

THE FOURTH INDUSTRIAL REVOLUTION, HUMAN SKILLS, AND ONLINE LEARNING: NOTES FROM THE HIGHER EDUCATIONAL EXPERIENCES OF POLICE OFFICERS

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This article describes how the blended format of a higher education program initially designed for police officers supported the nurturing of human skills, such as creativity, collaboration, problem solving, and critical thinking, which are increasingly seen as essential in 21st century workplaces. The article begins with a discussion of the Fourth Industrial Revolution and how the impacts of automation, artificial intelligence, and the Internet of things, among others, are compelling reevaluation of non-cognitive or human skills. Then, the article explores the evolution of the educational program at the University of Guelph-Humber, in Toronto, Canada, and outlines how by-products of the program were hallmark liberal arts skills, such as critical thinking, research, analysis, and communication, which were seen as valuable to police work. Third, it highlights some of the specific impacts of increasing technological inputs such as artificial intelligence, crime mapping, and predictive policing algorithms on everyday community policing. Finally, the article correlates how, perhaps counterintuitively, blended or hybrid and online education can create learning environments to nurture the human skills to respond to the workplaces of the future.

KEY WORDS: online education, human skills, police, higher education, soft skills, professionalization

1. INTRODUCTION

In this article, I offer a speculation on the skills and competencies that will be valuable to adult learners in the unfolding 21st century, both within and beyond conventional institutions of higher education. First, I begin by elaborating discussions about the advent and impact of artificial intelligence (AI), automation, robotization, and the Internet of things (IoT), sometimes collectively described as the Fourth Industrial Revolution. Second, I dissect some of the research on how cognitive and non-cognitive skills are affecting employment as this revolution unfolds. Importantly, non-cognitive skills, variously labeled as soft or human skills, rather than receding in significance under the onslaught of algorithms and robots, are proving to be still and perhaps even more valuable. Third, to offer contextualization, I offer some findings from my research on adult learners, specifically on the higher educational experiences of the municipal police service of Toronto, Ontario, Canada, namely, the Toronto Police Service. A range of researchers has tried to specify the potential knowledge- and skill-related benefits of higher education for both police officers and policing services. Paterson (2011) built on a body of work that suggested university-educated police officers develop more flexible value systems (Guller, 1972; Hays et al., 2007) and greater confidence, tolerance, and self-esteem as well as broadened outlooks (Lee & Punch, 2004). Edwards (2019) surveyed municipal and county police officers in Tennessee and determined competencies that emerge from criminal justice higher education, including knowledge of law enforcement practices and ethics and improved verbal communication skills, are valued. Hallenberg and Cockcroft (2014) reported police members seeing improved critical thinking and writing skills as a result of higher education, while Rydberg and Terrill (2010) suggested that the completion of higher education results in police officers using force less often. In terms of specifying the value of higher education to police organizations, Blakemore and Simpson (2010) suggested a number of criteria, including creating a more “reflective practitioner,” supporting equal employment opportunities, developing a “learning organization” and “value for money” (p. 34).

I contextualize and expand these discussions of the value of higher education with an elaboration of what I am calling human skills in everyday police work, which like other workplaces are experiencing the impacts of artificial intelligence, algorithms, and data analytics. Finally, I conclude that educators concerned about their learners' continued employability in the short and long term, consider pedagogies that will deepen the human capacities of their students in order to better prepare them to thrive in the Fourth Industrial Revolution.

