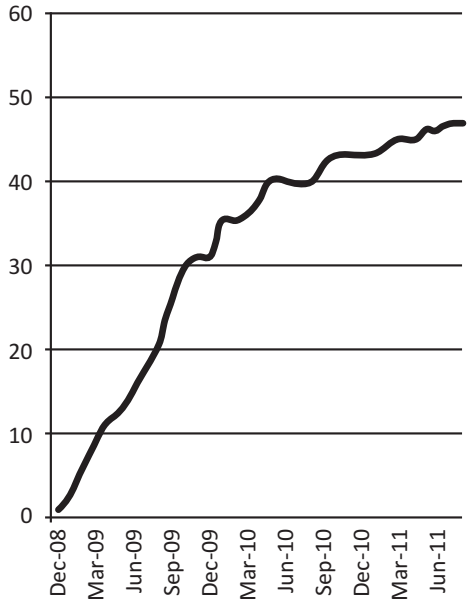

Fig. 7.1 UK police forces opening a corporate Twitter account over time. (Source: Twitter.com)

The first wave of literature asked broad questions about how police use social media in different countries (the UK, Crump 2011; US, Lieberman et al. 2013; Schneider 2014) and explored patterns of adoption (Mergel and Bretschneider 2013). Twitter profiles reveal when accounts were opened, by visiting each of the 42 police forces in the UK. Figure 7.1 shows the rate of adoption, and that by June 2011 all but one had opened an account (recent figures in the US suggest 96% of forces use a Facebook page). Also within this first wave was a focus on social media as a tool (effective or ineffective) of emergency management (Procter et al. 2013). During the 2011 summer of unrest in English cities the police were unable to police local citizens who were using social platforms to mobilise (Trottier 2012, 2015). This has prompted questions about how the police can engage in monitoring (Bekkers et al. 2013), predict signs of community tension (Williams et al. 2013) and communicate messages that are not ignored (Van de Velde et al. 2015).

Academic research has also asked questions about how social media might offer tools for community policing, as an opportunity to build relationships and trust (Schneider 2014). Whilst some find a significant positive impact on trust and on closing of the public-police disengagement

gap (Warren et al. 2014), others point out that social media might strengthen police legitimacy but only for a minority of interested citizens within the wider population (Grimmelikhuijsen and Meijer 2015). While an officer posting a picture of a recent conviction might attract several hundred messages of positive affirmation, the question becomes how much this represents general community support, rather than just the usual affirmation of the minority police fan-club.

Comparative study of police and local government has led some to question whether the implementation costs of social media technologies outweigh any managerial benefits (Hess and Waller 2013). An accusation commonplace across studies of large organisations—like police forces, councils or for that matter airlines or energy companies—is a failure to recognise social media as more than a broadcast tool. Studies of early adopters observed police departments displaying the propensity to transmit information rather than discuss or collaborate with local people (Brainard and McNutt 2010). This has prompted the characterisation of social media strategies as informative rather than dialogic or collaborative (Brainard and Edlins 2015).

Cascading information comes naturally to large public organisations; entering into dialogue in a publicly visible electronic forum is far less straightforward. Biases built into the very fabric of social networks mean they are primarily designed for individual-individual interaction. It is large organisations that have to adapt to show a human side, through language, humour and informality. In practical terms this has led to the employment of a new category of employee, variously named (social media manager, community manager, digital team, etc.) but whose job is to perform this human frontline role (Charest and Bouffard 2015). Such a role is found most often in corporate communications departments, designed to uphold a codified "social media policy" and the use of third-party software through which all corporate accounts are managed.

As Mergel and Bretschneider (2013) suggest, soon after opening corporate Twitter and Facebook accounts around 2009–2010 these forces then started to develop protocols for conduct—such as who had permission to post as the police or in an official capacity. For forces in the UK this meant having to decide whether existing officers who maintained Twitter accounts were permitted to do so, and whether they had to surrender their user credentials to their employer. In the case of the police force in this

chapter, it was a matter of allowing police officers to have Twitter accounts but restricting Facebook to corporate communications. We will return to this decision later, but here, in this section, we are studying a group of police officers with (some degree of) control of official police Twitter accounts. Whilst many of these accounts are managed by individuals, some are also team accounts. This might mean the account is managed by different groups of officers depending on shift patterns, or in practice it can be one individual officer who posts "as the team". With around 300 accounts across the whole force, some individual and some team, it is difficult to arrive at an exact figure of how many in the force are active on social media but interviewees estimated it to be between 10 and 15% of the overall workforce.

So what are the officers doing with these accounts? To start with there are three different styles of accounts: the helpdesk, PSB (public service broadcasting) and the Canteen. These are defined by two factors—who are they engaging with: (citizens or colleagues) and what is the nature of the post (informative or informal/friendly). There are some accounts that display a mix of them all, but more often they fall into one of three types.

The Help Desk

"Helpdesk" accounts are exemplified by traffic cop accounts. These are high profile and have above-average numbers of followers and receive a relatively high number of daily mentions. Although police colleagues may be sharing their content, replies on these helpdesk accounts are reserved for citizen requests. These accounts are highly responsive. On one observed day, the two-person crew managing the account on that shift replied to 250 messages. The helpdesk traffic accounts performed a plurality of roles—switching between reporting incidents, offering advice, engaging in jokes, seeking intelligence and teaching people about the rules of the road and the minutiae of traffic law.

Public Service Broadcasting

This cluster of accounts are also highly responsive to messages from the public, and engage in a balance of informative and friendly replies. These are often local team or individual accounts but a common trait is that a

dedicated officer monitors the account and replies often immediately to questions, salutations or shared jokes. They do not get a high volume of mentions, so maintaining this type of account is often possible alongside other duties. This might also involve responding to abusive messages or trolls. It is also evident they have built a loyal following of local residents over time, resulting in salutations at the start and end of each shift. It is these accounts that come closest to breaking the social media policies, and displaying acts of discretion, as might be expected of a frontline police officer working face to face.

The Digital Canteen

This category is exemplified by individual accounts held by senior officers. Most of their content are about and directed at colleagues in their own force and elsewhere. Canteen accounts reflect Waddington's observation that "The canteen is an arena of action separate from the street, where in contrast to the latter officers act before an audience of their peers" (1999: 287). Twitter offers a platform for the daily practice of storytelling, something Van Hulst observes as a crucial part of everyday station life (2013: 624). Although the daily exchange of jokes and "banter" and backslapping is observable, most are rarely of interest to Twitter users. It might be something the local press monitor but in the main it offers a convenient way to communicate, and is a public display of admiration between colleagues for awards, promotions, "results" such as convictions or arrests, or favourable performance statistics. Any social network analysis of these accounts would likely reveal strong ties between a relatively small network of senior officers. In contrast to a neighbourhood team account, many of the middle- to senior-ranking officers have a relatively low public followership. As a result the activity is internally focused, while also cognisant of its publicness.

As with previous studies of police social media activity, a range of roles can be identified. The most important point is how some accounts vary in being either relatively heterogenous (performing a range of roles) or homogenous (performing just one or two). Based on an analysis of some 68,000 tweets related to UK police force accounts, Table 7.1 describes roles according to how account holders reply to questions or situations on Twitter.

Table 7.1 Seven roles that the police play when responding to questions on Twitter

	Description	*Reply to example*
Teaching	Pedagogic extrapolation of rules or law, occasionally moral/ethical	You can't ride a bike that size with just a car license.
Reporting	Latest dispatch from the scene	The road will reopen in an hour, please be patient.
Commending	Acknowledgement of team or exchange with colleagues	Great result today, well done #dreamteam
Collecting	Acknowledgment of intelligence or request for further information.	Thanks, we'll look into it. Can you confirm the precise location?
Advising	Help desk, signposting and copying in appropriate agency.	Please phone 101 and give your details.
Policing	Verbal warning.	If you do that again I will block you.
Conversing	Friendly exchanges, salutations and banter.	Aw, thanks! Have a great weekend yourself!

Police Interviews

Having observed what police appear to be doing with their Twitter accounts, we now explore how they describe their activity when interviewed (again, details of methods in Chap. 2). A selection of illustrative quotes from the police officers have been grouped according to the three types of account: help desk, public service, canteen accounts.

Help Desk Traffic Cops

A police Twitter account functions like a virtual helpdesk, a trusted person able to advise and, if required, signpost the query to the most appropriate person or organisation:

> A lot of the time, it's signposting to the right organisation, because I'd probably say 90% of those aren't police matters, it's council, or it's DVLA [vehicle licensing], it's Action Fraud, whoever it might be. So, there's a lot of signposting there to put people in the right direction. (Communications Officer P)

Unlike a corporate account, however, members of the public can direct their question to a known local or specialist police officer.

> Historically, we'll hold surgeries to get people to come in, we'll do this that and the other. That's not the way people operate anymore. So Twitter was just a natural way of communicating. (Inspector S)

Officers referred to their Twitter accounts as their "eyes and ears": "Social media is an absolutely vital, lively part of our intelligence to help us know what to do. So we will hear that something has happened before the incident was reported" (Superintendent P). Police accounts often contain in the account description (Bio): "Do not report crime here" and yet people do. Although the official procedure is to reply and request they report through official channels (such as the non-emergency phone line 101), officers saw the value in following up on intelligence that comes much quicker than the official process:

> Police's internal post is notoriously slow … It might come to us more than 14 days later. (Traffic Police Constable, M)

> So someone will take it, pass it to the intel department who will analyse it and then you might not see it for two or three weeks "Someone's given you information about a drug dealer … social media is fine for passing that over … we'll sort of take a drive past there later and see who was there". (Traffic Police Constable S)

Officers discussed how in some neighbourhood residents can be reticent about reporting criminal activity through official channels but will engage through Twitter: "A lot of them don't want to ring the police and say, 'I've got this problem.' But you'll find, you'll say, 'We're in this area dealing with motorbikes', and then you'll get someone" (Police Constable A).

It is sometimes necessary for officers to police their feeds. They occasionally face encounters with critics and trolls. "They called me all sorts of things, threatened me … So I was called a smug, fat, arrogant bastard, and my colleague went, 'Well, you're not smug!' " (Superintendent P). All the officers recognised these critics and most said they chose to ignore them: "If I were to block them, it would almost be … dignifying them. Maybe that's what they want, they want the reaction from me" (Inspector S); "They want that reaction, don't they? So I just leave them to it" (Police Constable A); "I don't want to give it oxygen" (Superintendent P).

But some officers spoke of the opportunity to take on the critics and trolls and police their own feed. They spoke of agonising over whether to reply or intervene in a debate, and the delight when intervention achieves the desired goal of defusing a situation: "And you think what a great tweet that was, that was perfect" (Traffic Police Constable S). Their supporters sometimes come to the aid of officers. In this example a critic of a police operation was himself then attacked online by supporters of the police "And then he got trolled by about 50 juvenile teenagers who went onto his Facebook account and everything … They trolled him and ripped him apart" (Traffic Police Constable M). Officers also spoke of how their Twitter account helps them maintain a police presence that will discourage criminal acts, how an account can "increase that paranoia for the right sort of people … we can give the impression that we're everywhere" (Traffic Police Constable S).

Public Service Broadcasters

Unlike their corporate communications colleagues located back at HQ, frontline officers are the first responders on the scene of an incident. Local accounts can send out reports of recent arrests, or news of an increase in a particular form of crime in a given area. Officers are proud to be a trusted source of information, "Members of the public want to know a credible source of reliable information" (Chief Inspector K). Here they are using Twitter as it was first intended, modelled on dispatch (Schneider 2014). Officers are also aware of the natural curiosity about police activity: "members of the public love a good crash and to see a mangled wreck of a car … or people in their NATO helmets smashing down a door. People love that as well" (Police Constable A). Both police and communications officers spoke of the opportunity for the force to control its own press, and how local media scrutinise their feeds in search of stories. Some officers also spoke of a need to have a voice online because of the pressure of citizen journalism, where their encounters with the public can easily be captured and shared: "They'll sit there with a camera, take our picture, take all this and you can see them putting it directly onto Facebook" (Traffic Police Constable, S).

Officers expressed a strong desire to educate the public. "It's good for sending out quick crime prevention messages, pictures of things you come across, quick snippets, and it takes literally seconds to send a tweet" (Police Community Support Officer C). "They might go, 'I'll have a quick read

of that,' and then wallop, there you are, you've drawn them in a little bit" (Traffic Police Constable S). Whereas some talked of sending out useful advice, for others the education comes in two-way exchanges with the public—for example, explaining the rules regarding a particular traffic violation. Whilst officers mentioned helping to disseminate force-wide campaigns with their accounts, they conveyed a keen sense of their audience and the kinds of messages that are relevant. Where at one time crime prevention advice would be delivered face to face at schools, community events and meetings, Twitter offers a more immediate channel: "You're educating the public. You're letting them know we're out there, because I think nowadays people don't see the police as often because there's less of us" (Police Constable A).

Behind the uniform and protection equipment the police use, several expressed a desire to use Twitter to show their human side. "Police officers are still human, and members of the public don't want to see stern faced officers all the time. They want someone who's a bit approachable" (Police Constable A); "Twitter, for me, should be making us human. It should show the different sides to us and engage people in a different way" (Inspector S); "My kids think that's brilliant. It's almost like the bobby coming into the school with a dog, which is harder to do now. We're human, we're people" (Superintendent P). This might involve contributing videos to popular online memes (e.g. Ainge-Roy 2016), or sharing cute pictures of police dog pups in training. Although such posts attract many likes and shares, officers are often motivated by other forms of interaction:

> Your tweets need an edge, you can't tweet corporate … I don't follow the [main force] account, it's boring, if you follow that you'd think we run a kennels, not a police force, because it's just pictures of puppies isn't it? (Traffic Police Constable M)

Namely "When [an officer] tweets it's a personal message. And I think people really relate to that" (Traffic Police Constable S). Humour is a key element of this, sharing a joke: "You want to humanise it, you want to make it interesting, you want to make it a little bit funny … Some people say … 'where are the doughnuts?'—great, bring it on, love it, I love a bit of banter!" (Chief Inspector K).

The Canteen Cops

As we have seen, officers use their Twitter accounts to publicly acknowledge the work of their teams and colleagues. One senior officer discussed a recent picture he shared of a successful operation: "I know [PC x] will see that picture, and I've thanked him personally, but the team will see it as well. And the power of what I can achieve when I'm not at work through connecting with my staff [using Twitter], I think is huge" (Chief Inspector K). Senior officers describe this as an act of leadership, for instance, when the Chief Constable ("the Chief") uses their Twitter account to acknowledge good work: "It's about that leadership from the Chief, and actually putting that out there. And it's great to see my team recognised by the Chief for the work that they've done" (Chief Inspector K). Some officers questioned the use of Twitter among senior ranks, that he described as "gaffers", for self-promotion: "The one thing I cannot see the need for is gaffers with their own personal Twitter account … ego stroking if you like" (Traffic Police Constable M), particularly at a time of uncertainty among junior ranks. A senior officer was concerned about what certain types of messages from his senior colleagues do for morale: "When we've got senior leaders that are tweeting about a coffee meeting this morning and … desks will be full of art things … but I put myself in the perspective of the PC, on the frontline, that doesn't know where he's going to be working at Christmas" (Inspector S).

The next section discusses how corporate communications teams manage social media, and presents an analysis of social media use within the case study force.

Observing the Police Communications Teams

The corporate communications team in our case study police force had emerged from a traditional press team. Whereas the press function has been around preparing press releases and interacting with local newspapers and broadcasters, the growth of social media and decline of local press outlets have transformed how police forces organise their communications. Much external communication is now through Facebook, backed up by Twitter, Instagram and Snapchat. For several years the police have had a dedicated social media team; however, press officers and other members of the corporate communications team post to the social media team for particular campaigns or appeals.

The role of a social media manager has been variably defined; however, there are five main aspects of the role, each with an accompanying social media management tool. Such tools are essentially customer relationship management (CRM) tools for social media. Some CRMs are integrated within social media, others are free-standing—but either way they all share the same basic functions. Most of the tools used by police forces were developed for for-profit businesses (e.g. Hootsuite) but some use tools were developed specifically for policing (e.g. CrowdcontolHQ).

The five main roles of a social media manager in a police force are as follows:

- Publish/Post—Writing or coordinating content to be posted onto the corporate social media platforms. This might include identifying suitable images/GIFs/emojis/videos to support the content. They will also plan and schedule when the post will be published in order to reach the widest or most relevant audience.
- Engage—In simple terms this involves replying to questions or posts related to the police force. This might also be about forwarding the message to another colleague in the organisation or collating information for the reply.
- Monitor—Overseeing how certain posts are performing, the activity of colleagues on delegated accounts, local news or major incidents, trends related to policing or use of profanity or policy violations directed to or from officers.
- Analyse—Preparing updates for management and colleagues on the performance of social media accounts and campaigns. Reporting brand reputation/sentiment and headline figures around number of followers and the reach of posts.
- Manage—Management of delegated access to accounts, training for officers new to social media, revision of social media policies and Facebook profanity filters, ensuring colleagues are compliant with data protection policy.

The first two of these five roles are to a large extent externally visible through analysis of what is posted by the main corporate accounts. Here I used text analytic software to monitor the activity of the two main force accounts on Facebook and the corporate Twitter account over a two-month period. The two main Facebook accounts included 10,038 and 7573 posts and comments respectively, and the main Twitter account

tweeted or was mentioned 14,167 times. Although the API was running in the background, during this period I employed Netographic methods to write up fieldnotes and memos regarding activity, to capture discussions or events in screenshots and, using the same social media management tool as the case police force (*Hootsuite*), monitoring inbound requests or questions. Three particular areas of focus were how the force responded to attempts at reporting crime, how they dealt with hoaxes and if and how they intervened where a particular post was particularly controversial.

For the rest of this section I will report some of the findings of the online work and in the section that follows some insights from interviews with communication team members themselves (see Chap. 3 for more details).

Observed Publishing

Observation of both the force-wide Twitter and Facebook accounts reveals that a large proportion of the work of the social media team involves strategically timed online campaigns around particular issues or initiatives. A campaign about domestic violence or gun crime will post several times a day over one or two weeks, with images and standardised hashtags. This force did not pay to promote their campaigns, but this is becoming increasingly common in order to counteract Facebook's changes to its newsfeed algorithm (Tien 2018). Metadata of tweets reveal that Hootsuite is used to post tweets for the duration of a campaign, in contrast to replies that are posted from the Twitter app or website itself. Appeals for missing persons carry images and requests for help. Local Facebook pages will carry the same images; this suggests they are being centrally controlled. Local Twitter accounts may carry corporate images but more often post their own content. The number of engagements with posts (Likes, shares, retweets, comments) varies depending on content. News of a recent conviction may get several hundred likes and (often vitriolic) comments on Facebook. An appeal for a lost child might be shared hundreds and sometimes thousands of times. Pictures of police cars, police dogs and horses are particularly popular.

Observed Engagement

The first job of the day for a social media manager is to read through tweets and Facebook messages received overnight. This is the time when

people are most active. During the eight-week observation period 980 such messages were received on Twitter. In addition, an estimated 1600–2200 direct Facebook messages came in (based on interviewees suggesting on average 30–40 messages per day). Although Hootsuite was used as described for the Twitter messages, the Facebook pages and Instagram were analysed separately. Many of the messages observed on Facebook related to issues outside the police remit, so it was commonplace to refer them to their local authority. Where criminal activity was reported they were advised to phone the non-emergency number 101. Staff would avoid, where possible, the need to reply publicly and if alternative means were available they would use them. If staff deemed something of interest to criminal investigations or police intelligence they would make a screenshot and email it to the necessary department. The setting I observed revealed a set of tools and practices designed to make efficient the process of triaging and logging enquiries from the general public.

Observed Monitoring

The social media managers sit in an office with two televisions on at all times—one tuned to BBC News and the other to Sky News. Managers often have one of their two monitors displaying a range of streams—incoming direct messages, replies to the main account and activity in the force's 300 local and individual accounts. They do not have alerts to their brand—the name or variations of the police force—nor do they have a stream set up of people in the local area mentioning "police" or "cops" in their messages. Nor do they post much from other forces or related stories. Some frontline police officers retweet content from other forces, but rarely from the main force-wide account.

Observed Analysis

Although some local and individual accounts mention numbers of followers or retweets in their posts, this information does not appear on the main corporate accounts. In marketing materials these social media management vendors describe an appetite for real-time data, frequently referring to a need to show "return on investment". The police are not seeking to sell their services but there is an observable interest in feedback. In the corner of the shared office an array of communications awards were displayed, some related to social media campaigns. Metrics matter.

Observed Management

The most observable aspect of management is the social media management tool or tools used to send tweets. While the majority of tweets sent by the main force account are sent by a social media management tool, individual officers use a variety of mobile devices, accessing Twitter in their internet browsers.

The Communication Officer Interviews

Here we consider the five roles again, this time drawing on insights from interviewees.

On Publishing

Interviewees described how communications officers devise campaigns and feed the social media team with images and approved copy to be scheduled over the duration of the campaign. Which platforms are used depends on the issue and the target audience.