2. WELCOME TO THE FOURTH INDUSTRIAL REVOLUTION

As we approach the third decade of the 21st century, we are already seeing the impacts of the Fourth Industrial Revolution (Marr, 2018). From artificial intelligence to the Internet of things (Meola, 2018) and increasing automation and robotization of job skills and tasks to three-dimensional printing technologies of living tissues and organs, we are moving past the Third Industrial Revolution, which involved mass computerization, to the fourth, where we see the confluence and synergy of physical, biological, and digital systems and spheres (McGowan, 2018; Schwab, 2016). Moreover, like earlier industrial revolutions, our educational and work systems and processes will be profoundly affected. If the First and Second Industrial Revolutions saw the rise of an industrial, manufacturing economy, and the third saw the emergence of a knowledge-based industrial revolution and the concomitant expansion of higher education to develop the required technical skills, the Fourth Industrial Revolution, with the impacts of automation, robotization, and artificial intelligence, is transforming the workplace in a variety of ways. These include transformations variously described as the rise of the gig economy and the growth of “alternative work arrangements” (Katz & Krueger, 2019); the growth of precarious employment; the unbundling of skills and tasks, where digital platforms allow work to be separated into piecework (van der Elst, 2019; European Commission, 2018); and the “polarization of job opportunities,” where once good, middle class jobs that are routine and repetitive are being squeezed out by automation (Autor, 2010; McGowan & Shipley, 2018). Within this reality, future-of-work strategist Heather E. McGowan argued that “Our educational model of codifying and transferring set skills and existing knowledge to create a deployable workforce simply no longer works” (McGowan 2018, para. 3).† Yet, in addition to the vast range of technical skills needed to design and engineer the software and systems of the Fourth Industrial Revolution, what other skills and competencies will be valuable? Moreover, if machines and robots will do more and more work, what skills will humans need to out-compete, collaborate, and/or thrive in the Fourth Industrial Revolution? It is to the elucidation of this to which I now turn.

3. IDENTIFYING DESIRABLE SKILLS AND COMPETENCIES TO THRIVE IN THE FOURTH INDUSTRIAL REVOLUTION

The futurists' laundry lists of desirable skills for the 21st century are varied. The World Economic Forum, as part of their list of the 16 skills, included six foundational literacies (literacy, numeracy, scientific literacy, financial literacy, cultural and civic literacy, and literacy in information and communication technology); four competencies (collaboration, creativity, communication, and critical thinking/problem solving), and six character traits or aptitudes (curiosity, initiative, perseverance, adaptability, leadership, and social and

cultural awareness) (Soffel, 2016). Moreover, in its Future of Jobs Report top ten skills for 2020, the World Economic Forum lists complex problem solving, critical thinking, and creativity as their top three, followed by people management, coordinating with others, emotional intelligence, judgment and decision making, service orientation, negotiation, and cognitive flexibility (Soffel, 2016). Many of these skills have been identified by others. For example, Samson (2013), in speaking of “highly human jobs,” argued that in the face of automation and artificial intelligence, we should pay greater attention to developing our “highly human” skills, which are “skills that are too quirky, unpredictable, emotional, or intuitive to program or automate—skills like perceptiveness, awareness, responsibility and caring” as well as creativity and “subjective decision making” (2013, pp. 30 and 34). Interestingly, these human skills are non-cognitive skills that are better rewarded, especially when coupled alongside certain technical skills. In dissecting an Organisation for Economic Cooperation and Development (OECD) Survey of Adult Skills, Grundke et al. (2018) explored how cognitive and non-cognitive skills are rewarded in digitally intensive industries. These industries run the gamut of advanced manufacturing and service sector activities, including finance and insurance, legal and accounting, scientific research, public administration, arts, entertainment and recreation, as well as computer and electronic equipment, machinery, trade and repair of motor vehicles, wood and paper products, printing, and publishing (Grundke et al., 2018, p. 32, n. 4). The non-cognitive skills surveyed included readiness to learn, creative problem solving, managing, and communication and self-organisation. Grundke et al. (2018) submitted that, “for workers in digital intensive industries, bundles of skills are particularly important: workers endowed with a high level of numeracy skills receive an additional wage premium, if they also show high levels of self-organisation or managing and communication skills” (p. 6). Building on the work of Autor (2010), Grundke et al. (2018) pointed out that while “computers substitute workers in routine tasks,” they “complement workers in more complex, non-routine tasks involving problem-solving or communication” (p. 8). This illustrates the potential of how humans can work alongside with machines and robots rather than being replaced by them if they have those highly human skills, as Samson (2013) and the World Economic Forum (2016) have indicated, such as problem solving and communication. Relatedly, Deming (2017) argued that where the U.S. labor market has seen employment growth is in occupations that demand high levels of both math and social skills. In contrast, “employment has declined in occupations with high math but low social skill requirements” (Deming 2017, p. 5). Moreover, “workers with higher social skills are more likely to work in social skill-intensive occupations, and that they earn a relatively higher wage return when they sort into these occupations” (Deming 2017, p. 29). As such, we see again the demands and rewards of human social skills, which include leadership, motivating others, reading body language, and organizing—skills that are integral to the

desirable character traits or aptitudes that the World Economic Forum describes for the 21st century.

This valuation of human skills also (re)confirms the value of the conventional benefits of an arts, humanities, and social sciences education, typically known as a liberal arts education, where identified learning outcomes of courses include problem solving, creativity, collaboration, communication, empathy, interpersonal skills, and critical thinking, to name several. This recognition has fueled the emphasis from merely science, technology, engineering, and mathematics (STEM) to science, technology, engineering, arts, and mathematics (STEAM), with attention to combining (liberal) arts learning with that of science, mathematics, and/or engineering. Presaging the McGowan (2018) study on redesigning our higher education models, Madden et al. (2013) described the efforts at the State University of New York at Potsdam to design and implement integrated STEAM curricula. Its goal is to develop creative scientists through a redesigned higher education program with faculty involvement from sciences, mathematics, music, theater, and visual arts. It would incorporate opportunities for students to design their own curriculum of at least two different fields of study in consultation with a transdisciplinary group of faculty and features inquiry-based learning with a real-world internship component. The intention is in part to “cultivate dispositions related to creative problem solving” but with the recognition that “the prospective career path for students is unknown,” the value lies in the intended ability of students to be able to generate interconnections within and across diverse disciplines and tolerate ambiguity (Madden et al., 2013, p. 342). Penprase (2018) explored the impacts of higher education by the Fourth Industrial Revolution, noting that the mass computerization that characterizes the Third Industrial Revolution has resulted in online and distance education learning and mass online open courses (MOOCs) (Waldrop, 2013). However, Penprase (2018) outlined, like the STEAM curricula at SUNY Potsdam, other efforts to embed “liberal arts and interpersonal skills within a more interdisciplinary curriculum” (p. 213). Penprase (2018) cited United States initiatives that, like STEAM, offer more student capacity and self-direction as well as social interaction in learning, including liberal studies in engineering (Bucciarelli & Drew, 2015) and the Project Kaleidoscope science project (Elrod & Kezar, 2016). Taken together, non-cognitive, highly human skills (such as creativity, problem solving, and communication) and social and cultural awareness coupled with desirable cognitive skills (such as numeracy skills exemplified by mathematics, science, and engineering) show where comparative educational and employment advantages could lie for future adult learners and workers. However, to help make all of this more concrete, I will now focus on the higher educational experiences of one group of adult learners that I have studied, members of the Toronto Police Service.

4. HUMAN SKILLS IN EVERYDAY POLICE WORK: THE TORONTO POLICE SERVICE'S EXPERIENCE WITH HIGHER EDUCATION

I draw on research conducted over a two-year period in 2016 and 2017 into the Toronto Police Service's experience with higher education. The Toronto Police Service (TPS) consists of approximately 5000 members and is the largest municipal police service in Canada. In the early 2000s, the TPS was looking to partner with a higher education institution to respond to the perceived lack of credentials among its senior personnel. In addition, like other police services elsewhere, it was seeking to enhance its professionalization and credibility in the public realm (Deckha, 2020; Christopher, 2015; White & Heslop, 2012). To support these goals, the TPS sought an accredited higher education pathway that was flexible enough to accommodate the working schedule of its members. It settled on forging a partnership with the then-nascent University of Guelph-Humber, in Toronto, Ontario, Canada, which was established in 2002 as a partnership between the University of Guelph (roughly an hour outside west of Toronto) and Humber Institute of Technology and Advanced Learning, Ontario's largest polytechnic college (Burt, 2007; Hanna, 2016). The University of Guelph-Humber was the first institution in Ontario to offer students the opportunity to earn a university degree and a college diploma in four years. Since its founding, the university has focused on developing a small group of undergraduate programs that have expanded from initial face-to-face offerings to include blended and online options and versions. One such program is the Bachelor of Applied Arts (BAA) in Justice Studies, now in Justice and Public Safety, originally designed as a degree completion program for justice studies professionals.‡ Significantly, the BAA, with its blended pedagogical design that incorporated two intensive weekend sessions and six weeks of online learning, was ideal for educating police officer cohorts, who could study while continuing with their work duties. The program operated in fall, winter, and spring/summer semesters; since 2020, the latter semester is being delivered completely online.§