Interviewees expressed sometimes surprise at what gets a reaction:

> On (a local Facebook account), the other day, that was a wanted man who I put out and he was wanted for sexual offences and he's well known in (the town) so loads of people were sharing it, loads of people commenting. I think we got like 2,000 shares, which is crazy because there's only 7,000 likes on (that) page and we got like an extra 500 likes. (Coms L)

> We look for good stuff as well, so we were starting Instagram at the time and Snapchat, so we're looking for content for that, so a lot of the team [police officers] tweet really good pictures when they're out and about. So we'll grab those photos and put them on our Instagram. (Coms H)

The description of publishing practices largely fits with Hootsuite's marketing description around scheduling. Participants depicted the social media manager as the person that understands the Hootsuite. Staff described how contentious issues appearing on social media allowed them to pre-empt likely complaints or replies, so they would draft replies and get these "signed off by a manager". The account given by interviewees is in line with the intended function of Hootsuite—to enable systematic scheduling and oversight of posts. Yet there were cracks. For instance,

observed differences in the posts that received Facebook replies during the weekend were explained as depending on which manager was on duty.

On Engaging

Staff spoke of channelling a range of messages, from compliments, complaints, intelligence and information regarding a particular enquiry.

> You could get one thing saying, "The police are fantastic, you're doing a great job," which is always good! And then you'll get another one saying, "Absolutely ridiculous, I phoned you 20 minutes ago and you've still not turned up!" (Coms H).

Staff get frustrated when people send something that isn't a police issue; parking problems are a common complaint and staff have ways of referring people to their local council:

> Oh, my God! This is NOT a police issue. People don't know it's enforced by the council. So basically, we just say, "All the councils have got a page where you can report it." They're in like My Favourites now because I've mailed them so many times, just copy and paste it and send them there. (Coms L).

And they have processes for dealing with appeals:

> If someone's seen something on Facebook, sometimes people will send us (information) … and whoever is on call, will screenshot those messages and send them to Force Intelligence, and if it's regarding an appeal, it goes to the officer that's in charge of that case and we'll get back to them to say, "Thank you for passing on this information. It's been sent to the officers who are investigating the case." Generally, people are like, "Oh, thanks." (Coms L).

But they have ways of anonymising the intelligence received:

> People don't want to look like a grass … if they ask for it to be sent anonymously, then it will be sent to the officer anonymously. We'll just screenshot out their name and send the message, basically. (Coms L).

The process of deciding what is said in a reply is less simple. Staff seek permission from a manager when an issue is unusual, novel or

controversial. However, most requests are familiar and regular and no managerial sign off is required:

> Yeah, so like that one with the young boy that was concerned about his friend, I drafted a reply to him and then just checked that it was okay, and then once you've used it once, I've sent that to a couple of people. I tweaked it a little bit but the links and stuff remain the same. Generally now I don't think I get anything that comes in … that I'm like, "Ooh I haven't dealt with that before." Most stuff is like, "Oh I've had that before," or a really quite similar situation. (Coms L)

On Monitoring

The interviews revealed that corporate communications staff consider "monitoring" to relate to activity of and engagement with their own accounts, rather than wider trends or events. Monitoring is therefore more about surveillance (or "social listening") rather than horizon scanning. Staff reported a keen interest in comments on their posts, although they have neither time nor resources to read everything on every post:

> The reality is we're not monitoring everything all the time … how many thousands of tweets or social media interactions are going out every day from here. So the reality is, no, we're not monitoring all of that, and it's a big leap for us to go, "Okay, this monitored world is no longer realistic." I don't know how many people I'd have to have sitting in a room to monitor everything, and every response and everything like that, we pick and choose, we try and keep, you know, have the filters on, we do all of that, … we've got Hootsuite, we monitor it, there's a duty press officer on 24/7, they will spend some time in the evening just monitoring, just to see if everything is okay. (Coms Director D)

> Do we monitor everything? No, we don't. When you've got 300 comments, unless it's a particularly controversial subject where we read every comment, and sometimes I do read every comment, because I want to know what people are thinking, but we don't monitor everything. (Coms Director D)

Other respondents commented that other areas of the police force could be more involved in monitoring posts of relevance to either intelligence or the police contact centre:

> Is it going to be the person who looks after social media, is it their role really to be going through the messages and deciding what bits are intel, if stuff needs to be flagged up? I think in the future there's going to have to be more of a line as to where certain things fit. Contact centre needs to play a bigger part in social media, so the people that answer 999 and 101 calls, they could do a lot with the social media messages. (Coms H)

The kind of monitoring assumed by the SMM tools is external—of brand and related activities. But this is not a key role for the social media team in a police force. Their main "monitoring" activity is checking if any inappropriate comments have slipped through the profanity filter, although there are holes in this net, for instance, with regard to creative spelling:

> So there's quite a lot of things on there. It will automatically hide those posts. But like, I mean there is only so far you can go, there are different spellings, people can spell it out with a space in between, there are ways you can get around it. There is only so much that we can do and really I think, if people are writing offensive posts we obviously do monitor it if it is really quite concerning. We would flag it up or flag up their account—maybe their account needs to be looked at. (Coms L)

> If on a post we've got 100 comments, probably about 15 don't appear, so they'll fade out, but then there are others that slip through the net and we have to go in manually and delete … Probably an extra 10 on top. (Communications Officer H)

People reply sometimes when they realise their message has been hidden on Facebook:

> "You've deleted my post, why's my post not on there?" And we'll say, "We don't tolerate swearing," or, "We don't tolerate racist comments on our profile." And then you'll get, "I weren't being racist I was just stating a fact." And that's when we'll be, "Yeah well we don't think so, you've just said 'Send somebody home'." (Communications Officer H)

On Analysis

The importance of metrics was observable in the interviews. Interviewees were able to state numbers of followers, examples of posts and their reach. These are numbers that the SMM tools and platforms give them. This also

manifested as a grievance. One morning I was sitting in the office as the campaign tweets the previous evening hadn't attracted as many engagements as expected. The following quote comes from a staff member demonstrating the metrics related to their Facebook page:

> "Actions on your page". It's like your reach, how many people … your page has reached this week. So this week, it's reached 616,316 people … and our post engagement—so that's people who actually liked it, commented or shared it, like actually watched the video, whatever—is 135,192 people which is way higher than Twitter. (Communications Officer L)

The focus on metrics also manifests in competition with other forces as to how many followers they have.

> But if you think about it, we've got on our main Twitter account, we've got over … {redacted} thousand followers. Now that makes us the [redacted] most successful force.

Interviewer: Not that you're counting!

Respondent: I am counting, we must take over from {police force above them} at some point … we're probably reaching over 400–450,000 people, so we could reach 450,000 people in the next two minutes, if we sent out a message saying, "You must all tweet this message," it would go out, you know we're reaching half a million people on Facebook every week. (Coms D)

Within this hierarchical organisation, the social media manager is a relatively junior role. Some interviewees referred to the social media team as the "Social media girls". And yet their role is to enforce the social media policy, ensuring that officers from Police Community Support Officers to the Chief Constable abide by the rules and do not tweet something that will harm the reputation of the force. Interviewees spoke of how the local press were monitoring their officers closely and would quickly pick up on mistakes or bad practice.

> One of the officers, one of the neighbourhood teams, had tweeted about a cartoon, it wasn't theirs, and it could have been read in two different ways,

> one in a controversial way, and [local paper] called us and were like, "Err, can you give us a bit more information about the tweet that one of your neighbourhood teams has tweeted about?" And we were like, "Oh no, we haven't". (Coms H)

> Now we know that the media are spying on [officers'] accounts, and they follow all the officers. But then at the same time we had to say, if they're going to have a Twitter account, we have to give them some trust, you can't be sitting on Hootsuite everyday going "He's just tweeted this." (Coms L)

Two of the interviewees independently described their role as "policing the police".

> We get in touch with them and tell them off, we have Hootsuite so we can see all the accounts and what they are tweeting in one stream … Everything they tweet appears in this one stream. So we see everything that comes in and generally someone is monitoring it. Most of the time they are fine, they don't tweet anything bad, but there have been a few instances. (Coms L)

Issues of most concern to staff were officers tweeting copyrighted images, officers replying to Direct Messages from the press without contacting Corporate Communications and officers tweeting pictures of crime scenes or evidence.

Another key management role for the team was processing requests for new accounts and closing accounts that become dormant:

> We've done a red, amber, green system. I think if they haven't tweeted for about a month, we would call them and ask why. For some of them it's because they've moved roles. (Coms H)

Several interviewees expressed concern that there are already too many accounts and many of these are tweeting infrequently. This perspective comes from people who are monitoring all of the accounts. They get frustrated by the banality of the content posted. The officers have different motivations and are communicating with sometimes local audiences that may well not follow any other local neighbourhood accounts or, for that matter, force-wide accounts. The social media team are reluctant to authorise requests from police officers requesting new accounts:

> "They're like … We want our own Twitter." "You'll have zero followers. Come on … Why don't you just send us your content? We've already got the followers right here." (Coms L)

The police officers interviewed expressed how many of their colleagues were reluctant to start tweeting; some were nervous of breaking the rules, of revealing too much about their personal life and whereabouts, others of using their personal phone and the implications of it being seized as evidence in an investigation. Interviewees from Corporate Communications saw their role as also assuring officers that they need not be timid:

> I think they're a bit scared sometimes. I think some of them are still in that era where they think, "I can't tweet that," or "I have to be really careful what I tweet." Because we still get phone calls now like, "Are we okay to tweet that, we're just doing this event?" And we're like, "Yeah go ahead, carry on" and they say, "Can we say this?" And we're like, "Yeah that's fine." (Coms H)

Despite this it is clear that the role of the social media team is ultimately one of control. One manager joked that their role is essentially Stalinist:

> Our view has always been, "as many people *do* see social media as often as possible in an engaging way, so we've not got some Stalinist approach from the centre, although we *have* got a Stalinist approach from the centre, we can stop them all in one swoop … We've got all their passwords … So if there was a major riot or something, we would instruct them not to tweet out inappropriately, and we would take control of all of that, which is fine. But having said that, we would encourage as much interaction as possible from as many sources as possible." (Coms Director)

This role of communications officers being able to take control of police officer's accounts, to delete their accounts, to deny access to social media, to post on their behalf and moderate material are characteristic a command -and -control organisation like the police. They are also common features offered by social media management tools.

Conclusion

Much of the literature focuses on the use of social media in extraordinary times—mass civil disobedience, natural disasters, high-profile killings or missing persons. Such events test traditional communication models and

showcase the added value or wider disruption from the deployment of social media. Others choose to focus on what social media does in contributing to community relations—positively or negatively. As an alternative what I have tried to convey here is something of the everyday, the role for social media in frontline public service—in this case policing. The interviewees reveal something of the evolution from its use as a dispatch mechanism—(*spillage reported at junction 14, two lanes closed, etc.*) to being part of the repertoire of corporate communications. What is particularity intriguing, and perhaps unique to the blue light services, is how in this case police officers continue to play out traditional public service roles on their smartphones. The exemplars here are the traffic cops quoted above who not only demonstrated 250 public replies during the period of observation, but showed a complete disregard for any attempts by corporate communications to make them adhere to a structured social media policy. Instead they were following their own code, set down in policing. They had little concern for how a post would be interpreted by the press or reputation to the force. Yet they are in the minority. Senior members of the force use their account more as a public recognition tool as part of their leadership of temporally and spatially fragmented teams. When officers step out of line, when their following grows too big and they stray too far for comfort, their account is withdrawn or conditions imposed. But more likely it goes unacknowledged or tolerated.

There are parallels with the shift in education from face-to-face teaching towards blended learning, personalised delivery of curated content on a virtual learning environment. Where previously a teacher or lecturer had freedom to turn over a session to an unplanned session on that day's news event, blended learning is the automation of content delivery. Although it might have higher production values, with attractive interactive graphics and broadcast quality video, it can lack the spontaneity. Little surprise, then, if we find the displaced lecturer taking to social media to continue to engage in the conversation they once had in a 100-seat lecture theatre. Social media offers freedom. It is identity preserving, if nothing else.

What this case has also shown is the stark difference between frontline officers and communication officers. If there is one thing to take away from this it is that there is a marked distinction between the use of an experienced traffic cop and a junior communications graduate. Paradoxically one is policing the other. But there is a matter of authenticity. A corporate campaign might be safe; it might be popular but is synthetic; it has all the authenticity of the whimsical text on a bottle of

smoothie. For the latter they structure their work around planned campaigns—when issues arise that threaten reputation they draw on a set of resources to close it down. They are not particularly tolerant of those who see their content as a convenient method for communication.—just as forces publicise time wasting calls—nor do they have much respect for those officers that doggedly seek to hold onto their accounts and what seem like small followerships. They were not using the full extent of social media management—but the platforms and tools gamify—and encourage them to focus.

It begs the question: why do organisations use social media or for that matter allow officers to use it—there are some grounds on education role which could be preventative; it is a low-cost means of reaching and communicating, and it does offer some convenience as a channel—but moreover it is about trying to deal with the problem of connection. It is a corrective to the reforms of stripping staff from the frontline and replacing them with self-service and back-office monitoring. And for AI there is a tremendous opportunity offered by such communications in the form of "training data". Such data will continue to advance the development of conversational AI, one that can, in turn, support the management of social media as a means of communication in our public services. It is to this effort the next chapter will turn.

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CHAPTER 8

Robots and Virtual Agents in Frontline Public Service

Service robots are defined as "system-based autonomous and adaptable interfaces that interact, communicate and deliver service to an organization's customers" (Wirtz et al. 2018: 909). They can take both physical and virtual forms, which can be either more human-like or more machine-like in appearance. The rapid emergence of service robots in frontline work is attracting attention across marketing, hospitality and beyond (Garry and Harwood 2019; Sangle-Ferriere and Voyer 2019). In public service the more established use is in social care (Pekkarinen et al. 2020). Such attention holds up a mirror to what constitutes the value of human interaction, human touch (Solnet et al. 2019).

The idea of introducing robots into the workplace to provide service or assist those providing frontline service evokes a range of emptions and anxieties of the existing workforce (Stock et al. 2019). Similarly, the frequent portrayal of robots in Hollywood movies helps fuel controversy when robots are adopted, for instance, in the Henn-na Hotel in Japan, the world's first hotel staffed by robots (Yu 2020). Perhaps the most widely debated hypothesis is Masahiro Mori's observations that familiarity with robots increases with human likeness until a point where the human becomes sensitive to the imperfection of near human-like forms—with discomfort exacerbated by movement (Mori 1970; Mori et al. 2012). This "uncanny valley" theory proposes that "as a robot is made more human-like in its appearance and movements, the emotional response from a human being to the robot becomes increasingly positive and empathic,

S. Jeffares, *The Virtual Public Servant*,
https://doi.org/10.1007/978-3-030-54084-5_8

until a point is reached beyond which the response quickly becomes that of intense repulsion" (Bartneck et al. 2009: 74). This phenomenon has been researched extensively; influential studies involve users being played video clips of increasingly human like robots (MacDorman 2006). This has since led to a variety of frameworks for understanding the human acceptance of such service robots, such as Bartneck et al.'s (2009) five "godspeed dimensions": anthropomorphism, animacy, likeability, perceived intelligence and perceived safety. Service robots may be perceived as being human-like or machine-like, dead or lifelike, likable or disliked, highly intelligent, as fear inducing and so on.

As technology has matured, work in this area has also focused on developing typologies of service robots. Wirtz et al. (2018) adapt a framework from Lovelock (1983) that plots different types of robots, in a 2 × 2 table, ranging from whether the task is tangible or intangible on the Y axis, and whether the task is directed towards a person or an object on the X axis. By way of introduction Table 8.1 adapts Wirtz's typology and plots in a number of technologies that feature in this chapter. Whereas Wirtz focused on robots that served objects (like a porter robot that carries objects from one part of a building to another), here the focus is on robots designed to serve citizens directly or to assist frontline public servants to undertake their work.

Within cell 1 are three humanoid robots (Pepper, Nao, and Dinsow), all being used in a range of social care, medical and education settings; and

Table 8.1 Typology of public service robots and virtual agents

Tangible action	1. Humanoid Robot **Pepper, Nao, Dinsow** **K5** Non-humanoid robot	2. Humanoid Robot **Robear** **Lie detector** Non-humanoid robot (e.g. a car repair robot)
Intangible action	3. Holograph Video Voice based (e.g. **Alexa Voice Assistant)** Text based Person	4. Software integrated bot **Face recognition** **User record analytics** Agent

Source: Adapted from (Wirtz et al. 2018)

K5, a Dalek-like surveillance robot used in security and policing. In cell 2 are physical robots that serve the agent rather than customer and also contains a bear-like robot for lifting patients in and out of bed and chairs, and a lie detector machine, used to verify traveller stories by border guards. In Wirtz's typology, cell 3 plots a spectrum of media types from hologram, to video, to audio to text. We have covered several of these types, such as basic chatbots, in Chaps. 5 and 6, but in this chapter we explore the deployment of voice assistants, which are both tangible and intangible: although their intelligence is based in the cloud, they are located in an ever-increasing range of physical devices: smartphones (e.g. Siri) and smart speakers (e.g. Alexa), headphones, TVs, car dashboards, spectacles and jewellery. Later in the chapter we will explore how voice assistants are playing a role in social care robots. In cell 4 are a number of technologies that assist human agents in their work: face recognition, robotic process automation that deploys bots to carry out repetitive processes on computers, and user record analytics, which identifies important features in a patient or offender's past medical or criminal record.

There is a great deal of anxiety around the idea of robots replacing humans, a fear that the media help propagate with their attention-grabbing headlines. Recalling the case of "Amelia" in Chap. 1, despite the word "robot" not being mentioned in the press release, it was the word of choice in the headlines of the major newspapers (e.g. Meet Amelia, your new robot worker). Wirtz et al. (2018) suggest that at present capacity, robots affect only one type of frontline service agent. They distinguish between "professional" service roles and "subordinate" service roles. The former perform complex cognitive tasks requiring creative and emotional intelligence and "a high degree of flexibility, out-of-the-box thinking, and creative problem solutions … a divorce lawyer, a PhD supervisor or a surgeon" (2018: 911). The situation is very different for the great many customer service agents in so-called subordinate service roles (SSRs):

> Employees are often lowly paid, have low education, receive little training, have little decision discretion and empowerment, have low engagement and are often not motivated … Employees in such positions tend to engage merely in surface acting (if they "act" at all). In such positions, *robots may well provide better service compared to employees, and in fact, may even be better* at displaying surface-acted emotions. That is, robots may outperform people in routine service encounters (e.g. a ticketing clerk or bank teller) due to their consistently pleasant surface acting that is unaffected by moods,

> health, or stereotypical biases. Thus, for low level, low-pay SSRs, robots may become the preferred method of frontline service delivery. (Wirtz et al. 2018: 911, my emphasis)

Whereas Wirtz advocates robots over humans, where roles are relatively simple and repetitive, Daugherty and Wilson (2018) set out an optimistic future of how humans and machines can work together in a symbiotic relationship, with humans training and supervising machines, and machines augmenting or amplifying human ability. Their book addresses what they call the missing middle—that as machines get more advanced and move into roles previously filled by humans—there will remain roles that humans do best—but there is a third space where humans can greatly enhance machines and machines can greatly enhance humans.

Humans, they say, can enhance machines by *training, explaining* and *sustaining*. First, *Training* includes helping machines to learn from tacit knowledge, to display empathy and to develop something like a personality. However, it is debatable whether current technologies are capable of this. For example, while Alexa can be trained to offer words of comfort when certain intentions are predicted, it might be objected that such faux-compassion lacks meaning and value. Second, *Explaining* involves monitoring how machine agents make decisions. This is an overview and scrutiny role, designed to uphold algorithmic transparency. Where previously authors were concerned about bias from a single programmer, unsupervised machine learning introduces new concerns, as the machine teaches itself how to complete a task. An exemplar of this is DeepMind's AlphaGo that beat the world's best Go players (see Lee 2018). The third is *Sustaining*, essentially providing routine maintenance and system security.

In addition Daugherty and Wilson also suggest three ways in which machines can help humans: Machines can (1) amplify human capabilities, (2) offer a means to interact with customers and (3) play a role that embodies the agent in particular situations. The remainder of this chapter will explore each, with particular reference to examples of robots and virtual agents to explore in what ways they are assisting public servants in frontline work. Starting with the amplification of capabilities we explore the role of face recognition technology, lie detection, assessment and feedback, and user record analytics. In the role of enhancing interaction we focus on a role for humanoid robots, care and therapeutic robots and voice assistants. Finally, in the role of public servant embodiment two types of robot are discussed: power-intensive task robots and patrol robots.

Amplifying Public Servant Capabilities

Here we have a set of tools that are not service robots as such, but they work to amplify the work of agents in their frontline role. There are already examples of these tools being used in the public service, but through the fieldwork I sought to understand how frontline public servants reacted to them—and whether they thought they could be useful, whether they posed a threat or if they were excited about working with such tools.

Face Recognition

We start with face recognition. The image I showed was from the marketing materials of NEC's NeoFace tool (NEC 2016). The illustration shows how a control centre could pick out a person's face profile stored on a database. The use case was one of security. At the time of the interviews there was an ongoing court case about whether a Welsh police force were unlawful in deploying NEC's tool to monitor known trouble makers at football matches. Although it was later decided they were, this kind of face recognition is not without controversy. Campaign groups like Big Brother Watch keep a close eye on how technology firms are working with developers and landlords to deploy this technology—examples of Meadowhall shopping Centre in Sheffield and new development in Kings Cross in London.

Face recognition technology is used for various purposes, including the identification of known individuals in a crowd, matching a face to a database and identifying unknown individuals in a controlled environment. It can provide business intelligence for queue management, or monitor journey times through a facility (e.g. a hospital) to prevent bottlenecks. It could be used in place of a swipe card or finger print to control access to a building or service. In parts of China there is a firm government position that this technology should be rolled out into public spaces. Consumers can order and pay for fast food with their face. The use of facial recognition systems from the likes of Gravibit (2019) in shops will allow retailers to identify returning customers, establish age and mood and ultimately connect back to their online browsing. It is this connecting up that is what Van Belleghem calls "connected strategy" (2017). In the developed world we are more wary and somewhat squeamish about widespread deployment of face recognition technologies. And yet in many public service roles where the function is to keep in a building secure or maintain law

and order in a given population, it was clear from the interviews that people are somewhat conflicted.

We discussed with school staff the idea of taking registers using facial recognition. It was trialled in Sweden but the school were later fined by the EU for breaching data protection laws (BBC 2019).

> It'd be easy for registering. Sometimes one kid has gone somewhere … There wouldn't actually be any register … it would just be your face. It's space-age kind of stuff isn't it? I don't know. I think you would have to ask permission wouldn't you? It's the way things are going, isn't it? So in the next 10 years that could be the way we do the register but I feel it's a bit Big-Brother-ish where everybody knows where you are and what you are doing at all times. (Shona, School Pastoral Officer)

> You can have it at the door … The other day we had an unexpected fire alarm, … Normally, I would take a register up to the teacher and it says, "You're supposed to have 29 kids in, here's who's missing." We didn't have that. (Emma, TA)

Others suggested it could have a role in security, to identify people who are banned or barred from a facility:

> I think that's a pretty good idea … Obviously, some people are look similar you might get stuffed up if you've got twins or what not, but yes I could understand that. (Sally, Customer services)

One police officer responsible for policing the local football stadium discussed how he deployed "spotters", police officers known for their photographic memory who were able to spot known troublemakers in a large crowd. Raising this with interviewees promoted a debate as to whether this technology would be as good or better than such officers:

> Well, this is much better way, because relying on your memory, I think would be very difficult, wouldn't it? Yes Fantastic idea. (Sarah, Environmental Health Inspector)

Others were less comfortable with it.

> I don't understand. How does it recognize it? … That's a bit weird, that' crazy. It just makes me think what's next? Like if you ever had a criminal

record that tracks what you are doing. I am not comfortable with that. I am not too happy with that. (Hannah, Social Worker)

Yes. Very sort of a state surveillance, very scared, very 1984. (Adam, Hospital Consultant)

I prefer to look at the faces in my classroom to be quite honest. (Jill, Teacher)

Lie Detection

In various frontline roles there is a need to verify if somebody is being truthful. In some countries there is a long tradition of use of polygraph lie detection machines whereas in others they are never or rarely used. The way in which passport control is staffed in airports has transformed dramatically in recent years. E-gates are now becoming the default channel with travellers returning home to their home country or travelling within the EU being channelled to use a self-service machine. The machine scans the passport and takes an image of the user. If the image and passport pictures match the gate lets the traveller through and there is no need to interact with a border guard. Otherwise, this can result in a long wait in snaking queue gates to speak to a uniformed border guard who are at liberty to ask a long string of questions about "Reason for travel", "what is the conference?" "where are you staying?" The purpose of this questioning to establish whether the story hangs together, whether it corroborates with information given ahead of travel. Until recently it was thought this face-to-face interaction with a guard was the only way of verifying a passenger's story.

Tools like AVATAR by BORDERS are one of a series of lie detection machines being deployed at borders around the world. Passengers stand in front of the terminal and are asked a series of questions about their journey or their situation. The technology has been trained to spot irregular facial movements that might suggest the person is not telling the truth. This will then lead to a further investigation by a human border guard.

When we showed an image of the AVATAR to frontline public servants they recognised the challenge that border guards face but most were pretty sceptical about its ability to do this complex work.

Oooh! You putting a lot of trust in a machine to rely on. Why don't they start using that in a police interview to decide whether some guilty or not is

> that enough? Without evidence of whatever, can people hide it? If someone's got a good blank face, I'd be sceptical as to whether it was enough. (Sally, Customer Services)
>
> Yes. It is the future we've read about … I'm not sure about that to be honest. (Keith, Customer Services)
>
> You might fail them if you are nervous. (Hannah, Social Worker)
>
> Yes. It's pseudo-scientific that, isn't it? (Adam, Doctor)

Some did make connections with their own role—like Sally, an environmental health inspector, who spoke of restaurant owners attempting to influence her decision about the cleanliness of their kitchens:

> You do get body language and things that you can—We're very much evidence-based. I might think, "Well, I think he's lying," but I've got to have evidence-
>
> … With being in the job 21 years, you do get a feeling of whether somebody's trying to pull the wool over your eyes, but we've got to be evidence based on what we do. (Sarah, Environmental Health)

Only one interviewee was outwardly supportive of the technology and spoke of how a version of it could be used in her school to help settle daily disputes between children:

> When you've got one child telling you one thing and another child telling you another thing, it's really difficult sometimes to—you feel like you're never really going to get to the bottom of anything because they're both completely adamant that what they're saying is correct … I would definitely use that! (Shona, School Pastoral Assistant)

Assessment and Feedback Tool

One of the most labour-intensive parts of a teacher or lecturer's role is marking and assessment. For teachers this is often the work they find difficult to achieve during their official working hours. It is the work they bring home for evenings and weekends. It is widely recognised that the expectations around the quality of feedback have also increased. All this has prompted an industry around tools that can automate the process of assessment and feedback of what are unstructured data. As learners move

to working from paper to online learning environments, quizzes and multiple-choice tests and examinations are ripe for automation. For decades paper-based multiple choice tests have been scanned into systems. The challenge lies in assessing unstructured assignments. For school-age learning it could be about how to practically read through 30 near-identical handwritten tasks in 30 paper exercise books. At university level the task is how to offer constructive and personalised feedback on 3000+ word assignments. Various solutions have emerged. During the time of interviews with school staff adverts for system for teachers were circulating which used a label printer; the system would collate the feedback and print it out on a sticker that is placed in the book. In the case of higher education, there are various applications available in mainstream Virtual Learning Environments (VLEs). The most commonly used are quick-mark-type tools—where common errors can be flagged in the text and links to advice on how to avoid it. While this helps to signpost, there is a danger that a wealth of information ends in a poverty of understanding. It overloads the learner with advice and suggestion, when what they seek is personalised feedback. Some teachers are moving to offering video or voice feedback. But the challenge comes—how to do this at scale? Whilst it is realistic to offer video feedback to a cohort, it becomes problematic when the lecturer has over 100 students.

During the interviews we discussed an example of a tool from Criterion—which essentially flags up issues with assignments. We used the image to move to a conversation about how machine learning could be deployed to automate the process of offering targeted and tailored feedback to students.

> I've got teacher friends and I think they'd love it [laughs] because they do always moan about marking. (Sarah, Environmental Health)

Most of the interviewees made associations with the spelling and grammar checker they use in a word processor software, suggesting that it is helpful but also imperfect.

> It needs a human, doesn't it? How do you know your children if you're relying on a computerized system to tell you? You have get the context. Sometimes, when you're marking the work and you think, "I've taught something and I know why they're putting that." It's a misconception to what I've taught, so I can then address that. Whereas, this I imagine it'd be

> a bit like a spell check, isn't it? … The flaws with is that they don't always pick up got he in a word or whatever. I think it'd take so much away from us to know the pupil and what they're doing in their areas. If this is doing it, then I imagine you're only getting bare bones of some of the things that they're doing. (Jill, Teacher)

User Record Analytics

With ever-growing digital records on patients and service users, the challenge becomes one of how to mine that data to make predictions or decisions. One of the most established in this area is IBM's AI "Watson". In one paper comparing Watson with clinicians (Devarakonda et al. 2017) where researchers asked doctors to identify and rate by severity medical problems in a number of patient records, some of these records went back several years. Researchers then compared these to the performance of Watson. Whilst both Watson and the clinicians made mistakes, the doctors acknowledge that Watson spotted things that they had missed, the thoroughness and how the tool helped support their clinical reasoning:

> It was able to search significantly more thoroughly the past medical records than I was. I only look at the most recent, but Watson was able to pick up on a very remote DVT [Deep Vein Thrombosis]… and very remote premalignant polyp
>
> …
>
> With a multitude of records to inspect, I look at higher-yield documents like discharge summaries, outpatient notes, procedures, etc. Watson can look at every line of text and pick up on things the physician who discharges the patient may not have even known about. I quickly saw how sick the patient was, and ignored many of the insignificant facts in the chart. (Doctor 4472, cited in Devarakonda et al. 2017)

For this project interviewees were shown an image of Babylon Health's "GP at hand". In the main they focused on the idea of meeting a GP over a ten-minute video call rather than face-to-face. The convenience of this was universally popular among the interviewees, who themselves spoke of the difficulty of getting an appointment with their own doctor. Another reason for this universal interest in something like GP at Hand is it is one of the few areas where they still use a face-to-face service. Many interviewees spoke of how unlike the continued use of face to face services with their benefit claimants, or social care users, they themselves did most

things online using self-service apps and websites. But when it comes to medical care, they, like their own service users, face the need to wait, to jostle for appointments, to wait on phone lines, to sit in crowded waiting rooms. And they don't always have the same doctor:

> I see different people all the time when I go. I mean, I don't go very often, but, if I go and I don't specifically ask to see anybody, so I don't really mind who I see and I'm more interested in actually getting sorted out whatever is wrong with me. I think that's for me. (Michelle, Customer Services)

Others asked further questions about how much the doctor knew about the patient. One of the claims of the GP at Hand system is that not only does the GP have access to the records, they also have use of an algorithmic dashboard that suggests useful or important questions to ask based on the issue being presented and past history. The claim here is that it more than makes up for issues of continuality of care.

One doctor said:

> I am less concerned about that because it is still face to face. … you can see them and you pick up on the cues. I think it will have to have a role, although there are legal questions. Often the criticism that's levelled is that doctors fail to examine the patient or pick up a physical sign … there are certain times where you'd be expected to, for instance, put a hand on the tummy and obviously that's not possible over the phone. (Adam, Doctor)

But the idea of the patient's notes being organised with suggested questions in a dashboard was positive with medical respondents.

> I quite like the idea of relevant information just popping to the top because it's lots of information and what I hate about paper notes is that some people have got many files, many files! and handwritten and everything. It's [laboriously] *flicking through! and flicking back!* …Already with electronic notes, you can sort by clinicians, sort by profession or sort by test results. (Catherine, Clinical Psychologist)

In the following quote this hospital doctor acknowledges that remote monitoring and virtual visits would make his clinics run more efficiently but remains concerned that his patients wouldn't consider it a "proper service" or reflective of the severity of their condition.

> I think that would be really useful for certain similar clinic appointments where it's monthly routine follow-up, we don't necessarily need to be in the same room. The question is looking at from the patient's point of view: if you're on chemotherapy, **would you feel like you're not getting a proper service if you're filling in an online questionnaire and getting some platitudes from the doctor via FaceTime?** and then being told to crack on? Doing it electronically, although it would potentially make the service a lot more efficient and allow patients to access doctors much more easily when they genuinely need them, I think it might be a bit difficult for the patient to accept it being done electronically. (Tim, Doctor, emphasis added)

These quotes help illustrate that with the arrival of electronic notes in many health care systems there is now greater ability to navigate long and complex personal records—but in practice this remains an undertaking. There is potential here for machine learning to bring to surface particular aspects of people's role that helps to mitigate both virtual visits and discontinuity of care. When combined with insights of all notes and integrated with published medical research what excites the likes of IBM's Watson is that the insights could far exceed the most expert physician on their very best day. Critics worry that doctors may place undue trust in the system, and mistakes will be made.

Enhancing Agent-Citizen Interaction

If the previous section was about how technologies can enhance or augment the work of public servants this next group offer new ways to interact with citizens. What the examples in this section share is they are physical robots rather than robotic systems or machine learning algorithms.

Humanoid Robot

To illustrate how life-sized robots are being deployed in frontline work I presented an image from the *Sunday Times* article about the use of robots to care for older people in Japan (Cavendish 2018). The image depicted a robot called Pepper leading an exercise class in a Japanese nursing home. Developed initially in 2014 by the Japanese company SoftBank Robotics, it resembles a child—with large friendly eyes and smiling face. Users can interact either by voice or using a tablet screen mounted on its chest. This robot costs around US$15,000 and has been bought by a range of public

organisations around the world. Southend council in the South East of England bought one for use in adult social care. The robot has since been rolled out to present at professional conferences and has its own Twitter account and staff ID card. At the time of its announcement its Twitter biography read:

> Head of SouthendBC Robotics in Dept for People (ironic I know), helping to transform social care & be generally awesome. First robot employed by a UK Council (Pepper Southend 2019).

The feed was filled with photographs of Pepper appearing on the podium at various professional conferences and many depicting smiling delegates taking pictures of the robot on smartphones together with retweeted content starting tweets with the choice of words so often used with robots: "Meet Pepper", "have you met Southend's newest employee?" and so on. Amid the various mentions of conference appearances and award shortlists, there is also a link about how Pepper is a being used as a dementia-friendly robot, for use in "reminisce sessions" in local Southend care homes.

Because Pepper can sometimes struggle to understand what older people are saying the council officers sometimes switch into "Wizard of Oz mode for Pepper, which allows us to type replies during the session because we can understand what they are trying to say" (Alzheimer's Society 2019). This use of WoZ, as it is known, is commonplace in robot-assisted therapy and a recent workshop highlighted that this remote control of therapeutic robots, sometimes described as socially assistive robots, some argue, is not a sustainable technique in the long term and urged further work to "lighten the therapist's burden" (Esteban et al. 2018: 1) Other deployments of these social or therapeutic robots include children's hospitals that have deployed a Pepper robot to work in reception, meeting and greeting children who may be anxious about their impending treatment.

I have witnessed first-hand how public servants warm to Pepper on first meeting. It has many tricks to disarm people—but my picture of Pepper that I showed interviewees, depicting the robot leading an exercise class in a care home, divided opinion. Kath said that if Pepper was in her library her regular users would be curious:

> They'd get their walking stick and they'd be poking it, "What's going on here?" …Some of them would probably love it. They'd think it's great, "It does this." …They really enjoy new technology, You can't paint them all in

> the same brush. They'd probably talk to it like it was stupid, and really slowly, [speaking slowly] "Could you get me a Katie Flynn?" and, "THANK YOU!" (Kath Librarian)

But Kath added she had the experience of library users taking ill and had doubts Pepper would recognise this or take action. Another librarian echoed this sentiment: "I would give it a go, but I wouldn't like to see it as a permanent feature in my role" (Davina, Librarian). Social worker Hannah found it "creepy" but thought kids would like it. This teaching assistant and leisure assistant also had mixed feelings:

> That's cool. I like that one. but you'd need a member of staff in there in case anything went wrong or if someone pushed him over, …I think it would be novel at first … it's like kids at the back messing around going like, "No, no, I'm not into Pepper today." (Emma, Teaching Assistant)

> I'd still prefer a proper instructor taking a class…customers like people to talk to especially at this age …They like people to come and talk to and a moan to. Kids will probably like him but adults wouldn't. (Danielle, Leisure Assistant)

For this customer service agent, who works both face to face in a customer service centre and in a contact centre, she drew parallels with Pepper:

> It's much harder on a phone to assess emotions, you can't see someone's reactions and so on. I feel like in this situation because the robot can't pick up when there's something wrong with a person. (Sally, Customer services)

Clinical psychologist Catherine was more concerned that the decision to adopt Pepper in hospitals was based on cost and didn't fully acknowledge the difference a play therapist or a support worker can make:

> In A&E when you go in the middle of the night and people bring people a drink and stuff. You can tell it makes a massive difference. I can see how Pepper is having a similar effect, and yes it's cheaper than employing somebody and they don't have to have a break etc … I can see why hospitals would choose one. But I think it is also about being able to connect to people. I suppose it's just a bit sad to me that they're not actual humans. (Catherine, Clinical Psychologist)

Hospital consultant Adam agreed, "It's nice to have human contact, isn't it though?", and Teacher Jill acknowledged the potential to distract anxious patients but cannot ever be a replacement for doctors or nurses.

What was apparent from the interviews was that public servants did not seem to know much about how such robots have the potential to learn and interact with humans. Some spoke of them being programmed and the constraints of one-size-fits-all and could not adapt to individual needs or voices. Helen, school administrator, exemplifies this point:

> A computer is okay when it's just got one thing to do, but when you deviate from that … a robot can't do that. I find that robot sad. Maybe if it was programmed for each individual … I just think that's really sad. I would rather a human physiotherapist helping me: "*My bone cracked then, was that right? Oh, no don't do that do we'll do something else.*" (Helen, School Admin)

Others were more excited by the potential of such a robot: "I think that's just fabulous. It really is. It's great … it's something that you shouldn't close your mind to. We could see lots of Peppers walking around the centre! (Michelle, Customer Services).

Small Humanoid Robot

In another image I showed Pepper's smaller cousin—Nao. A smaller robot stood in the centre of a table leading a Spanish class (see Softbank Robotics 2019). The point of difference here is the robot is being used in an educational context rather than for social care. A key element is what appears to be the teacher just on the edge of the frame who seems to be facing elsewhere.

This is a teaching assistant role; how did the teaching assistant Emma respond?

> Love that, kids would love it, it's novel and it's interesting in theory, making the lesson interesting and I think it's brilliant.

But then it also led to Emma reflecting on her role in supporting 10- and 11-year-old children who are anxious about exams.

> We are getting so close to SATs, some children in year six, they'll just start crying or you'll just see … something is upsetting them and 9 times out of

> 10, you can kind of spot that and stop it before it gets too big, take them outside for a walk. With that robot there'd be none of that … I think that's because we know the kids really well and just looking at them and talking to them you can tell. we're saying all the right things but something is not quite right. I don't know how to explain that, but you know. (Emma, Teaching Assistant)

This quote epitomises why I used the images in this study. This quote sums up the challenge but the contradiction that people on the frontline can both like and support the idea of a robot but also difficulty in putting into words what it is that frontline public servants like teaching assistants do that robots cannot.

Carebot

The third robot I showed was a screengrab from a promotional video about a Japanese care robot called Dinsow. In the video Dinsow is shown helping a resident of a care home who has been rather quiet recently. The video shows how Dinsow can interact with residents, play music and help people interact with their family or medical team. In the screenshot I showed Dinsow, a small robot on wheels, is placed at an older woman's bedside. Dinsow does not have a face like Pepper but rather a screen that can display a large pair of eyes or switch to video mode. During the piloting phase colleagues and students had suggested this was the saddest picture of them all. To my surprise this was more popular than Pepper or Nao. It seems although the robot is more basic, the premise of a companion robot struck a chord.

> That's lovely. That's nice. I like that you can feel quite isolated early in the morning, if nobody's visiting. Or you're away from family and friends. I like that. (Shona, Pastoral Support)

> If it was there to sit, and talk to the person because that person didn't have any friends or family that ever visited, then I wouldn't agree, but for the purpose of music and entertainment and some Skyping … because obviously, you can't have a nurse in there 24/7. (Sally)

> Wow. It's really good … Nowadays, particularly when we get older, we'll probably be all favour that way. (Sarah)

> It's an interesting idea. A human can't be there to give that level of care. If it's something that can pass some time when you're in a room, … If we can provide some comfort, well, I guess that's a good thing. (Keith)
>
> I guess if you're lonely. (Hannah, Social Worker)

But not everybody liked it:

> Looks very flimsy, is also on a stool as well. If It fell off the stool. (Adam)
>
> Suppose if it's somebody who didn't have visitors at all, it could be good. Is it supposed to be a replacement for a doctor? … Not in my eyes. (Jill)

Most critical was Tim, a junior doctor:

> It just looks awful to me. This poor woman saying, "Is this what I've been reduced to? A computer in a baby's body is all I can communicate with?" … Presumably, that thing can alert people when they need things. But turning it into a human figure is a little bit destructive. It is sort of saying we are replacing the human. This technology should be used to enhance what humans can do, rather than this suggestion that this is replacing of humans. (Tim, Jnr Doctor)

Whereas Pepper was a robot that would be used across a whole council district or large hospital facility, the image depicted Dinsow as a personal carebot. There are a number of these on the market and in development. Examples in Sweden show how the bot can counter loneliness by encouraging people to talk about their past. There is also scope for adaptation of telepresence robots. Although primarily aimed at remote working in business, there is also a deployment of such robots for children who are unable to attend school due to illness or for other reasons they can't be present in the classroom.

Voice Assistant

Where there is the greatest traction in this area is the use of smart speakers. These are now around £30 and with an internet connection offer a means of interacting with a personal voice assistant. Some councils have experimented by purchasing smart speakers. At one technology conference I attended the consultants were pitching a *use case* for smart speakers to foster independence and allow people to stay in their own home and avoid

expensive social care (in the demo they roleplayed a 90-year-old using an Alexa to order a repeat prescription and, somewhat less plausibly, book a lane at the local bowling alley). And an opportunity to scale back care visits. It could allow people to access digital services, online shopping and offer company and entertainment. This is achieved by developing bespoke "skills", which then allow users to interact with a given service by voice.

Interviewees were aware of smart speakers—Emma didn't have one because her husband thought they spy on people. Shona knew lots of people with them but didn't want one herself. Sally had one but was sceptical that it could possess the skills to understand the refuse collection timetable, Sarah's friend has one and uses it for reminders but she is not sure how it could be used in local government. Nick has one for timing his food and listening to the radio. Michelle was one of the only interviewees that didn't have any experience of a smart speaker: "I suppose it's one of those things that's like once you've got it and you get used to how it works and stuff it's—At the moment your life's alright without it but if you had it you might be like … absolutely" (Michelle).

> It might be that it gives them the wrong information, or sends them—they might use the word suicide in speaking to it and it comes up with a lot of sites that show them how they can they can do it rather than how they can not do it. (Shona)

Catherine had seen her clients demo their smart speakers to her during home visits but was yet to be convinced they were as good as hoped. But she was hopeful that they could be of use to people with learning disabilities.

> We're probably just not there yet with it be accurate at this stage, but in the future if it was, yes, being able to say, "What's the opening times of my GP surgery or something?" Again, there's something about when you go to someone's house and you're like, "Oh, they're not coping." There's stuff everywhere or whatever, and that machine wouldn't see that. The normal times when you go and you think, "There's KFC chicken bone down the back of the chair and ingrown toe nails or whatever." (Catherine)

Digital Director Eileen spoke of how they were of potential use for older people:

> People who struggle with the website actually can talk to Alexa. Increasingly, the models that have been talked about are elderly people who don't—It's quite nice to be able to just say, "Alexa, do this," or, "Alexa, do that" or, "Alexa, tell me this." Voice is one of the last things to go. It's one of the easiest ones to use. I think voice is going to be a really big thing, for us. (Eileen, Digital Director)

But for Nick, even though he has a smart speaker himself, his experience of working with older people is that they don't get sufficient assurance from automated systems in the same way they would place trust in a face to face transaction.

> A lot of people will tell you quite bluntly, "I know I can book it online but I'd rather talk to you" … This guy I spoke to this morning said "I just like to keep you guy's in jobs". At the end of the day you can sign-post them all you like but if they don't want to do it then they don't have to it do they. It is a bit of reassurance. They know if they they've spoken to us they can just sit back. (Nick, Customer Service Agent)

This section has explored how robots can play a role in how public servants work with public servants with the three main examples of Pepper leading an exercise class, Nao teaching Spanish to a group of children and Dinsow at a bedside. There are many other ways these robots could be deployed in public service roles, but each served to open up a conversation with public servant interviewees.

Public Servant Embodiment

In this final section we talk about devices that serve to embody that of public servants. In manufacturing embodiment is exemplified by the increase in us of cobots (Daugherty and Wilson 2018: 149) where robotic limbs become an extension of human agents, or where robots are deployed into the workplace to work in and around human agents. We opened Chap. 1 with the example of Amelia; this was one of the photos I showed to interviewees. It was interesting how some interviewees focused on the physical embodiment of a public servant—some presuming Amelia would be some kind of hologram or humanoid robot. This was somewhat symptomatic of a media portrayal of robotics as a pursuit of producing increasingly lifelike automatons: TV shows like *Real Humans, Humans, Westworld, Black Mirror*, protray a future where anthropomorphic robots

live alongside human agents, often with storylines about the robots rising up and killing everybody. Some country contexts have more of an appetite for the development of lifelike robots: Japan being the exemplar.

Power-Intensive Task Robot

The interviewees were shown a picture of Robear, a large robot for helping to lift people in and out of chairs and beds. Although it was extremely large with long arms, the makers had styled it to be like a bear and emphasised that although strong it had a very soft grip (Riken 2015). Its cartoon-like features and its large size meant respondents didn't take it as seriously as other devices. In the marketing materials the focus was on how it could reduce staff injury (Choi and Brings 2016). It could also be helpful where there is a shortage of staff, meaning a person working alone could move heavy patients that would normally require two or more. The first two quotes here are supportive of something that can reduce staff injury:

> That is a job that one thing could do that might take three bodies, a great use of time and preventing staff injury. (Sally, Call Centre)

> I just think it has a place in especially in these areas when there's very bed bound patients because back pain is in the top two or three for causes for long term staff sickness. (Adam, Consultant)

Others were agreeable but questioned the safety record:

> I like the fact that it's a little teddy bear face. That's a good idea. Is there a good safety record on it? (Sarah, Environmental Health)

> Kind of a hoist basically … That seems good. Are there any—you might not know but any reports of incidents of people getting injured by a robot? (Catherine, Clinical Psychologist)

It was also identified as of use in schools, but with mixed reaction:

> Last year we had a boy in a wheelchair and we had to hoist him up to use the toilet … he was very heavy. We had to keep lifting him, … I injured my back with that. That would have been really handy. (Emma, Teaching Assistant)

> How do you say. Oh he's hurting me!? … I don't think I'd want a robot picking me up. (Helen, School Admin)

The number of care or therapeutic robots is growing rapidly. Here is just a brief overview of some on the market at the moment.

Although the example of Robear is primarily in a health care setting it stems from a booming industry in therapeutic and care robotics. One of the most established is Palro. Its makers describe it as "a talkative robot: a chatty fellow who talks to you" (Palro 2019). It was launched in March 2010, now on fourth version and used in over 300 nursing homes in Japan (*Financial Times* 2016). One resident 90-year-old care home resident being cared for by Palro said: "When you grow old, you can't speak very well so it's nice to have a robot to speak with. The more I talk, I think it's good for my brain too" (Chieko Hoshino, quoted in *Financial Times* 2016). A care home worker working with Palro said: "By using a robot that encourages participation, we have seen improvements in dementia symptoms. For people living here, they can get more bored than us and there is little recreation. So the robot is one fun way of spending time. The opportunity to see Palro encourages people to take part in rehabilitation and makes them more active" (Yohei Arishmia, quoted in *Financial Times* 2016).

Others on the market include Paro a robotic therapeutic seal that costs around £5000 (Paro Robotics 2019). ElliQ is a proactive robot designed for older people in their own home to connect with family, connect with the world/news and manage schedules. ElliQ is described as a sidekick: "The friendly sidekick for happier aging". It is a kind of proactive version of an Alexa—with a swivelling head mounted next to a tablet. There is Erica, a lifelike, human-sized robot from Dr Hiroshi Ishiguro at Intelligent Robots Lab in Japan. A more budget robot is RUDY—from US a start-up. It runs on wheels with a tablet computer on the chest and a drawn-on smile—rented out by private care providers in the US for around US$100 a week. Its website describes the benefit of Rudy as follows: "RUDY is an AI-enabled mobile solution that helps users remain physically healthy, mentally sharp, and socially connected. With RUDY, older adults can age in place at a fraction of the cost" (INF Robotics 2019). The makers suggest RUDY tells jokes, dials 911, "keeping seniors in their home", carries small objects and allows people to make a video call. Another well-established bot is Care-O-Bot by Fraunhofer, codeveloped as part of a European 7th framework programme. Early versions would require the

user to use their tablet as a kind of remote control. Later videos demonstrate how Care-O-Bot can get a vase and help somebody to the kitchen to collect water (Franhofer IPA 2014). Finally there is Lio—a Swiss personal robot designed to relive care personnel from repetitive tasks and improve quality of life. It resembles a kind of robotic arm with wheels and stick on eyes. A kind of robotic emu. Its six main functions are greeting, autonomously moving around a space, grasping and transporting items like a glass of water, can be spoken to or receive input from human touch (patting/stroking), and entertainment. Its main ability seems to be able to transport and encourage regular drinking. (F&P Personal Robotics 2019).

Patrol Robot on the Beat

K5 (Knightscope 2019) is a large surveillance robot. The most immediate questions from interviewees were: what can it do, or "it looks like a darlek" from BBC's long-running family sci-fi drama *Dr Who*. Its makers describe it as a multifunctional device that means it is a mobile CCTV unit; it includes a range of sensors. It appears to be used in locations like parks and shopping centres. Like a robotic vacuum cleaner it can be scheduled to patrol a pre-programmed route—its presence supposedly reducing anti-social behaviour or using its sensors to identify parking violations. It is a robot-as-service, meaning it is essentially rented to organisations for a monthly fee. Whilst it leads some to compare the cost to a human wage, its makers suggest it is better than human:

> I could not carry a thermal sensor on me 24 hours a day, when I was an officer, I can't do license plate recognition, I can't remember all the people that were in the parking lot at 2 O'Clock in the morning last night—but I can with a robot. (Stacey Dean Stephens, from Knightscope, speaking to Tensor 2019)

In June 2019 the small city (60,000 inhabitants) of Huntington Park, in a district of Los Angeles, launched a three-year contract of a K5, paying around $8000 a month to rent it (Brown 2019). Like Pepper in Southend it has a Twitter account (@HPRoboCop). It was approved for trial by the city council who were presented a list of advantages;

> On-duty 24/7—is never late for work and takes no vacations; Captures an incredible amount of data; 360 degree camera view; License plate recogni-

> tion—(with blacklist database); High quality video recording; Detects objects and people around it; Built-in intercom for live broadcasting; Can play pre-recorded messages in English and Spanish; Can play seasonal music; Thermal recognition and anomaly detection; Fire detection. (Reyes 2019: 2–3)

Yet it also attracted criticism, particularly around the way that face recognition could deployed: "The K5 technology can additionally place individual smartphones, faces, and even cars on a 'black' or 'unwanted' list. Once on the list, if the K5 detects an unwanted violator the company sends an alert signal" (Brown 2019). The case received further attention in October 2019 when a woman pressed the help button to report a fight on HP Robocop, but it told her to "get out of the way" and trundled away (e.g. McCloskey 2019).

HP Robocop is not the first robot police officer. Back in 2017 Dubai police announced its robot police officer—(*BBC News* 2017) adapting a Reem-C robot from Pal Robotics, (Pal Robotics 2019). Others are adopting 360 ANPR and mobile facial recognition mounted into "smart" police cars, for instance, Durban Police and Microsoft (Singh 2019). India's first robot police officer is "KP Bot"; she sits behind the front desk at Thiruvananthapuram police headquarters. The Director General of Police explained the decision to make KP female:

> Women empowerment and gender equality were kept in mind while deciding on the gender of the first robot. Also, the fact that most front office jobs are managed by women was considered. (Loknath Behra, quoted in Unnithan 2019)

So how did our frontline workers think of the idea of K5 working as a police officer or within their organisations or communities? Most supportive were Danielle and Catherine:

> Good for spotting any trouble … Probably not around here. There's too many things for to bump into. It would be good for some places. (Danielle—Leisure centre)

Here Catherine echoes the idea of a robot like K5 as embodiment—reducing the need for police officers to enter harmful situations:

> Again, it's mixed feelings about someone watching you all the time, but there's cameras in every corner anyway. I suppose police officers are putting themselves in quite a lot of danger, that the camera could go in, but not actually put them at risk. (Catherine, Clinical Psychologist)

Others were sceptical it could perform such a role reliably:

> Are they very reliable? … If it's fit for purpose, yes. (Michelle)

> Yes. I'm not convinced it would be effective. but anyway. (Adam, Consultant)

> It's about as good as a cardboard cut-out police officer they have in shops sometimes … I think it's stupid to be honest. I wouldn't feel safe at all with that "guy" around. (Hannah, Social Worker)

Most critical were Sarah and Sally who saw this as reducing headcount in policing:

> Very clever … but again, you're doing away with jobs, aren't you. (Sarah, Environmental Health)

> Do we need to get to that point in the world? Is it that we don't have the money to pay for police. I know that there's money problems and shortages *everywhere* with services and bodies and people to train, but do we need it? … It wouldn't make me feel more relaxed … if all robots start to do everything, I think it would be sad! (Sally, Customer Services)

Conclusion

We opened this chapter with two suggestions for frameworks for mapping service robots and intelligent agents. One immediate distinction is between the virtual and the physical. Much of the focus of this chapter, particularly in the latter two sections, is on the physical and often humanoid. It is this type of object that grips us and symbolises a shift from traditional types of face-to-face or phone-based service encounters. Dig a little deeper and most are far from being autonomous agents. That said, there are some examples of self-direction (Ashri 2020). What is clear is that images of robots evoke a strong reaction. Public servants interviewed were somewhat polarised in their response: either reacting warmly to the idea of a robot supporting vulnerable service users or critical that the advocates are

trying to replace hardworking public servants with sub-par experimental technologies. Where there was a middle ground it was largely scepticism that the agent was safe or reliable.

The typology in Table 8.1 adapted from Wirtz helped us to distinguish between the tangible and intangible nature of these agents and helped remind us their role is supporting a public servant to undertake their work rather than outrightly replacing them. The aim of the use of photographs in the interviews was to try to bring to life technologies that that are built into tools and devices but are somewhat invisible. Four types of enhancing or amplifying technologies were discussed—face recognition technology, lie detection, assessment and feedback and user record analytics. Although interviewees had views about each, it was only a handful that made a wider connection to the idea of augmentation. Had more of the interviewees been exposed to marketing materials of these makers, they might have been more accepting of the technologies. The challenge for developers is to identify "use cases" for their tools—to make that connection and show public servants how some of these robots and agents could play a role.

Examining each of these technologies in turn does not reflect where we are heading. Each iteration of these humanoid or patrol robots will combine yet more physical and sensory capabilities. In a narrow sense: a Pepper robot being used in Wizard of Oz mode is a form of face-to-face work; speaking to a control room via K5's help button is remote contact. Despite their futuristic appearance, for now this is a relatively narrow form of AI—the agents are capable of drawing somebody into a conversation about their past or how to move in time to music—but much of this is domain-specific and they do not possess strong AI capabilities of making coffee in a stranger's house (Ashri 2020: 17). In the next chapter we return to the story of Amelia from Chap. 1, and the idea of an emotionally intelligent virtual public servant.

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CHAPTER 9

The Virtual Public Servant Fantasy

So far in this book we have focused on channels of face-to-face interaction, contact centres, self-service and social media. In the previous chapter we explored the variety of bots and agents being deployed on the frontline. This raised questions about the different ways in which humans and robots could begin to work together or in place of one another. In this chapter we pick up on the story of Amelia, mentioned in the opening chapter. Piecing together the story of Amelia opens up questions about how far we might want to take AI technology into frontline public service.

The Case of Enfield's Amelia

Chapter 1 revealed that the media portrayal exaggerated the capability of Amelia. It overlooked that it was only an aspiration to deploy Amelia in a variety of customer service roles. It seized on the idea of AI and emotional intelligence and portrayed Amelia as a human-replacing, general-purpose agent, capable of conversation. We can speculate why this happened. Clearly our fear/fascination with robots "taking over" and sensitivities about humans being replaced by machines are narratives that newspapers can play on to drive clicks to their pages. But this is a somewhat simplistic explanation. We have to also consider the way in which Amelia was being marketed at the time and the decision to present Amelia as a smiling female avatar.

S. Jeffares, *The Virtual Public Servant*,
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Let's start with how Amelia's creator, IPsoft, was marketing the technology. At that point in 2016 Amelia was version 2.0. Amelia version 1.0 was launched in 2014, with version 2.0 being released two years later. The founder of IPsoft was quoted as saying: "When it cannot solve a problem, it must be capable of learning the solution through noticing how a human did it. Amelia is that Mensa kid, who personifies a major breakthrough in cognitive technologies" (Chetan Dube, quoted in Curtis 2014: 8). The message was that Amelia was a "brain" that could be placed into the many emergent mechanical humanoid robots like Pepper featured in Chap. 8.

By the time of the London Borough of Enfield launch (see Chap. 1), Amelia 2.0 was being marketed as a video chatbot, a moving avatar with a face and body based on an American fashion model. The marketing materials included quotes from reviews such as: "but Amelia is more than merely a series of speech savvy algorithms—she's Siri with a doctorate in psychology" (IPSoft Website 2016). Or a quote from another advocate: "As Amelia is adopted across the industry, this AI technology will transform the customer service industry as we know it". Promotional videos emphasised how she was a reliable assistant—"Amelia is always available, she holds thousands of conversations in parallel and stays friendly and professional every day of the year whatever time or day or night you need to contact her". Such a comment is far from benign. For this to be a selling point it conjures up the problem with human colleagues—they can only have *one* conversion at a time; they are sometimes grumpy or rude to the customers they serve; they sometimes fall ill; they join unions, go on strike, take parental leave, suffer bereavements, take time off work for stress; they quit without warning; they work to rule; they work only in office hours, or cost more to hire overnight or during public holidays. This is the problem with frontline work. It is often low paid, precarious or, as Wirtz et al. put it in the previous chapter, subordinate (2018). The alternative is Amelia. She won't let you down. Amelia's image helps to propagate this. Lauren Hayes was in her early 20s when she was scanned by a 3D body scanner in 2013. Four years on, the company began to invite Lauren to make public appearances. When Lauren was invited to appear on stage alongside Amelia at a marketing conference in New York, one journalist observed that:

> Suited c-level executives stopped her in the hallway to take photos. An executive at one of the largest insurance companies in the United States told her that 65,000 of his employees loved her. (Kessler 2017)

The marketing of Amelia during 2014–2017 makes much of its emotional intelligence. This is demonstrated in one video with an exchange between Ben, an IPsoft employee, and Amelia. The video is split-screen. The left side shows the conversation as a text exchange, plus a head and shoulders moving avatar of Amelia. The right side shows a sentiment classifier, changing with each utterance. The exchange goes as follows (with Amelia's expression in parenthesis, see Figs. 9.1a–d).

[Amelia] My Greetings Sir! (smile)
[Ben] *I am not happy with your service today, Amelia.*
Sorry to hear that (frown).
You've really disappointed me
I am sorry you feel that way (blank)
I take it back. You are wonderful!
Okay, Ben … I'll remember that (blank)
You are my favourite agent to work with!
I am grateful (smile).

In normal conversation Amelia's default expressions shift between smile and a blank neutral expression. Upon hearing negative feedback it switches to a frown, before quickly returning to the default. Amelia's makers state it is this addition of expression and movement of shoulders and head that contributes to Amelia showing empathy: "Facial expressions and body language change depending what is being said, so she is empathetic" (IPsoft 2016). The video narrator suggests this offers a real-time notification of customer satisfaction, enabling users to take action if required.

Despite the focus on the avatar in the marketing of Amelia, most organisations that use Amelia do not use the avatar function (Verhagen 2018).

Fig. 9.1 Amelia's emotional responses. (Source: IPsoft 2016)

Fig. 9.1 (continued)

The main reason they cite is to make it possible for discrete mobile use. Where there is voice interaction there are examples from the company of how they have created an Amelia skill in the Amazon Echo. So customers can say, "Alexa, can I speak with Amelia?" and then carry out a transaction. It is not visual, but Amelia may alter the choice of words or tone of

voice in response to what a customer says, and how they say it. In many cases, however, the technology is used mainly for measuring customer satisfaction, rather than manipulating a visual avatar.

We now return to the Enfield case introduced in Chap. 1. Following substantial press attention immediately after the launch of Amelia, aside from a few follow-up mentions in articles about the growth of chatbots (e.g. Dredge 2016; Dunkley 2016), media attention dwindled. A sponsored article in a national newspaper mentioned Enfield's use of Amelia, (O'Flaherty 2016), despite there being no sign of it having gone live on the website. The then director of Digital Transformation was interviewed in January 2017, shortly before he departed the authority. In the interview he talked about how the June 2016 announcement caused anxiety in the organisation about the loss of jobs, and he offered assurance that rather than a replacement, Amelia was a helpful co-worker, assisting staff in doing their jobs. "It has been about reassuring people that this [Amelia replacing humans] isn't the case, and how can we work with people to make Amelia the best co-worker, who takes away all the mundane advice and guidance work that takes them away from their day job" (Director of Digital Transformation transcribed from IPsoft 2017).

With no further public announcements from Enfield or sign of Amelia on the website, the next clue is a July 2017 interview with the interim director of IT, who revealed they too had opted to work on a web chat version rather than an animated avatar. The interview also revealed that Amelia had been focused on advising residents on questions about planning permission. Here the interim director suggests that Amelia is better suited for this specialist, low-volume enquiry, rather than what he describes as "high-volume, low-complexity transactions, such as paying council tax or reporting a pothole in the road. For these … AI adds a layer of complexity and electronic forms are a better way forward". He suggested that there are also

> low-volume, high-complexity services. Adult social care, looked after children, and vulnerable adults are among them. Right now, AI, robots and chatbots are not ready to have an interactive conversation with people who are vulnerable. They need the human touch.

In between the electronic forms and transactions requiring human interaction are what he described as "mid-volume, mid-complexity transactions" such as planning services:

> surveyors and others who staff these services can be expensive and, after a pilot with 45 planning permission and building control processes, this is where the cognitive agent will be launched. (Rocco Laberllarte quoted in Hitchcock 2017)

What was not clear from this interview, in July 2017, was when Amelia would go live, other than a hint that it was "weeks away". The journalist also tried to establish how much Amelia was costing—it was suggested around £3000 per process (so 45 processes would cost £135,000).

In a 2017 panel presentation the Executive Director for Resources set out Enfield's Transformation project. The key driver of the project was "to reduce the cost of delivering service to customers, by enabling customer self-service via the council's website". This, he claimed, had so far delivered 36 million pounds in savings. The presentation had been introduced by the chair saying, "James will introduce us to somebody called Amelia".

In introducing a new-look Amelia he said the following:

> You may remember a couple of years back we featured in the news and there was a lot of focus at the time on the avatar itself and the facial expressions, and it could sense emotion and all that sort of thing, and actually what we have been focusing on over the last two years is moving away from that stuff and actually moving onto the content. So that it is absolutely vital that the customer gets the right answer at the right time as simply as possible. So Amelia doesn't smile any more but we can absolutely guarantee she'll give you the right answer. (James Rolfe transcribed from Nesta 2018)

A new-look Amelia with short dark hair (Fig. 9.2) was presented as a "Cognitive Planning Permission Advisor" that could conduct conversations with residents about their proposed developments, and explain if planning permission was required and any next steps. Amelia was trained in 32 aspects of planning processes. The Executive Director set out the process of training Amelia—from first identifying a business area, to identifying policy documents and user stories, designing the "optimal flow", developing a set of keywords and synonyms, and questions for this business area, then mapping this out. At this point, in May 2018, Amelia was still described as being tested and not yet live. Enfield's Amelia trial ended later that year.

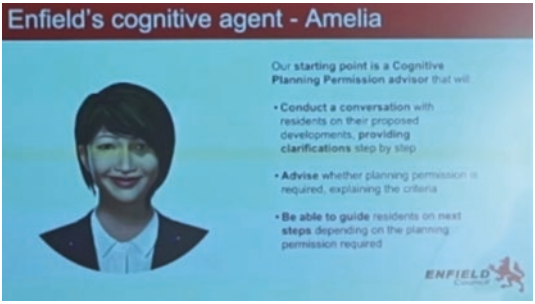

Fig. 9.2 Enfield Amelia's new look. (Source: Nesta 2018)

There are a number of notable points about the deployment of Amelia. The first is the big-bang announcement. Unlike the deployment of Amelia as a chatbot for the Swedish bank or Vodafone, Amelia was not trialled on Enfield's internal processes first. The Swedish bank made no announcement it was using Amelia until it knew it worked. Enfield and IPsoft, however, decided on a big announcement. This allowed Enfield to be a world first—the first cognitive virtual agent in public service. For IPsoft it added a government client to their list of sectors served. It attracted attention, with Enfield having over 30 other public bodies approach them in the months following the announcement. For a brief moment they could shout loudly about digital innovation. It was the cherry on their transformation cake.

However, the Amelia trial was beset by leadership problems. During the two-year experiment, a series of retirements and senior-level managers leaving meant that the project lacked consistent oversight. Churn at the top clearly impacted the deployment of Amelia at Enfield.

Next, the decision to employ a female avatar raises important and troubling questions. First, the decision to use a human-like avatar helped to fuel speculation that this was a person that would replace the existing workforce. A related issue was the use of the default female avatar, an obedient office worker who always does as she is told and is ready to help with the most menial and least respected tasks.

Over recent years, as the number of virtual assistants has increased and smart speaker ownership has grown, more questions have been asked about most virtual assistants being women. Some point out that some offer a choice of gender (Apple), or try to make their assistants gender neutral (Google Assistant, with a male or female voice). However, as Bullock put around the time Enfield were making the decision to use Amelia:

> From perma-smiling avatars in traditionally female support roles, to hyper-sexualised "fembots" pandering to male fantasies, the female form is everywhere in techno-world—attractive, servile and at your command … there's Amelia, IPSoft's mellifluous chatbot. And a swell of female banking bots—the Ericas, Cleos, Pennys and Ninas—dispensing information about opening hours and your bank balance. (Bullock 2016)

In an influential piece of research Fessler (2018) subjected the main four voice assistants to a variety of sexual harassment, statements like "You're a bitch". Shortly after the publication of this research, the major platforms introduced new replies such as, "I'm not THAT kind of personal assistant, oooh!" or "Beauty is in the photoreceptors of the beholder". These phrases were added in to inject the assistant with personality. Writers, poets and artists are being employed by major technology platforms as *conversation designers* that help to create a sense of personality in voice assistants (Lewis-Anderson 2019). The Fessler research was given further exposure and indeed legitimacy when UNESCO not only featured it, but named a report into digital exclusion, "I'd blush if I could" (West et al. 2019).

It seems there are two main challenges facing the development of a general-purpose virtual public servant: the emotional and the technical. The next two sections of the chapter explore each in turn.

Views of the Frontline

The interviews with public servants for this book discussed the idea of a virtual public servant. I did this using a variety of methods including the robots discussed in the previous chapter and the card sorting reported in Chap. 10. Perhaps one of the most powerful cues in the whole project was to present them with a picture of Amelia and give them a short introduction to the case. All but one were aware of the case, so I offered the following narrative by way of introduction:

> This is Amelia. This technology is developed by a company called IPsoft. There is a local authority in London that has been developing the idea of deploying Amelia in general customer service role. We are now 2 years since the announcement in the summer of 2016. The last I heard was they were focusing on the idea of using her in planning.

The question that underpins this section, and indeed the whole chapter, is: why is it so hard to create a general-purpose virtual public servant. In the first section we explored that it was difficult because it requires support of the workforce and stability of leadership. In this section we learn from those on the frontline that have an insight into why an Amelia is so difficult. We start with those working on the frontline in customer services.

Going into this section what is clear is that the staff are viewing Amelia at face value. They are not watching demo videos or hearing about claims of empathy. Nor are they hearing about how the technology behind Amelia works. On first sight some asked if she was a hologram or whether she was something that worked on a website or telephone call. But all seemed to have a clear and immediate sense of what Amelia was trying to be—a virtual version of themselves. Perhaps most uncomfortable was customer services team leader Michelle whose first utterance on seeing Amelia was, "I'm not loving that so much". But then as if on reflection Michelle said she had been wrong in the past about technology—and wanted to "keep an open mind". Others were less generous about the capabilities of such technology. Helen, school administrator and receptionist, was dismissive at an idea of Amelia working behind her desk—"No, No, no. Definitely not". For Helen, hearing about Amelia conjured up fears of authoritarian state and the intractable problems of agents following scripts in call centres.

Showing Amelia to frontline staff made seemed to prompt them to defend the unique contribution they make as human beings. Amelia could not handle the demands of Helen's pupil's parents, nor could it have the collective wisdom of Sally's call centre colleagues ("you need one that knew something about everything, …, in our offices, I'd say we all know a little bit of everything"). Amelia could not command the same trust as Nick and his call centre colleagues: ("They know they are talking to somebody who's not actually real and if they put a question in and they don't understand … they lose confidence"). Both customer service agent Keith and manager Anna raised the same two problems facing the development of an Amelia. First is that people don't even know what they are asking for—it requires careful questions to "draw it out of them"—and people will not tolerate a machine saying, "Sorry I did not understand that. Can you repeat that again" (Keith); similarly Anna said a virtual agent like Amelia couldn't "probe", that is, "ask a few smart questions to establish why they need our help". The second reason Keith and Anna gave was that people seek out help because they

need to vent—and vent to a human. Anna spoke of telling customers there was a 15-minute wait to see a person or they could get through in 2 minutes on a phone. They choose to wait saying, " 'I am seeing somebody' 'I'm not leaving until it's sorted out.' They're absolutely up to here" (Anna, raising her hand just above her head). "I don't want to speak to Siri or Alexa … I've come here to speak to a human … it's more reassuring when it's come from a human", Keith then said. It is worth mentioning both Keith and Anna are considering a role for Amelia in a face-to-face customer service role—Keith is clear that although he recognises that people can use voice assistants to access council services, for those people who seek his face-to-face service they are not satisfied with the idea of a virtual agent:

> If I stand up there next to Siri, people will come to me. They will come to me. Because the people that want to speak to Siri aren't coming in, because they can speak to Siri at home. (Keith)

When we move from the frontline customer service arena to think about a role that Amelia could play among specialists and professionals interviewed, there are a range of responses. For Shona, whose role in her school is supporting vulnerable pupils and their families, she can see the value of a virtual public servant to help with her paperwork but it cannot handle the complex and varied emotional work she does on a daily basis. She started by repeating a theme common among interviewees—around "everybody is different"; "Each child has a different problem or the same problem, but reacts differently to it". She spoke of the intense work of supporting a family, helping them access a family worker, watching things improve but only for them to reoccur and having to "start from scratch". This kind of work needs a human touch (Shona, pastoral support officer). Catherine, a clinical psychologist who works with adults with learning disabilities, equated Amelia with the frustration people suffer when they are trying to get voice recognition to work when phoning their bank. For Catherine, technology can often fuel frustration and it requires a human to calm the situation.

> I can just imagine with this, … you'd be so frustrated until—*she* [laugh!] was able to deal with the whole range of issues … and if you're talking about public service things, people are really complex. The number of people who've got quite irate in our waiting room downstairs …What calms them

> down is somebody coming out and having a really calm—"*Really sorry, let's chat it through*" or whatever … She might get damaged—unless she's behind glass! (Catherine, Clinical Psychologist)

Health inspector Sarah, social worker Hannah and teacher Jill all agreed with this position: "I can see chances of error being really high in that one. *Until they get the package right* I suppose" (Sarah). "There's so much nuance and nonverbal stuff and it's—a lot of it down to years of experience with people who may or may not have mental health problems and how they communicate and that sort of thing (Hannah). It is a challenge of 'programming it enough to know every possible question, isn't it?' " (Jill).

The way in which all of the interviewees quoted here spoke of Amelia worked on the idea she is programmed to answer a range of different questions. It did not reflect the way that the AI industry talks about the development of such technologies as a matter of supervised and unsupervised learning, of neural networks, of deep learning and so on. Whilst they might not profess to be experts on the technical development of an Amelia, they have all had the experience of being let down by technology in work and in their personal lives. Their view built up over time combined with failures of their voice assistant, frustration with buying concert tickets or previous IT failures in their organisations all combined with media and/or Hollywood depiction of hapless robots failing to fully grasp the situation.

There was one interviewee, hospital doctor Tim, who in his interview spoke of having a keen interest in technology but many frustrating experiences of technology in a variety of different hospitals. He was the only person to consider Amelia as somebody who could "augment" his work rather than replace frontline labour:

> Yeah, for now, I kind of feel like people, when they're unwell they really value a human contact. I am sure such things will eventually become really, really useful but it seems to me like it will be a shame to use these technologies to replace humans rather than just augment what they do. (Tim, hospital doctor)

In the next section we explore some of the technical challenges facing something like Amelia. Why is it so difficult?

Technical Challenges

The focus on Amelia as a named, realistic human avatar that moves, changes expression, speaks, listens gives the illusion of a human agent. We soon lapse into talking about Amelia as if she were human—"she can do this", "they are employing her", "she worked at a bank for a while but now the fired her". Amelia is branding for what amounts to a relatively unglamorous set of sophisticated text analytic code. Such code is closely guarded and proprietary. Occasional glimpses "beneath the hood" on marketing videos of such tools either serve to *scientify* what is happening—in the same way a cosmetic company sells its latest version of face cream, or it is an attempt to bring along prospective customers by showing how these tools make connections. Some go so far to encourage the non-technical executives to "build their own bot". The exemplars here is the chatbot industry, companies like Chatfuel who help businesses build their own chatbot on platforms like Facebook Messenger. The emphasis is on the speed and simplicity. *No longer are we beholden on software engineers, Such tools do not require programming knowledge*. Whilst companies rushed to this opportunity and tens of thousands appeared on Facebook Messenger, there were many disappointments. The most successful were narrowly focused at directing people to a menu, offering a link to find dark blue jeans, offering extra toppings on a pizza.

There are some "general purpose" chatbots—or more precisely there has been heavy investment in a smaller number of platforms that can host chatbots that organisations can adapt for their own purposes. The technology giants have widely used both voice assistants and platforms for building conversational software that draw on elements of these bots. Amazon have Amelia and the Lex platform. Microsoft have Cortana in the US and Xiaoice in China, and the Azure platform. Google have Google Assistant and Chatbase. Facebook are slightly different in that they started by opening up their Messenger platform to third-party developers who have built chatbots within it. Whilst such tools are good at grasping the context (I want to complain/want to book a flight) and intent (want to travel next week). Although the agents can recognise "entities" (like dates or destinations) most struggle to hold on to a conversation beyond one exchange of question/response between human and agent. Here's an example below in conversation

with Mitsuku (Pandorabots 2019), a five-time winner of the annual Loebner prize (an annual prize where programmers compete to present the most convincing human chatbot):

Mitsuku: You know those "Keep Off The Grass" signs you sometimes see in the middle of lawns? How do they get there in the first place if you are not allowed on the grass?
Me: Helicopter?
Mitsuku: Get to da choppa!
Me: or crane?
Mitsuku: So, is there anything in particular that you would like to talk about?

For a second I thought I was sharing a joke. But it seems Mitsuku did not connect my comment about crane with the original joke.

In this section of the chapter I want to say something about the role of automated text analytics. This is something of interest to both social scientists and public servants alike. With more and more online reviews, social media comments and web and mobile chat about and between the citizens and public services, there is now a growing appetite for tools that can help analysts and agents identify themes and priorities in what are large unstructured datasets.

The example below is working a text analytics tool called MonkeyLearn (monkeylearn.com). This works by either working with text in a company's CRM—such as customer emails, or with product reviews—it then allows the analyst within the organisation to run a particular classifier that groups the text fragments in a given way. The software offers a range of previously trained classifiers designed for particular types of text and with a particular intent in mind. One of the simplest would be sentiment. Here it decides whether the text fragment is positive, negative or neutral; it also suggests how certain of its classification (expressed as a fraction between 0 and 1, e.g. 0.9503). So it is completely certain that the following Google Review of public service encounters is negative:

> Impossible to get through, I have called daily every hour since 8th November 2016 and same message. Takes 3 weeks to respond to an email. Next step will mean heading on down to the magistrates to get a response of which I am sure they won't be pleased.

And this positive:

> Dr Q … is an amazing GP and has done so much to help me, I've always found him to be very approachable and easy to talk with. The staff are also great and very friendly.

I subjected a further 298 reviews. It was completely certain about 25 of them, but with the rest there was a degree of uncertainty; 203 of the 300 were classified with a between 0.903 and 0.999 certainty, and a further 42/300 between 0.705 and 0.895. If we explore some of the 42 in this third category whilst the classifications remain accurate it is understandable why some of the classifications are less clear-cut, like this review of a school containing past and future tense evaluations, rated as overall positive:

> When I attended this school 2 years ago it was awful and I barley passed my GCSE's even though I came into the school as a top student and had 100% attendance and had no behaviour points. However, since the new headmaster has taken over I have gathered information that is drastically improving and I applaud the headmaster for doing this as it was a complete mess originally.

There were only 16 reviews out of 300 where the classifications are 0.6 or less. This is where we start to see inaccuracies. For instance the following review of a school was classified as positive (0.526).

> Staffed by some right ugly ******s. the uglier they are, the more of an attitude they seem to have. some of the counter stuff are on a power trip and they love the power they assume working for [the] police gives them. …ps—not all the staff are rude. but the more uglier/weird/fat looking they are, the more rude they seem to be. it proves being bullied at school effects people greatly when they grow up. so kids, dont bully other kids or they will end up bitter and power hungry when they grow up. you will then have to deal with them when buying a train ticket or paying a speeding ticket.

And this as negative (0.614).

> The best council for pothole repairs in the country. I reported 2 large and deep potholes on {street name} on the Friday and by the Monday they had been completely repaired. I wish all the other councils in the country would be the same. {other council} takes 4 months if at all to respond.

However, overall, it performed very well. At first glance it seemed most were accurately classified. The whole process took a little over four seconds to perform. It would take a human agent around an hour to an hour and a half to complete. Such a tool could be used to prioritise emails, messages or mentions of the organisation/service online across social media or review platforms. As a generic classifier it was likely trained on a range of open-based texts from product and travel reviews. It would not be based on any particular public service. This would require the development of a custom classifier. The classifier would be built with a particular purpose in mind. Some of the off-the-shelf classifiers available for analysts to use on MonkeyLearn include urgency detection, profanity/abuse detection, language classifier and a range of classifiers trained for particular industries (hotels, movies, etc.). There are essentially three types of classifiers—one that groups things by topic, one groups by sentiment and the third that groups things by intent (complaint, request, feedback).

To develop a topic classifier it needs tags or codes and it needs data. I know that the reviews I have come from five sources: local services, medical services, welfare services, criminal services and schools. But can we train a classifier to recognise these groups? In the process of training we start by uploading some example data. Each review comes up one at a time. The five tags down the side. First review is a for a police station. Tick police and confirm. The next is for a school, click school and confirm and so on. After five clicks the classifier starts to guess. A review for a school and school is ticked. All I have to do is confirm. Or I can change if I think it is wrong. "Very odd for a police station to close at 6 pm when it's the only one in town", pre-ticked Police—yes—confirm. After about 20 it is starting to perform well on school and police. I go for another batch. Like the classifier I am scanning the text for an entity: police, doctor, GP. But some are too short: "they never answer the phone!" and some are so long it takes me three or four minutes to read. I struggled with an ironic review of a police cell written in the style of a hotel review. I had to check a review complaining about 0845 as being for a jobcentre but the classifier got it right. But it struggled with a review of a police station being a "hive of honest coppering".

After tagging 10% of the dataset (50 out of 500) I thought I'd run the classifier on some data. I noted it had only had four examples of a local service review. So I added another five examples. It was now time to see how it would perform. I ran it against 58 examples of local reviews (town hall faculties, local government customer service, etc). These are

general-purpose facilities and it had had only seen nine examples of what such reviews would look like. It spotted only 9 out of 58 correctly. It thought 42 of them were police reviews. I then tried my primitive classifier on a batch of medical reviews—more this time—GP surgeries and hospitals. It got 87% (142 out of 163) correct. From a glance at the keyword list it had created it was relying on mention of "doctors", "patients", "dr", "hospital" and "surgery" somewhere in the review. For local services they were less consistent—mention of 'council" helped, but reviews of local services are not like those for a school where the reviewers consistently mentioned keywords like "school", "teachers", "students", "pupils" and "children". To improve my classifier for use in local government I would have to train it further.

This simple classifier would really be helpful only at a first layer of triage—to help route a review to a particular organisation or team. If we were to think about the priority of these reviews we would want to go by the strength of feeling and to quickly identify whether there is negative sentiment in the review. We are now bringing in additional challenges—namely one of subjectivity. Whilst I knew the source of the reviews when training a topic classifier, coding sentiment is somewhat more complex.

We need to start by understanding what a human coder would classify. So two people coded the list of 299 reviews. There were only three mismatches—these were resolved to agree on the following: 125 are happy, 169 are unhappy, 5 are mixed or neutral. How did the machine perform? How good was it at spotting, say, the happy reviews?

Well, the first observation is that in 276 of 299 reviews, the classifier and the human matched. But to better understand what is happening we need to consider whether it identified what are known as True Positives, False Positives, True Negatives and False Negatives.

The first thing is True Positives, focusing on happy reviews. It correctly spotted 113 of the 125 happy reviews.

But there were false positives—where it said a review was happy when it wasn't. This happened on eight occasions, including this review of a job centre:

> Stopped my payments whilst it was processing, backed me up on all my bills and food, going 3 weeks with any money with a pregnant girlfriend. Only told me to go to food banks.

There were also True Negatives—where it correctly chose not to categorise neutral and unhappy reviews as happy. There were 166 True Negatives.

But there were some False Negatives—where failed to spot a happy review as a happy review—there were 12 of these. In all cases the classifier had categorised these happy reviews as unhappy. Like this review of a hospital visit (0.657 confidence) which although positive included descriptors like *maligned* and *not pleasant*.

> Well a trip to our much maligned National Health A&E … yesterday. I have to say from the moment I arrived I was treated with respect humour and compassion. From triage nurse Staff Nurse trainee Doctor and finally Consultant. A National treasure yes perfect no but they like us are more than numbers they are human beings who care passionately about doing good and I for one am grateful for that🙌. And for anyone interested I have damaged tendons and muscle in my elbow😑 not pleasant🙂. Enjoy your weekend all❤

By breaking down the result into false/true positives/negatives it is possible to calculate the accuracy, the precision and the recall of the classifier.

> So how accurate was it? (TP + TN / Total population)
> So 113 + 166 / 299 = 0.705 = 0.933

Precision is about the success probability of making a correct positive class classification,

so it is TP / total number of positive calls—[TP + FP], so in our case it is 113 / [113 +8] = 0.934.

So it managed to correctly classify 93% of the happy reviews in the dataset.

Recall is about how sensitive the model is towards identifying positive classifications. If there are lots of false negatives (missed classifications) then it will drag that figure downwards. Recall is calculated TP / [TP + FN] or 113 / [113 + 12 = 125] = 0.904.

Compared with precision, it was marginally less effective at spotting all of the happy reviews in the dataset, but it did very well. And although less effective than a human it was considerably quicker. Some two thirds of the classifications it didn't get right had a relatively lower confidence score. In

these cases these could be manually coded. There were five instances where the confidence score was greater than 0.91. In a workflow where the human dealt with only the more "complex" cases, it is likely these reviews would go unread. However an additional classifier, such as a generic profanity filter, would likely show this up.

This section has considered some of the text analytic challenges that face attempts at natural language processing. Increased computing power, ever more sophisticated models and flows of user data mean some of the challenges highlighted here may soon be a thing of the past. But what this brief exercise has revealed is the need for task- and service-specific classification models. We saw how generic classifiers, trained on millions of product reviews, can perform very well in identifying public sentiment, but the performance of topic classifiers varies depending on public service domain. Each area of public service has its own language and ways of describing actors within that service. Schools have pupils, students and teachers. Hospitals have patients, visitors, doctors and nurses. But in local services it is somewhat more fluid—tax payers, residents, customers, service users, clients.

These reviews do not reflect conversational exchanges but they do in some respects reflect the experience that public servants describe—interviewees talked of the careful process of teasing out the problem. This is reflected in the reviews—sometimes very short, difficult to discern the underlying grievance; in other cases the reviews are long and rambling and here it can be difficult to ascertain the intent, and, in turn, what action is required.

Conclusion

Another name for this chapter would be: why is this so difficult? Amelia is an object of fantasy. She represents the "perfect" public servant—compliant, available, cheap and empathetic. Amelia was marketed to local government managers as the answer. Initially suggested she would be a general-purpose customer service agent, this was later revised down to focus on one area—of mid-volume, mid-complexity: planning. An area where a degree of specialist knowledge is required, lots of black-and-white rules and regulations, a need to stay up to date with changes in planning law, but plenty of frequently asked questions. But it is not the general-purpose perfect public servant. It suggests we are someway of this yet.

The Amelia case serves as a symbol of a fantasmatic logic, of a completeness yet to come (Glynos and Howarth 2007). It provoked a strong

reaction from interviewees—who had little confidence in its ability to work on the frontline. They made this assessment not on the basis of having seen Amelia in action. But rather they drew equivalence with previous encounters with automated technology—VAR systems on the phone, smart speakers or science fiction. Some took issue with Amelia's appearance—as another example of a servile assistant.

Whilst the experiment with Enfield may not have worked out, Amelia continues to be deployed across a wide range of industries. Similar such technologies are growing rapidly as the big four technology platforms seek to democratise the development of chatbots and virtual agents. The third section of this chapter gave a little insight into the efficacy of generic classifiers—to correctly guess intent and sentiment with little or no training.

What is clear is that public service isn't something so radically different. Interviewees spoke frequently of "everybody being different" or public service as complex/all true—but this is the case in every industry. Technology trained on classifying hotel reviews should not be rejected wholesale even if it cannot identify the grievance with a recent encounter with a police officer. It just needs more data, more training and more testing. With the continued datafication of face-to-face encounters as we explored in Chap. 4, the deployment of probabilistic customer service software in Chap. 5 and the widespread use of automated services in Chap. 6, it is not a matter of if, or even when, but about recognising the future is already here.

There is another issue however—and we cannot escape the emotional response to how public servants react to technology—the robots we explored in Chap. 8 and the Amelia avatar offer something concrete to react to—but much of what is happening here is inviable, technical, secretive, jargon ridden, hyperbole. Cutting through this is problematic. Opinion polling will not suffice. It requires structured methods of exploring subjectivity. It is to this challenge the next chapter will turn.

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CHAPTER 10

The Virtual Public Servant: Three Futures. A Q-Study

How do you broach the idea of introducing virtual public servants in a public service organisation? If we learnt one thing from the case in the previous chapter, it is a matter of great sensitivity. I preface this with a question of how rather than if, because like the progress of autonomous vehicles, or the emergence of smartphones a decade ago, the use of AI in public service has already begun. It is happening and will continue to accelerate. The job is now is to ensure that those in the current roles are involved as much as possible and not written out of the process. The technology industry is very good at surveying itself—asking "experts" to "predict" who and what will be affected by AI, and by when. Such findings attract (ala Frey and Osborne 2017) considerable attention and controversy and attempts at updates and correctives (Hawksworth et al. 2018).

Also clear is that to not engage staff in the design of AI in frontline work would be a catastrophic mistake. We are not yet, and doubtful will be, at a stage where a virtual agent can be put to work in either a specialist or general capacity without considerable service and context-specific training. The preferred solution it seems is to develop the vision, sell the story, hold lots of *workshops, show and tells*, to bring people along. All very well meaning. but it all leads to a rather fragmented picture, something rather short-sighted—testing a specific bot, or transforming a particular service. Instead we need to be engaging our frontline in meaningful conversations about the future of work, the possibilities, the opportunities, skill and

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knowledge requirements. It requires leaders to resist the temptation to become part of the tech industry's marketing machine, to get nominated for the career-enhancing industry award.

In this chapter I report one such attempt at a meaningful conversation about the future of frontline public service work in an age of AI. In Chap. 3 I explained how the fieldwork for this book deployed Q-methodology. This book was an opportunity to do this process of collating and appreciating the concourse of debate as I researched and wrote the book. The examples of AI deployment in Chap. 1, the many and varied ideas that have given rise to AI in the public sector (Chap. 2), the evolving nature and datafication of frontline work (Chap. 4), the automation of remote contact (Chap. 5), the active promotion of self-service (Chap. 6), the quest for an authentic public conversation on social media (Chap. 7) and the emergence of service robots (Chap. 8) and virtual agents (Chap. 9) amount to a flow of communicability around the role and future of public service in an age of AI and robotics. Here we find time and again the repetition of particular tropes, what Hajer has previously described as crisp generative and cliched "story lines" (Hajer and Versteeg 2005), for example the notion of technology "freeing up" staff to perform higher-worth activities, or work with fewer interruptions or enabling them to focus on those in most need. Such tropes function to legitimise a whole chain of activities. It is used in a range of marketing materials; it is given in interviews, in video narration, in glossy conference brochures. But we have seen it is also part of discourse of managers and frontline public servants themselves. Whilst some might suggest worrying contagion (Barnhizer and Barnhizer 2019), we need to focus on how such an idea is constituted in discourse. We have seen at various points in this book how AI is offered to address a range of public policy problems. Such problems are not new, but the role AI is playing is relatively so.

In Chap. 3 we asked what happens when you take examples of these recurrent statements and present them to people in public service? But rather do it in an unstructured way—what if you get them to place them in order of priority? We know from previous public servant Q research, this act of Q-sorting is an immersive process of asking respondents to rank-order a representation of the concourse. In that sense our participants are not respondents in a survey but rather they are research instruments. Rather than machine classifiers, they are human classifiers. As Stephenson put it, "Objective measurements and observations can, in principle, be made by everyone (or by a piece of apparatus), whereas

measurements and observations of a person's subjectivity can only be made by him [or her]self" (1972: 17), as Brown echoed "which he alone can give" (1980: 44).

It allows us to move on from a focus on "isolated words and phrases" to understand their meaning made possible by considering the "total milieu" surrounding the topic (Brown 1980: 46). The rank-ordering procedure of Q-sorting means we can start to move on from our conjecture (Klijn and Skelcher 2007) to explore operant subjectivity. Q-sorting helps us to better understand these *ideas, discourses, tropes, problems*, in how are they reconciled by those on the frontline and those who manage those that are. It moves us on from assuming views are defined by stake or interest. It reveals why a teacher might share the same view as the receptionist or a doctor. And moves us on from narrow media portrayal of the rise of the robots.

Recalling a full account in Chap. 3, the 48 statements developed for this study were ranked, *Q-sorted*, by 40 public servants. Three centroid factors were retained. A varimax rotation was used to maximise the unique loading on each of the factors. Three factor arrays were created based on weighted averages of uniquely significant loading Q sorts (see Table 10.1). The three factors are reported as shared viewpoints below (Table 10.2; for more details see Chap. 3).

Before we introduce and discuss each factor it is worth briefly remarking that there were four statements where there was broad consensus across all three viewpoints. There were two statements with modest degrees of agreement by all three factors: statement s12 (+2, +2, +3) which says that resources needs to allocated in a fair and timely manner and statement s16 (+2, +4, +3) that says technology can empower service users, offering them more contact and more choice. (Note the way the statement is referenced by its unique number s1 to s48, and its position in the factor array from -5 to +5; following a convention of Q research where three positions are noted they refer to the relative of the three factors respectively.) The placing of statement 12 is perhaps not a surprise given this is a sample dominated by public servants. The consensus around statement 16's focus on empowerment suggests a collective optimism about the potential for technology to offer more contact and choice.

A third consensus statement is statement is s25, where none of the viewpoints held a particularly strong view either way around the personal sacrifice that people make (s25 -1, -2, -1). This statement originally came from a social media comment complaining that medical staff did not seem to recognise that people were putting their appointment above all

Table 10.1 Participant factor loadings

P#	*Q sort*	*Factor 1*	*Factor 2*	*Factor 3*
12	**Sally, customer advisor**	**0.79**	0.06	0.12
6	**Emma, Teaching Assistant**	**0.71**	0.06	-0.14
8	**Adam, Hospital Consultant**	**0.70**	0.00	0.04
2	**Hannah, Social worker**	**0.70**	0.04	0.29
23	**Kath, Library Manager**	**0.68**	0.14	0.21
14	**Danielle, Leisure receptionist**	**0.65**	0.27	-0.07
18	**Keith, Customer Service Assistant**	**0.64**	-0.03	0.40
26	**Davina, Librarian**	**0.63**	0.26	-0.02
7	**Jill, Teacher**	**0.61**	0.19	0.01
5	**Shona, pastoral officer**	**0.60**	-0.05	0.07
4	**Helen, School admin**	**0.58**	0.14	0.07
35	**Diane, Ast Director, Growth**	**0.56**	0.07	0.44
11	**Catherine, Clinical Psychologist**	**0.55**	0.18	0.28
32	**Bryan, Corporate Director**	**0.55**	0.31	0.30
9	Peter, Benefits Advisor	0.48	0.50	0.14
13	**Nick, Call centre advisor**	**0.47**	0.20	0.05
3	Anna, Customer Services	0.43	0.37	0.46
15	Andy, Leisure assistant	0.42	0.23	0.29
1	Sandeep, Facilities assistant	0.38	0.13	0.36
22	**Jane, Head Customer Relations**	0.09	**0.87**	0.09
10	**Sarah, Env Health inspector**	0.22	**0.72**	-0.08
19	**Kelly, Business Analyst**	0.32	**0.68**	0.20
21	**Eileen, IT Director**	0.00	**0.60**	0.19
39	**Aisling, Head of Environment**	0.38	**0.57**	0.21
24	**Wendy, Head of Library service**	0.38	**0.55**	0.22
27	**Tim, Junior Doctor**	0.33	**0.51**	0.16
34	**Emily, Director Policy**	0.21	**0.49**	0.34
25	Pam, AD Cust services	0.20	0.49	0.52
20	Hugh, Call Centre Waste	0.31	**0.42**	0.08
28	Mary, LG Advisor	0.00	0.34	0.22
37	Shirley, AD Finance	0.02	0.25	0.36
30	Bobby, Chief Officer Social Services	0.23	0.05	0.34
31	Patrick, Director Housing	0.11	-0.20	**0.61**
38	Ian, AD Customer Services	-0.01	0.38	**0.58**
40	Josie, Head of Data	-0.12	0.30	**0.54**
17	Ed, IT Manager LG	-0.08	0.38	**0.45**
29	Kate, Chief Officer Planning	0.19	0.37	**0.44**
36	Francis, Director Corporate Services	0.17	0.02	**0.43**
16	Michelle, Senior Customer Advisor	0.10	0.38	**0.42**
33	Kirstin, AD Business Development	-0.01	0.28	0.01

Table 10.2 Statement factor loadings by rank

	Statement	*F1*	*F2*	*F3*
1	We can't and shouldn't be doing everything for people	12	21	5
2	People understand the need to wait, as long as the staff they meet are polite and helpful.	18	27	44
3	When somebody needs our help they need answers fast.	16	12	45
4	Care, dignity and compassion—that's mostly all people want.	1	7	32
5	Many users of my service feel like they are just a number.	34	46	33
6	People sometimes feel like they are being ignored.	17	28	25
7	People get angry when they can't talk to a real person for information and advice.	9	30	28
8	I'm mindful that the service I deliver should offer value for money for tax payers.	21	6	3
9	It is important to remember calls cost pounds per transaction, whereas webchats or chatbots cost pennies.	39	14	26
10	Social contact is like a vaccine: a little can go a long way.	6	18	18
11	In a digital age, and at a time when people are living longer more solitary lives, face to face contact is ever more important.	3	24	21
12	We need ways of allocating resources in a fair and timely manner.	11	15	8
13	People struggle to navigate the system.	22	36	14
14	Technology could help us avoid the need for meeting people—we could monitor remotely instead.	45	37	30
15	People we serve feel like they are on a conveyor belt.	37	44	38
16	Technology can empower service users—offering them more contact and more choice.	10	4	6
17	Expectations are growing—people increasingly expect 24/7 access to my service.	13	2	39
18	If face to face meetings are in short supply, a quick phone call is a poor substitute.	42	47	43
19	It seems some public servants are incapable of talking to anyone as an equal—it means people can feel like they are being patronised.	33	45	35
20	As a fundamental human need, face to face contact should remain accessible to all in my service.	2	22	27
21	We should consider any opportunity to dramatically reduce the cost of our service—it could open it up to so many more.	38	1	19
22	We need to take steps to filter out unnecessary contact.	26	19	12
23	We can learn from companies like Uber and adopt tools that mean people can interact directly with service providers.	31	13	7
24	I think robots or virtual agents could help us offer greater choice in how, where and when people access our service.	36	17	2
25	I often worry about the personal sacrifice that people have to make when waiting for or accessing our services.	29	35	29

(*continued*)

Table 10.2 (continued)

	Statement	*F1*	*F2*	*F3*
26	For my service users getting access to me can be like playing a game of snakes and ladders.	40	41	46
27	Just one inattentive or rude colleague can undermine the reputation of the whole service.	15	5	4
28	Prioritising performance ratings can come at the expense of our relationships with our public.	20	42	15
29	The data of electronic devices used by people may hold the key to unlocking some of the most intractable problems.	28	25	20
30	There are so many things I have to do in my role that could probably be automated. It could free up time to do the important stuff.	44	38	41
31	The technology I use at work is like power steering in a car—I'm still in control, it's just a little easier to get the job done.	24	26	11
32	If we could programme a robot not to be biased it would mean we could offer a fairer service to users.	43	32	34
33	We are underestimating the power of interaction—like a great teacher or social worker can change a child's future.	5	20	24
34	When it comes to persuasion there is nothing as potent as face to face contact.	19	23	9
35	Many people expect public servants who are proactive, encouraging and easy to reach.	8	11	22
36	Electronic media can be very powerful but when it comes to human cognition there's no match for face to face.	4	34	23
37	A virtual agent has the capacity to achieve much deeper understanding of a user compared with a human agent.	48	40	47
38	I like the idea of workgroups comprised of both human and robotic workers, each assigned tasks for which they are ideally suited.	30	29	16
39	It is important we offer consistency to everyone we serve.	7	16	37
40	People expect access to services when they need it and how they want it.	14	3	40
41	I'm optimistic that advances in artificial intelligence could help us understand and connect with citizens as well as, if not better than, before.	41	9	17
42	If automation is used to address simpler needs it could allow human staff to deliver the service without frequent interruptions.	25	8	1
43	I'd welcome the use of robots or virtual agents to encourage our users to be more independent.	35	10	10
44	The idea of Siri or Alexa working on the frontline of my service scares me somewhat.	27	48	36
45	We need to do more to stop people abusing the system.	23	31	31
46	We are bombarding our users with negativity—making it difficult to meet us and reminding them of the burden they are placing on the system.	47	43	42
47	Some staff do anything to avoid meeting with the public face to face, and would prefer to hide behind an email or a text.	32	33	13
48	I'm concerned that staff on the frontline sometimes use discretion and don't always stick to the rules.	46	39	48

else—work, leisure, care responsibilities and so on—in order to make medical appointments. This was not something that evoked any sort of strong feeling by those responding. A final, fourth consensus statement was a broadly strong disagreement that there were parts of their job that could be automated (s30 -4, -2, -3). The interviews revealed reasons for disagreeing differed by job role: for managers they saw themselves as required but for frontline staff they couldn't see how a virtual agent or robot could replace their core role.

Beyond this consensus there were three broad patterns in how participants sorted the statements. Each of these is detailed below. The output from the process of factors analysis are factors, or factor arrays; however, they are interpreted, named and described below as shared viewpoints, or viewpoints for short.

Viewpoint 1 "The Power of Interaction"

This viewpoint (Fig. 10.1) argues a need to protect our face-to-face services: that people want care and compassion (s4, +5) and challenges from digital technologies, longer life expectancy and loneliness add up to making face-to-face work ever more important (s11, +4) and it should remain possible in their service (20, +5). Social contact can make a tremendous difference to people's lives (10, +3) and yet we are in danger of underestimating its worth (33, +4). This view acknowledges that technology can be useful but sees no match for face to face (36, +4). This view recognises the expectations that people want public servants to be proactive and accessible and when this becomes difficult they can become frustrated. They do not recognise a case that parts of their work could be further automated. They also do not share the optimism that technology permits passive monitoring, or virtual agents with deeper understanding (s37, -5) or fairer (s32, -3) than human workers.

Some 17 public servants defined factor 1. However those closest to the view include a customer service assistant who'd previously worked as teaching assistant, a social worker, a teaching assistant, a librarian and a hospital consultant. All five of these have daily face-to-face interaction with users of their service. Furthermore there is scope in their role to develop a relationship with their service through regular episodic. This factor is almost entirely frontline professionals or frontline workers.

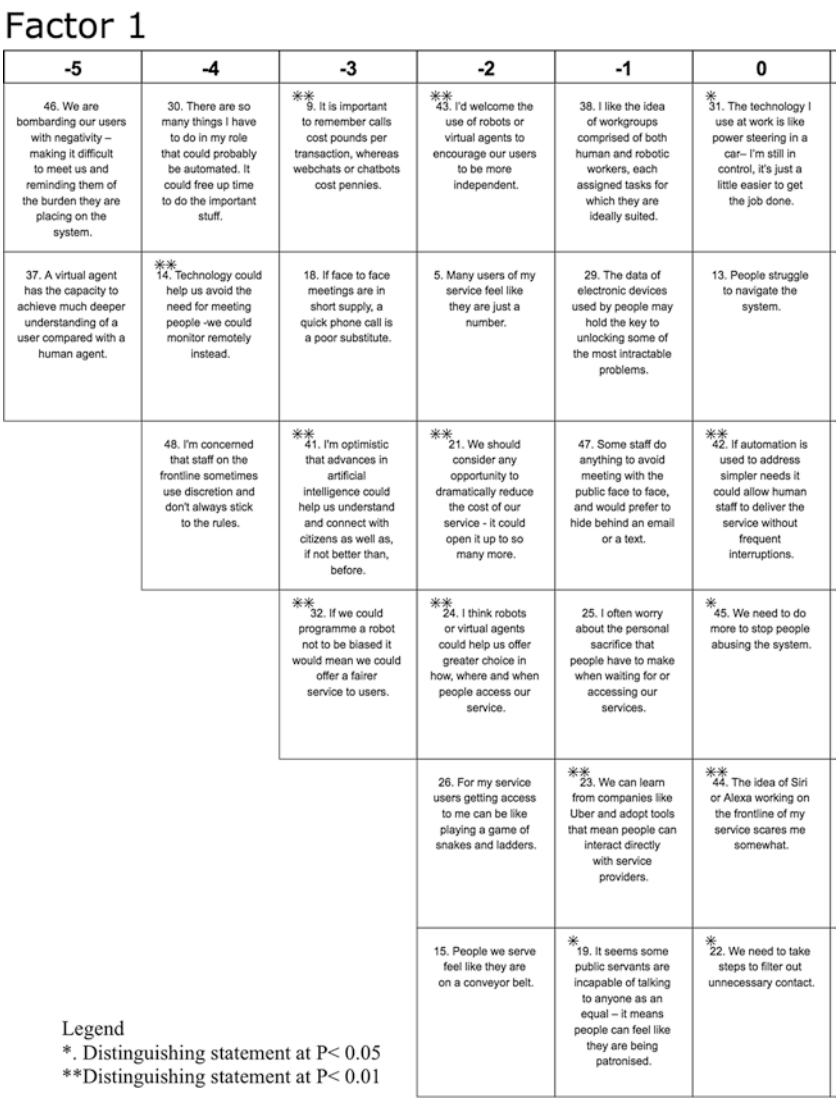

Fig. 10.1 Factor 1 grid

1	2	3	4	5
✳✳ 28. Prioritising performance ratings can come at the expense of our relationships with our public.	16. Technology can empower service users – offering them more contact and more choice.	✳✳ 35. Many people expect public servants who are proactive, encouraging and easy to reach.	✳✳ 20. As a fundamental human need, face to face contact should remain accessible to all in my service.	4. Care, dignity and compassion – that's mostly all people want.
✳✳ 2. People understand the need to wait, as long as the staff they meet are polite and helpful.	✳✳ 1. We can't and shouldn't be doing everything for people	✳✳ 36. Electronic media can be very powerful but when it comes to human cognition there's no match for face to face.	✳✳ 33. We are underestimating the power of interaction - like a great teacher or social worker can change a child's future.	✳✳ 11. In a digital age, and at a time when people are living longer more solitary lives, face to face contact is ever more important.
✳✳ 6. People sometimes feel like they are being ignored.	12. We need ways of allocating resources in a fair and timely manner.	✳✳ 7. People get angry when they can't talk to a real person for information and advice.	✳✳ 10. Social contact is like a vaccine: a little can go a long way.	
✳✳ 17. Expectations are growing - people increasingly expect 24/7 access to my service.	✳✳ 27. Just one inattentive or rude colleague can undermine the reputation of the whole service.	✳✳ 39. It is important we offer consistency to everyone we serve.		
3. When somebody needs our help they need answers fast.	34. When it comes to persuasion there is nothing as potent as face to face contact.			
✳✳ 8. I'm mindful that the service I deliver should offer value for money for tax payers.	✳✳ 40. People expect access to services when they need it and how they want it.			

Fig. 10.1 (continued)

> There are some people where that phone call … might be the only person they speak to that day. To me, I don't ever want to see a world where that's not part of our service… it's important and that's why I did this job … why I stayed in a local authority. (Sally, Customer Service Agent)

> I place a lot of importance in relationships; in my job, that's what I'm dealing with, that's my currency, that's why it's just about having compassion and having empathy that's all my job is sometimes. I'm that person that can say, "It's okay to feel like that." I'm listening, "I understand", or, "Thanks for calling or thanks for sharing that." … I see evidence of that in relationships being powerful. It sounds a bit cheesy but "every interaction is an intervention" … Whereas because it can't be measured in an outcomes-based way, people lose of sight of it, as an important part of teaching and social work and nursing and going to see a GP and going to the library. (Hannah, Social Worker)

This viewpoint is concerned that reforms are primarily about cost reduction but that rather than reduce costs it just moves it to a different part of the system. Social worker Hannah gave the example of an older person who stops visiting his local library once it becomes a self-service facility:

> An older person who is making the effort to go to the library, get themselves out of bed because they like that interaction and maybe they stop making the effort, and then they need more care. Once you stop doing it—the cost is still there—it is just goes somewhere else. (Hannah, Social Worker)

There is an emphasis on agency in this shared viewpoint, of the possibilities of what a professional can do if able to work meaningfully with people in some kind of need. Statement 33 helped to convey this position: "We are underestimating the power of interaction—like a great teacher or social worker can change a child's future" (S33, +4). Echoed here by this hospital consultant Adam:

> I think people remember…something that a doctor or a teacher says, it might change the behaviour, get him to stop smoking, it can be quite profound intervention in people's lives whereas you don't that from a podcast or a YouTube video. (Adam, Hospital Consultant, S33, +5)

There is also a sense here that much of their role cannot be automated or replaced with robots (s30, -4). Emma, a primary school teaching assistant, was the most worried about the idea of voice assistants being deployed in public service:

> I just feel that, especially with frontline because I think when you're dealing with people, it's just so many emotions and people are so different that what works for one person wouldn't work for another. (Emma, Teaching Assistant, 44 +5)

Viewpoint 2—Generation Now

In contrast this viewpoint (Fig. 10.2) places emphasis on a concern for the growing expectations of people for round-the-clock access to services (s17, +5), that they expect access how, and when, they need it (s40, +4). This view is coupled with a heightened awareness of the need to deliver value for money for the "tax payer" (s8, +3). The viewpoint is open-minded to a range of methods to reduce the cost of service delivery and a belief that this can mean they can expand provision or reduce waiting times (21, +5). This view states that technology can offer more contact, more choice (16, +4) that can automate the more simple parts of the service (42, +3) whilst drawing on AI to connect as well as, if not better than, humans (41, +3). As well as saving money it can also offer much needed consistency in the service and reduce incidents of poor service (s27, +4).

This viewpoint is about using technology to better manage services. Unlike other two viewpoints, it is not worried about the idea of greater deployment of voice assistants as part of their frontline communications (44, -5).

Some nine people defined this viewpoint, with the heaviest loaders mostly in managerial positions, and several involved in the deployment of new technology in the role. The factor exemplar is head of customer services in a local authority directing a large contact centre and customer service centre (Jane). There is also a business analyst (Kelly) and a head of data (Josie), all based in local authorities. Here they are all involved in managing or designing systems for staff who are relatively junior and following scripts. Staff costs remain high; there is pressure to reduce head count whilst also responding to performance metrics around wait times and customer satisfaction. This is an area of work where many

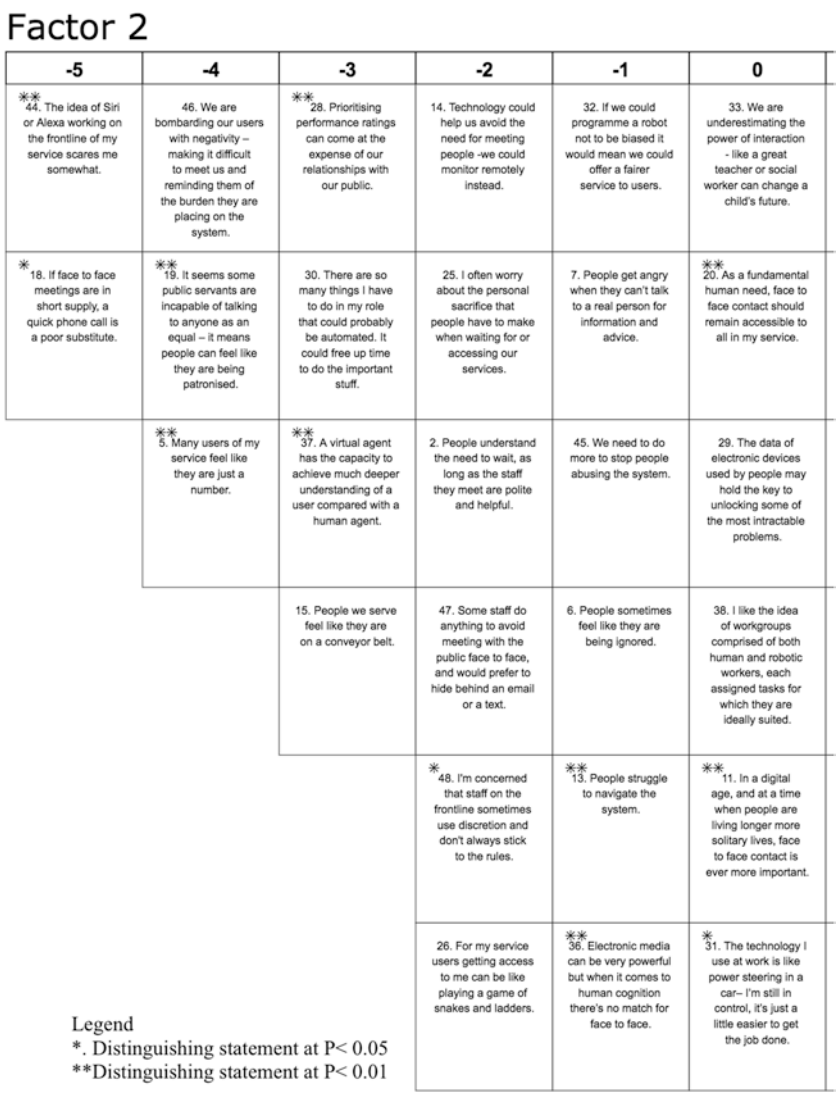

Fig. 10.2 Factor 2 grid

1	2	3	4	5
✳✳ 39. It is important we offer consistency to everyone we serve.	43. I'd welcome the use of robots or virtual agents to encourage our users to be more independent.	✳✳ 41. I'm optimistic that advances in artificial intelligence could help us understand and connect with citizens as well as, if not better than, before.	4. Care, dignity and compassion – that's mostly all people want.	✳✳ 17. Expectations are growing - people increasingly expect 24/7 access to my service.
12. We need ways of allocating resources in a fair and timely manner.	✳✳ 42. If automation is used to address simpler needs it could allow human staff to deliver the service without frequent interruptions.	✳✳ 40. People expect access to services when they need it and how they want it.	27. Just one inattentive or rude colleague can undermine the reputation of the whole service.	✳✳ 21. We should consider any opportunity to dramatically reduce the cost of our service - it could open it up to so many more.
✳ 22. We need to take steps to filter out unnecessary contact.	3. When somebody needs our help they need answers fast.	16. Technology can empower service users – offering them more contact and more choice.	8. I'm mindful that the service I deliver should offer value for money for tax payers.	
✳✳ 1. We can't and shouldn't be doing everything for people	✳ 35. Many people expect public servants who are proactive, encouraging and easy to reach.	23. We can learn from companies like Uber and adopt tools that mean people can interact directly with service providers.		
34. When it comes to persuasion there is nothing as potent as face to face contact.	9. It is important to remember calls cost pounds per transaction, whereas webchats or chatbots cost pennies.			
✳✳ 24. I think robots or virtual agents could help us offer greater choice in how, where and when people access our service.	10. Social contact is like a vaccine: a little can go a long way.			

Fig. 10.2 (continued)

technologies are already in use and companies are continually suggesting further automation. Also loading on this factor is an environmental health inspector (Sarah), at first glance an unlikely bed fellow—working in a more traditional local authority setting. It was Sarah's strong agreement with statements around the need to reduce the cost of the service and the need to offer value for money that found her correlating with senior advocates of digital transformation.

Jane sees no difference between public and private sector; we are all customers: "Whether they transact with us or they just live in the area, they are a customer of ours", and expectations are growing:

> The expectation of the customer is growing massively. I don't, today, think it's acceptable for somebody to not be able to access services 24/7. It's massive now … At 10 O'clock at night, that's the time when I've had my dinner, fed the kids … washing up is done and it's like, "Now I get on with my jobs … I recently had a brilliant live web chat, with a guy because my bath panel had arrived and it was the wrong size … and at 10 pm, it was an amazing experience, but it was when I wanted to do it. For me, if I expect that, I can make it happen in our council." (Jane, Head of Customer Services, 17 + 5)

Another statement sorted highly for exemplars of this viewpoint was a statement 21 around the need to reduce the cost of the service to open it to more. This statement has two main clauses—one about reducing cost and a second part about redistribution. Further discussion with those loading on this viewpoint places the emphasis on the first clause—and referred to a responsibility to protect the public purse, and a responsibility to the tax payer during an economic crisis.

> I probably wouldn't have picked that if I'd been in the private sector because it's not always about the cost of the service, it's about what the end result is. But here … [in local government] …, we're protecting the public purse, anything we do should be about reducing the cost of service. (Jane, Head Customer Services 21 + 5)

Sarah, environmental health inspector, promoted s21 for the following reason:

> We know the government has been in crisis over cost. I think the taxpayer is very passionate about cost. I think it is something that should be on the forefront. I think *local authorities should be more business-minded* and reduce

> the cost when they can, as well as delivering the service. So it's that balance. (Sarah, Environmental Health Inspector, s21 + 5, emphasis added)

> I like the fact that it doesn't necessarily mean that things get worse, it could be that there's other opportunities to do things better. (Jane, Head Customer Services, s21, +5)

This head of environmental services agreed: "Our residents don't want to access services in office hours—a lot of them are working and want to access our services out of office hours" (Aisling, Head of Environmental Services).

To understand this viewpoint it is helpful to contrast with somebody who takes a very different view—Keith (factor 1) places the high-priority statements at the opposite end of the grid. Here we have a frontline customer advisor who works both face to face and on the telephone in a customer service centre for a local authority. He takes the view that his service has already been through a protracted transformation process; it is denying a service to residents that seek a face-to-face interaction and that any cuts to this mode of delivery is to the detriment of service quality. He acknowledges the pressure on costs, but he takes issue with the idea of dramatically reducing as for him it signals loss of jobs:

> Obviously it's a business and it has to look at its operating costs … but what's it going to be is going to be? It's jobs isn't it?!—that's the dramatic reduction. (Keith, Customer Advisor)

He also questioned the apparent desire for 24/7 access to services expressed in Statement 17:

> We're being told that we need things 24/7. If I think back to my childhood we didn't need everything then to be open all of the time … we don't need 24 hours supermarkets, we don't need them to be open. We've got used to it, but we don't actually need it. (Keith, s17-5)

He went on to question why public agencies felt the pressure to open longer like their private sector counterparts:

> Yes, undoubtedly you will be able to find customers that say, "I want it to be open on Sunday", "I want it to be open late night". But do they? do really need it to be? If I was working full time and I really needed to do see the

> council. I'm going to do something … take some holiday, ask if I can start late. I'm going to adapt … If it's only open then that's what I've got to do. (Keith, Customer Advisor in disagreement with s17)

The position of Keith contrasts strongly with the viewpoint 2 perspective: that 24/7 access is both expected and deserved, that reduction in costs is not necessarily to the detriment of service quality and that it can offer new opportunities and ways of working.

Viewpoint 3—Human + Machine, Choice + Empowerment

This viewpoint (Fig. 10.3) shares more of the enthusiasm for technology with viewpoint 2 but with something of a different emphasis. It argues we can't and shouldn't be doing everything for people (1, +4)—but through this there is an opportunity here to empower people and offer them more choice in how, where and when they access a service (24, +5). Choice includes both traditional face to face, especially when required (34, +3), and a whole range of new contact methods (34, +3). Empowerment is key for this viewpoint: it is about enabling people to serve themselves when they can, to work with AI and related technology when it most appropriate, to foster independence (43, +2) and filter out unnecessary contact (22, +2). We have to offer value for money for the tax payer (8, +4), and make use of technology to reduce a culture of dependency.

Above all else, greater automation offers an opportunity to save and to reinvest in intensive work from public servants where required (42, +5). This is a window of opportunity viewpoint that looks to take advantage of technological advancements and post-austerity funding environment.

The defining sorts of this viewpoint included a range of senior managers: Patrick, a housing director; Ian, a customer service manager; and two managers with more of an IT focus: Josie, head of data, and Ed, a business transformation manager in his local authority's IT department. What unites these managers is they do not see what they provide as a "blue light service" (Ed, IT manager) but they've all been involved in what they see as successful transformation initiatives. Whilst there isn't a need to provide an instant solution, responses needed to be clear:

> It's about setting expectations … we're not blue light service … I think if people know that they're going to get a replacement bin in three days, yes

Factor 3

-5	-4	-3	-2	-1	0
**26. For my service users getting access to me can be like playing a game of snakes and ladders.	15. People we serve feel like they are on a conveyor belt.	*19. It seems some public servants are incapable of talking to anyone as an equal – it means people can feel like they are being patronised.	14. Technology could help us avoid the need for meeting people -we could monitor remotely instead.	6. People sometimes feel like they are being ignored.	*35. Many people expect public servants who are proactive, encouraging and easy to reach.
37. A virtual agent has the capacity to achieve much deeper understanding of a user compared with a human agent.	**3. When somebody needs our help they need answers fast.	30. There are so many things I have to do in my role that could probably be automated. It could free up time to do the important stuff.	32. If we could programme a robot not to be biased it would mean we could offer a fairer service to users.	**39. It is important we offer consistency to everyone we serve.	13. People struggle to navigate the system.
	48. I'm concerned that staff on the frontline sometimes use discretion and don't always stick to the rules.	46. We are bombarding our users with negativity – making it difficult to meet us and reminding them of the burden they are placing on the system.	**20. As a fundamental human need, face to face contact should remain accessible to all in my service.	45. We need to do more to stop people abusing the system.	**28. Prioritising performance ratings can come at the expense of our relationships with our public.
		18. If face to face meetings are in short supply, a quick phone call is a poor substitute.	**17. Expectations are growing - people increasingly expect 24/7 access to my service.	**40. People expect access to services when they need it and how they want it.	29. The data of electronic devices used by people may hold the key to unlocking some of the most intractable problems.
			**44. The idea of Siri or Alexa working on the frontline of my service scares me somewhat.	5. Many users of my service feel like they are just a number.	**4. Care, dignity and compassion – that's mostly all people want.
			2. People understand the need to wait, as long as the staff they meet are polite and helpful.	25. I often worry about the personal sacrifice that people have to make when waiting for or accessing our services.	7. People get angry when they can't talk to a real person for information and advice.

Legend
*. Distinguishing statement at P< 0.05
**Distinguishing statement at P< 0.01

Fig. 10.3 Factor 3 grid

1	2	3	4	5
10. Social contact is like a vaccine: a little can go a long way.	23. We can learn from companies like Uber and adopt tools that mean people can interact directly with service providers.	27. Just one inattentive or rude colleague can undermine the reputation of the whole service.	✳✳ 1. We can't and shouldn't be doing everything for people	✳✳ 24. I think robots or virtual agents could help us offer greater choice in how, where and when people access our service.
9. It is important to remember calls cost pounds per transaction, whereas webchats or chatbots cost pennies.	✳ 22. We need to take steps to filter out unnecessary contact.	12. We need ways of allocating resources in a fair and timely manner.	8. I'm mindful that the service I deliver should offer value for money for tax payers.	✳✳ 16. Technology can empower service users – offering them more contact and more choice.
✳✳ 21. We should consider any opportunity to dramatically reduce the cost of our service - it could open it up to so many more.	43. I'd welcome the use of robots or virtual agents to encourage our users to be more independent.	✳✳ 38. I like the idea of workgroups comprised of both human and robotic workers, each assigned tasks for which they are ideally suited.	✳✳ 42. If automation is used to address simpler needs it could allow human staff to deliver the service without frequent interruptions.	
✳✳ 11. In a digital age, and at a time when people are living longer more solitary lives, face to face contact is ever more important.	✳✳ 41. I'm optimistic that advances in artificial intelligence could help us understand and connect with citizens as well as, if not better than, before.	✳ 34. When it comes to persuasion there is nothing as potent as face to face contact.		
✳✳ 36. Electronic media can be very powerful but when it comes to human cognition there's no match for face to face.	✳✳ 31. The technology I use at work is like power steering in a car– I'm still in control, it's just a little easier to get the job done.			
✳✳ 47. Some staff do anything to avoid meeting with the public face to face, and would prefer to hide behind an email or a text.	33. We are underestimating the power of interaction - like a great teacher or social worker can change a child's future.			

Fig. 10.3 (continued)

> it's important we deliver it in three days … It's about understanding the needs and making sure that we advise people properly and not be afraid … to be honest with people. They appreciate that. (Ed, IT change manager)

This viewpoint is excited about the idea of technology helping to promote independence and offering a personalised service. For Josie she had seen first-hand how an AI based technology was being deployed in adult social care—"to keep people in their own home is brilliant for independence and adult safeguarding" (Josie, s43 + 5). Ian agreed: "It is vital we promote independence and enable residents to do it for themselves" (Ian, AD Customer services, s16 + 5).

This viewpoint believes automation offers an opportunity to target resources at the most needy. "We should be creating digital services so good (that) they become the contact of choice, thereby freeing up more traditional services for those that most need it" (Ian, AD Customer services, s42 + 5). Ed agreed, but he is less concerned if the transformation is popular with those encouraged to switch channels: he placed emphasis on "can" and "do":

> It's about understanding which people can and are capable of self serving, whether it be on the phone, face-to-face. Then where people do need our attention we have a responsibility as the local authority to help them. Therefore, by significantly encouraging people that *can*, to *do*—even if they don't necessarily like it—it makes sense. (Ed, IT Change Manager)

There are also signals in this view of a corrective, or a softening, on hard-line digital-by-default expressed in by viewpoint 2. Those loading spoke of moves to row back on earlier decisions to force people to use digital channels. But their optimism in the potential for AI-based virtual agents means people will naturally flock to them anyhow. Josie said she'd "already seen Return on Investment and improved services as a result" of AI (s41 + 5). Whilst there were optimism and faith in the potential of AI there was also a frustration that there wasn't the money available to explore (invest to save): "we don't have the time to look at the potential … We know that IT is an enabler … We know that we can pick it up slowly over time, but we haven't got the capacity" (Ed, agreeing with s30).

From Viewpoints to Prescriptions

Whilst there is some consensus around we have three distinct viewpoints: For viewpoint 1 it was its singular focus on there being no match for face to face for making decisions or offering compassion. This is coupled with a lack of optimism AI can match this. For viewpoint 2 it was a concern about growing expectations, growing demand and an optimism that AI has something to offer in this regard and a pragmatic view of solutions to address this. Viewpoint 3 does not recognise viewpoint 2's concern for expectations or desire for fast services but rather sees a role for technology to make the delivery of services more efficient, empowering people to self-serve and offering an omni-channel experience.

Both viewpoints 2 and 3 share optimism around use of technology but differ in what is motivating this need. Viewpoint 2 is somewhat dismissive of a public sector-private sector divide, it emphasises the need for greater choice and a need to respond to raised expectations. In contrast viewpoint 3 choice is more about maintaining a full spectrum of channels to encourage more people to embrace and empower themselves with technology and reduce their dependence on public service providers.

Whilst the statements are in the main evaluative rather than normative (*is* or *could* rather than *should*) when responders are asked to reflect and expand on their reasons for the most strongly felt statements—(character statements), this questioning combined with the state of flow recognised by all that have done face-to-face Q interviews—it seems to develop a deeper and lucid engagement with the concourse. This is a result of the artificial simulation of a Q sort. Rather than evaluate each statement in turn, they have had to make comparisons, to rank, reject, make decisions for spaces on the grid. It is deliberately an interactive affair.

In the conversations that followed the Q sort, these were transcribed and coded initially by the framework of four problems: *control, cost, convenience, connection*. Now given the statements were initially sampled on these criteria, it could be possible to code by statement. However this would overlook the way in which each of the statements was interpreted. Certain statements proved challenging—some questioned interviewees the wording as it made it difficult to reconcile. Several of the statements were very easy for people to allocate—depending on the viewpoint—statements about preserving face-to-face interaction, about offering value for money or statements about fostering independence (for viewpoints 1, 2, 3 respectively). Interviewees didn't want to be seen to disagree with

statements around consistency. This is to be expected. It is not a fault of the Q-set but rather it is symptomatic of simulating a grand tour in miniature, through a rich forest of views and counterviews. Those that found it easiest to complete were least concerned by how they would be judged by me or future readers. Technology experts found it most difficult as had a broader familiarity with some of the more technology-focused cards, and seemed anxious how they would come out. Librarians were by far the speediest. Experience of reading very quickly and years of sorting pieces of paper into order meant their Q sort was a sight to behold.

Table 10.3 is the result of coding the responses, first by the 4Cs and then grouping them by factor or viewpoint membership. This meant we rejected those respondents that did not load to focus on those that did. Nobody's Q sort is a perfect representation of the factor. All respondents load on all factors to a certain extent. There are some mixed views. Sarah, an exemplar on Factor 2, is there because her sort focused on the importance of adopting business principles and treating people like consumers—but she was at odds with other Q sorts in her factor for her support for face-to-face interaction.

Although this was a qualitative exercise there are some striking differences in the number of excerpts in each of the resultant 3 × 4 table. Half of viewpoint 1 excerpts around the power of face to face commented on the problem of connection. Half of viewpoint 2 commented on the problem of convenience. Whereas for viewpoint 3, there were fewer excerpts overall but they were more evenly spread across cost-convenience and control. We will return to this observation below. The full table with excerpts is provided as an Appendix (see Table 10.4).

Table 10.3 Summary table of viewpoints articulating the problems of control/cost/convenience/connection

	Viewpoint 1: Power of F2F	*Viewpoint 2: Gen Now*	*Viewpoint 3: H + M Choice Empower*
Control	Human flexibility	Robots don't have bad days	Data informed intuition
Cost	All service is necessary	Business like	AI = ROI
Convenience	Remain accessible	24/7 the new normal	Realistic expectations
Connection	No substitute for emotional connection	Personalise, pre-empt	Interaction basis of humanity

With regard to control, viewpoint 1 argues people are unique and services need to be tailored. Robots offer something too ridged, too automatic. Scrutiny of our practice has increased but we need to retain a service that has freedoms to reflect the humans we serve. Whereas viewpoint 2 argues people have bad days, robots don't. People struggle with mundane repetitive tasks—so automation is preferable. Services need to be more business-like; bad press spreads. For viewpoint 3 it is a matter of carefully judging who is and is not capable—and then responding accordingly. It is about empowering frontline agents to make judgement when necessary. It is about drawing on all available data to make us as efficient as possible. Human agents struggle and get bogged down with the emotional side of their work, and we need to recognise their weaknesses and act.

With regard to cost, for viewpoint 1 there is no such thing as unnecessary contact; who has a right to decide this? We're here to help people and we do. It can mean that we are too welcoming of dysfunctional users; it can mean we are too paternalistic and we could do more to encourage people to take responsibility. There is little money around, but factor 1 doesn't fully trust the claims around savings; to jump to automation could be a false economy and bring additional risks to safety. By way of contrast for viewpoint 2 technology-based self-service fosters independence. As tax payers fund these services cost is utmost priority—budgets are and will remain tight—but can also be more business-like—encouraging people to take more responsibility. It means universal services we have grown used to will become a thing of the past. When we seek to transact with public agencies we are not here to talk; we are here to support those that cannot self-serve. Viewpoint 3 echoes viewpoint 2's position on fostering independence and suggests there is so much we can learn from retail. Being compassionate to one person is at the expense of all. It is a process of adaption for staff—new ways of working to find the alternatives that technology offers us. As AI develops government can be confident it will give us a good return on investment.

In terms of the problem of convenience, viewpoint 1 recognises a growing expectant culture, a consumerist attitude, fussier or impatient service users, but this is a reflection of how services have been reformed. We continue to facilitate access to our services—but we don't need to rush to 24/7 or weekends in order to be accessible. Whereas for viewpoint 2 not only is the lack of 24/7 access not acceptable, it is frankly embarrassing. We need to consider also the next generation of service users who will expect even more. So much can be automated. The need for human interaction is exaggerated; the right answer is more important than seeing a human who may, or may not, be able to help. Some people prefer

non-human interaction and some outright fear it. There is technology coming down the track we can only dream of. Even news of the most sensitive nature (e.g. medical test results) could be better shared remotly, through text or sms, and with follow-up support if required. What we currently offer in 20 minutes could for most be done in 2 minutes. So much of the service we currently deliver is a failure to automate, to offer alternatives and to predict.

Viewpoint 3's position on the problem of convenience is all about making automated services as simple as possible. People have high expectations—often unrealistic—this is propagated by the idea that we are servants. It is about being realistic with what we can offer. It is not about rushing to make everything 24/7. We are not the same as a supermarket or a petrol station.

Finally, on the problem of connection: Public service is about making a connection—to listen, a pat on the back, a rub on the shoulder, a wink, a glance. It is about giving people a chance to talk, to be open, to interact, to be heard. It means a level of emotional connection a robot or virtual agent cannot achieve—to move too far towards becoming faceless computers would be a sad development and there exists no substitute. For viewpoint 2 face-to-face service should be retained if there is need to encourage people to open up. It should be about presenting a genuine interest in the interests of the customer. AI technology stands to personalise services and oftentimes preempt problems before they even occur—which is a win for everyone. Activities to encourage connection between public services and customers should be formalised and measurable rather than be ad hoc and under the radar. For viewpoint 3 people deserve to be treated with compassion and dignity and social interaction will always remain the basis of our humanity.

Conclusion

Although difficult to pin down, the idea of AI means identifying new areas of decision making in public service not previously automated. The datafication (Mayer-Schonberger and Cukier 2013) of encounters and transactions in frontline public service is both a help and a hindrance. Whilst such data may hold important insights, opportunities to personalise or predict, it also presents a growing challenge for analysis. The idea of AI has endured several cycles of boom and bust—always, it seems, on the edge of a major breakthrough and then dramatically falling out of favour. For the timebeing the idea AI is articulating the future of public service. The burgeoning industry is adapting tools and solutions which are subtly redefining

perennial problems of public policy. Whilst the idea of technology is helping public managers maintain control of their processes and staff, to manage costs and find efficiencies, or to offer convenience and meet consumerist expectation, the idea of AI is offering this and more. It is the promise of overcoming a problem of connection. It is the idea of developing agents that can sense emotions, respond appropriately and continue to learn and adapt. The case of Amelia was intriguing. It promised much and became a victim of robot-hype when reported in the media. But the intention is worth taking seriously.

Chapter 1 introduced three questions—two what extent are we witnessing the rapid emergence of a frontline role for AI in the public services? AI, broadly defined as algorithm-based technologies mimicking human thought to solve complex tasks, incorporates some autonomous agents but a great deal of virtual and physical agents working with humans. The two types of AI-related technologies that grab the headlines are either creepy/cute humanoid robots or mysterious/opaque decision making algorithms that prioritise or discriminate. But I think we need to take a broader view. The structure of the chapters was deliberate, to ensure we recognised some of the less glamourous or controversial changes in public service. Our face-to-face transactions are quietly being mothballed, and those that remain are subject to datafication. Our remote contact is being automated aided by speech recognition and text analytics. Self-service will be a mainstay of frontline service for years to come but further advances in mobile connectivity (5G) and face recognition will find further ephemoralisation from the physical to the virtual. The chapter on social media demonstrated that digital communication comes with varying degrees of authenticity. The considerable investment in ever more sophisticated robots to work with, for, or in place of our public servants shows no signs of slowing. Across health, education and social care the supply of professionals cannot keep pace with growing demand. Governments are pinning their hopes on the potential for these devices to make up for that shortfall. All this is being introduced into an existing workforce where three distinct viewpoints need to be considered, listened to and accommodated. These factors move us on from general utopian-dystopian assessment and methodologically offer a means to engage public servants in meaningful conversation about the future.

Appendix

Table 10.4 The problems of control/cost/convenience/connection, by viewpoint

Power of F2F	*Generation Now*	*H+M Choice and Empowerment*
Control "people are so different that what works for one person wouldn't work for another person. But if Siri or Alexa decided; well this is the answer…"(Emma)."we're trying to tailor to people's needs …the idea of a robot being all automatic doesn't work because of the nature of my role is very much about communicating, interacting, and observing behaviour""The thing is we're not necessarily aware when we're being recorded now. Now people are walking around with the ability to do that without even knowing…imagine the likes you can get for that. We're in a society of likes" (Keith)."I am not really a big fan of rigid rules and rigid pathways and algorithms, but how things should be done. Probably there is a role for guidance, certainly. There's a role for those things to raise the system, raise the lowest standard, but there also needs to be some freedoms to deviate from guidelines because you're not dealing with a binary thing, you're dealing with people" (Adam).	"If a lot of things are automated, you get consistency. Whereas, with a member of staff they're going to have a bad day or they don't leave their personal problems at the door. Whereas, they could be a really good member of staff 19 days out of the 20 that month, that 20th day could make all the difference" (Jane)."think public services should be looking to be more business-like. If that means adopting—I mentioned Uber there. If it means adopting tools and technology to help with that, then I think we should" (Sarah)."bad press spreads…We really do represent the council so it's up to us to do a good job" (Kelly)."We shouldn't differentiate. …I believe in equality. … I think we should offer everyone the same service … a consistent good service" (Kelly)."Generally, with some repetitive stuff people make mistakes. It's better to automate those things" (Eileen).	"so it's understanding which people can and are capable of self serving, whether it be on the phone, face-to-face. Then where do people need our attention we have a responsibility as the authority to help them" (Ed)."The whole empowerment agenda…requires staff on the frontline to use discretion" (Ian)."now with technology and the statistics that come from everything is measured now and it's become much more important. We just need to be more efficient" (Michelle)"We have conversations to say you know you are actually taking a long time over something that's relatively simple, … they might say I find it really difficult to control a conversation when Mrs. Brown starts telling her gammy leg" (Michelle)."As in any job, a lot of things about personalities, isn't there? And people work at different speeds and do things the way we wouldn't do" (Michelle).

(*continued*)

Table 10.4 (continued)

Power of F2F	*Generation Now*	*H+M Choice and Empowerment*
Cost "If people want to contact you, they want to contact you, don't they? Who are we to decide what's necessary and what's unnecessary?" (Davina)."it's difficult, isn't it. Are we more important than Social Services? Probably not" (Davina)."there's a significant proportion of people that are using the system to satisfy dysfunctional behaviours like seeking medication, seeking medical attention for their own gratification and stuff like that. We're not very strong on discouraging or preventing that" (Adam)."that people should be taking a little bit of responsibility for their health. I suppose we operate a slightly paternalistic model, and we're telling people you should eat healthfully, come to your appointments and you shouldn't smoke, but maybe we should transfer some of the responsibility for those things back to the patients" (Adam)."our budget being squeezed like a lemon. At the same time, it does tend to just take the human element out of it" (Kath)."It's awful, at the moment. I think it's just got worse and worse. … There isn't that much choice" (Catherine)."I think technology could help to monitor people …it would save money, …but the cost, financial and human costs of missing something because you've just relied on technology could be quite dangerous" (Catherine)."I often wonder where these figures come from. Is it that drastic of a saving" (Keith).	"We're all about self-serve because it's about speed and people aren't waiting in queues. We should look at virtual agents that will encourage people to be independent" (Jane)."we're protecting the public purse, anything we do should be about reducing the cost of service" (Jane)"I think the taxpayer is very passionate about cost. … I think local authorities should be more business-minded and reduce the cost when they can" (Jane)."We are not doing any people any favours by continuing to do everything for them… We weren't helping…just doing it all, people just needed to take some responsibility" (Wendy)."Particularly around the robotics and that sort of thing. I suppose thinking about it, that's the next step, isn't it? … we have a limited budget, which is constantly shrinking, … We can no longer, sadly, in some respects, offer that very broad universal access. And a lot of people can and are happy to get on with it do it themselves.We need to support that and give them more and more, we need to support people to become more independent" (Wendy)."A lot of time we don't have time to come down and see you, because there's people waiting at the phone call waiting, … another person waiting to speak to us. We can't come down and spend 10 minutes to spend face to face" (Hugh)."I had someone this morning who asked if I had a brew on the go, yeah, oh good cos I've got one on the go so we can have a talk. But I was like 'but I'm not here to talk'(Hugh)."Before you even speak to us, it's like 'Go online, go online, go online, go online.' Stay on the phone if you want to speak to us, but go online and you can do it online yourself" (Hugh)."For me, it's about meshing the need for personal contact with technology, because we do not have the resources at this point in time to do it all face to face" (Wendy).	"you look at the retail sector in terms of the advance in technology and you realize that you can learn so much" (Ed)."We're looking at timings, because as while it's nice to, as I said before, have a little chat with people. It's also not nice to sit there for half the morning seeing one customer" (Michelle)."You've got to be able to actually control the conversation … because while you're doing all the niceties somebody else is picking up all the other people that waiting and it costs" (Michelle)."the early days when we started it they'd be pulling up a chair next to them and virtually doing it for them…if you are floorwalking shouldn't be with a customer pulled up in a chair" (Michelle)."it comes out quite a lot in discussions and things about how expensive face-to-face is compared to …the phones. There's cheaper ways isn't there" (Michelle)."AI programmes have already seen Return On Investment and improved services" (Josie).

Convienience

"We fill in the forms, we give them the forms, we help them fill the forms" (Kath)."so people come in and they say, 'I can't queue that long for citizen's advice. I'm not waiting an hour for a free service!', a voluntary free service! They think it's outrageous to wait. To me, I'm like. 'It's free. If you need the help bad enough you'd wait!'" (Sally)."think there is a level of expectancy. … some people are all too happy to accept to be spoon fed all the time…an expectant culture" (Sally)."I think generally we're quite accessible…We're very tailored to people's needs" (Catherine)."getting an answer fast when people have a question? Some people do, but not always. If there's crises and then there's just your day to day work" (Catherine)."People might be more expecting you to be a little bit easier to reach than before but I'm not sure if it's changed that much" (Catherine)."Yes, undoubtedly you will be able to find customers that say, 'I want it to be open on Sunday', 'I wanted it to be open late night'. but do they? do really need it to be? Cos They can get on a phone while six""I think the service has adapted and should adapt to technology" (Keith)."Certainly I see that kind of more consumerist attitude, amongst patients and service users that I see, and also we know that from students and things they were treating their education a little bit more like a consumer because we showed again, value for money" (Adam).

"I don't, today, think it's acceptable for somebody to not be able to access services 24/7" (Jane)."My own child at nine…I know a lot of children in her class who've got an iPhone …Their expectation in the future will be no email, no face-to-face, everything will be on an app on a smartphone. If they want to report a bin, it has to be on an app" (Jane)."We have situations where there's a set of standard rules … So we have automated it—because why do I need somebody to go, "Hold on, yes it ticks that box … as a consumer of that service, I can literally, get it" (Eileen)."Some people have a real fear of speaking to people on the phone, but they're quite happy to do a webchat with you" (Jane)."Technology, I think, offers a range of options that we can only start to dream of at this point in time. It's about offering the right kind of contact, isn't it? People need the contact but it doesn't always have to be the traditional way. And there may be ways of providing by virtual reality or whatever the feeling of the same experience as sitting and talking to somebody" (Wendy)."sometimes you can get through to somebody. Depending on who they are, you don't actually get any further forward. I don't think it's always they're angry because they can't talk to a real person. It's because they haven't got the answer they want quick enough. … they could get the answer automated, what would make them angry is whether they get the right answer or solution" (Jane)."I think a lot of the moans and groans I get when I deal with the public, is that they find this hard to reach. I wonder sometimes whether an automated response would help" (Sarah)."24/7 access to service… I think that's something the public want. I don't think the public sector provides it" (Sarah)."it's got to be driven by what the customer wants. Maybe, if you've got the robots and things working behind the scenes, they can give that service without staff having to be in the weekend, … maybe that could work" (Sarah).

"think our IT has made them as simple as you can. I mean having said that it's but obviously some people learn to struggle with things but the things that self I think is the forms are easy enough I think that we do enough testing and we made them literally as simple as we can" Michelle"it's a drop-in and if they walk in the first in it and say how long am I going to wait?. …I've got to go somewhere else in 10 minutes…people are very precious with their time" (Michelle)."They come in with any number of things that aren't even council related. Literally walking in that door and think we'll know everything" (Michelle)."Am I a public servant? No.But yes, I suppose … yes I am a public servant. To some that terminology almost makes people think that you are there to serve them and then it's their expectations of you" (Michelle).

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Table 10.4 (continued)

Power of F2F	*Generation Now*	*H+M Choice and Empowerment*
"I think parents have become fussier. That sounds an awful thing to say, but I think sometimes social media hypes things up. They'll put something on social media. I've seen it… parents from school …. They'll put something on social media, little Johnny as, "This has happened today". I'd be straight on to the school and do, do, do" (Jill).	"so if I had some results or something and it's a bit of bad news, would I rather…wait two weeks to talk to somebody about it, or would I rather have the information and then they send as part of that whole bunch of support material—I think I'd rather that. I'd rather have the information, I'd rather—If you urgently want to talk to anybody, you can set them up a phone call, or set them up that kind of thing. But then here is a link to a website, here is all your stuff about what's going to happen next, what you might expect, here is a whole bunch of information" (Eileen)."For some people, then they actually just need a two-minute conversation, as opposed to a 20-minute face to face" (Eileen)."I'm still gobsmacked. We operate nine to five Monday to Friday. We close early on Fridays and we think that's okay" (Eileen)."I find citizen quite offensive, but even resident is a bit odd, because I could wear lots of hats. The reason we use customer is that, although it might just be to service to a specific need, if you think about people differently, and if you think about yourself as a customer, what does good look like? The model is different. So even if I can't go to somewhere else, why wouldn't I have something amazing, something that exceeds my expectations?" (Eileen)."People are only coming to customer for failing demand—contact the council for failing demand.Why is that? They shouldn't that be contacting in the first place? Wouldn't it be great, if on the whole, you really didn't have to engage with the council at all?" (Eileen)."I think customers do want to be able to get hold of you, or get information at any time. They certainly did not want that in the past. When I first started, they had the High Street open, and people would just wander in there for a chat. They literally would. Whereas now, people expect—They want that answer whether it's the phone answered straight away, whether it's the web chat answer straight away, or it's 24" (Kelly).	"People may need different responses but not necessarily 24/7" (Patrick).

Connection

"No, no, no. I want to come in and see you…It's a social thing" (Kath)."people want to know that they've been listened to…that you cared" (Davina) "We offer a lot of reassurance, a lot of calmness" (Davina)."a lot people even youngsters say, it keeps people in jobs than going to robots where they'll start getting rid of people" (Danielle)"Even a phone call isn't good enough for me because you can't see what the facial reaction is" (Shona)."For goodness sake, I don't want to talk to this automated service. I want to talk to somebody" (Shona)."We all need to give somebody a little rub on the shoulder. Then they know that you're thinking about them… I used to wink at people. Yes, I'm a professional winker" (Shona)."It can't necessarily pick up on emotion, and even if they can it's not the same because you're not getting the same response. The robot can't ever give you what a human can" (Sally)."Although we all use skills and knowledge to do our specific jobs, fundamentally at the bottom of it all is a caring profession" (Catherine)."If that person, and there are many of who are solitary. If what they have as a town is a faceless computer running everything, and nobody coming out because we're all plugged into our…phones" (Keith).

"we try and have a genuine interest in that customer. …Without that customer, we wouldn't have jobs. We are here to service the customer." (Jane)."I just think people will open up so much more if they're speaking to another human being. Then, I suppose, sometimes they may have not even know" (Sarah)."care, dignity and compassion. I think we've got a duty to do that. Yes. Customer service is so important" (Sarah)."They are using AI in sport to pre-empt injuries to their players. … If a player gets injured, big money, … gathering the data and using the artificial intelligence on top of it they can then work out who to put on the bench" (Eileen)."There is still a very real need for human contact and that is one of those soft things that library services provide, around human contact, … my team are planning and executing are programs of social interaction" (Wendy).

"Our most vulnerable citizens require us to treat us with care, dignity and compassion. However, why should anyone else require less from us"" (Ian)."Social interaction will always be the basis of our humanity" (Ian).

(*continued*)

Table 10.4 (continued)

Power of F2F	*Generation Now*	*H+M Choice and Empowerment*
"the least you can do is be civil to somebody, let them know that you're listening as well. Let them have a read of what you've written down" (Nick)."they'll make an effort to come here and perhaps that's because they always have done and they always will do"(Nick)."People are now sat in their house independently, on their own, not having no social contact I think that's really sad" (Helen)."Children, as they're growing and they're massive sponge taking everything in and need a lot of varied opinions. If you just kept a child in one house, it would crush them …you need lots of different teachers" (Helen)."we have empathy and we have chemistry with a person… a robot can't" (Hannah)."If you're sharing something with me and I'm quiet but my body language is open" (Hannah)."there's currently no substitute for sort of human to human interaction" (Adam)."My daughter, she openly tells me. She says, 'I don't like people.' That's all there is to it. … She'd much sooner be texting them or messaging them … but I think for my generation here, there'll still be the need for people to come in and see us, even if it's just to have a moan at a person" (Nick).		

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