As part of my research, I interviewed three different, yet salient, constituencies: Group A, comprised of educational administrators; Group B, consisting of Toronto Police training and development staff; and Group C, composed of 20 TPS members who had pursued and completed an undergraduate degree. Findings from Groups A and B have been discussed elsewhere (Deckha, 2019a; Deckha, 2020). Designed as semi-structured interviews that were held in person and audio-recorded, Group C interviewees were asked the following questions:

1. Why did you pursue a degree program?
2. How did completing the program affect how you performed your duties?

3. How has completing the program led to new opportunities, challenges, or promotions in the TPS?
4. A significant number of your TPS colleagues have completed a degree. What do you think the impact has been on TPS as an organization?

These interviews were transcribed, and then using the nVivo software program (Edhlund & McDougall, 2016) they were reviewed, assessed, and coded.

As part of the BAA curriculum at the University of Guelph-Humber, students took courses in sociology, gender studies, criminology, organizational behavior, and others whose learning objectives included developing critical thinking, research, analytical, writing, communication, and problem-solving skills. One student described the program's benefits as follows:

[B]roadens your way of thinking in terms of, like in terms of understanding what's out there, in terms of understanding people. You know what I mean? Like you are in the moment. You are dealing with people constantly. You don't necessarily understand underlying factors and you don't really understand ... Like a lot of the Psychology came into play at it was really good. Like the Sociology courses to explain behaviour right? ...

And then also what I found really beneficial was the Organizational Behavioural piece because it really taught you to look beyond the scope or the basics of why an organization does something, and it sort of teaches you to think of like a long-term future benefit, which we don't always see at the time that something happens. (C11, September 2016)

These outcomes were supported in both face-to-face and online learning environments, through the use of case studies, debates, group presentations, collaborative research projects, individual essays, and weekly online discussions, posts, and reflections.

Interviewees described the impact of their education as “caus[ing] anyone to assesses things differently, think a little bit differently sometimes” (C1, August 2016). This shift is one of perspective or mindset. It means a displacement of a habitual, occupational framework, where “we as police officers, especially as the generation of when I got on the job, tends to be kind of black and white. This is it. These are the rules” (C1, August 2016) to a perspective or mindset in which police consider the social problems and perspectives of the larger public who are being policed. C1 continued to describe that:

Many victims and complainants are perhaps from the margins of society. Definitely from the margins of society, so I think it helps to consider their perspective and their experience in some circumstances of how they're all about how they live and survive

and how that existence sort of allows them to exist or not coexist with society. (C1, August 2016)

This shift allows officers to expand and deepen perspectives and make considerations in their judgment that their colleagues may not. It reflects the vital, 21st century traits such as service orientation and cognitive flexibility that the World Economic Forum indicates as highly desirable (Soffel, 2016). Moreover, C14 contextualized higher education learning with improving a range of human skills that are highly valued in policing, explaining:

Well we're problem solvers, that's our job. We get called to whatever situation because they have a problem they need assistance with. Whether it's a person in emotional or mental health crisis and they need assistance with that, police are called to that, whether it's a violent crime taking place and we need somebody to intervene and resolve that, these are all things we are called to. So you have people who are, have better skills, they're gonna have better results in resolving these situations, these problems. (C14, 2016)

Importantly, C14 identified the highly human skills—from problem solving to interpersonal communication, emotional intelligence, and empathy—that are highly valuable in policing. Moreover, with the onslaught of the Fourth Industrial Revolution and the impacts of automation, artificial intelligence, and robotization on the transformation of work we discussed previously are job losses, social upheavals, and community breakdowns that may destabilize human communities (Anderson & Rainie, 2018). While police work is increasingly supported by predictive tools (Angwin et al., 2016; Loeb, 2018; Wang, 2017), as discussed subsequently, the essential human work of policing communities amid accelerated social and technological transformation will likely be even more paramount. Echoing C14 is C7, who explained:

But the reality is that the demands for higher education has been in everything from dealing with the mentally ill, to dealing with social problems and trying to divert policing attention to issues in a way that we steer people to the right support agency. And the education that has been happening has helped to change a few mindsets that I am aware of. They don't see the person with intentions that are criminal, but rather, it is more of a reflection of how they see things as a societal challenge. (C7, 2016)

C7 articulated the social acumen that Samson (2013) spoke of—responsibility and caring—as well as the civic literacy and social and cultural awareness identified in the World Economic Forum's list of competencies that students should have (Soffel, 2016).

5. DISCUSSION

Millar et al. (2018) argued that:

[p]olicing requires officers to adopt many different roles and attitudes in the course of discharging their duty. These include listening and providing empathy, qualities often associated with the role of counsellor or social worker, as well as conveying authority and enforcing the law. (p. 578)

In addition, Robinson (2015) submitted that “the very nature of police work requires the police communicate with a diverse range of people in a variety of different circumstances” (p. 40); however, “areas of communication, conflict resolution and community engagement, which are skills required in the major part of the [police] role (Barker et al., 2008), are given the least recruitment and training” (p. 37).

Furthermore, the advent of automation, artificial intelligence, the Internet of things, and a plethora of data analytics and software are impacting the practice of everyday criminal justice. From crime-mapping data to predictive policing software that uses algorithms to predict recidivism rates, police services are using technologies to ostensibly augment criminal justice decision making and crime prevention and enhance public safety and security. On investigating one such tool, PredPol, Wang (2017, p.6) wrote:

PredPol is a spatialized form of predictive policing that does not target individuals or generate heat lists, spatial algorithmic policing, even when it does not use race to make predictions, can facilitate racial profiling by calculating proxies for race, such as neighborhood and location. Furthermore, predictive models are only as good as the data sets they use to make predictions, so it is important to interrogate *who* collects data and *how* it is collected. Although data has been conceptualized as neutral bits of information about our world and our behaviors, in the domain of criminal justice, it is a reflection of who has been targeted for surveillance and policing.

As Wang and other researchers (Sanders & Sheptycki, 2017; Shapiro, 2017) argued, predictive policing and spatial algorithmic policing offer police services technologies to more efficiently surveil and scrutinize neighborhoods and districts to focus police attention and scarce police resources. However, as a consequence of the historic racial and social class or economic inequalities in our cultural constructions of crime, new algorithms and analytics often result in the over-policing of low-income and racialized communities and fail in predictions regarding which offenders will re-offend, with black defendants wrongly labeled at twice the rate of white defendants, among other concerns (Angwin et al., 2016). As Hall elaborates in Anderson and Rainie (2018, p.13):

[Artificial intelligence] will likely continue to have biases that are negative toward minority populations, including groups we have not considered. Given that algorithms

often have identifiable biases (e.g., favoring people who are white or male), they likely also have biases that are less well-recognized, such as biases that are negative toward people with disabilities, older people or other groups. These biases may ripple through society in unknown ways. Some groups are more likely to be monitored effectively.

Indeed, these biases and failures re-inscribe the pertinence of police discretionary decision making in identifying criminal risk (Loeb, 2018). Importantly, this is a human skill that can be supported by police higher education and learning, and the importance of human intelligence alongside the use of artificial intelligence or the human–machine collaboration sometimes described as centaur work (Case, 2018). Moreover, as my interview respondents C1, C7, and C14 described, police find themselves increasingly taxed with providing frontline services for a population that faces mental health concerns, addictions, and homelessness as well as building trust and partnership in communities where those modalities have long been frayed (Girard et al., 2014; Pino, 2001; Watson & Draine, 2013). As such, beyond algorithms and analytics that may spatialize data and criminalize neighborhoods, and side-stepping questions about the mission creep of police work into the arena of social work (Tulumello, 2018), police do and will require human skills to build and sustain relationships on the ground with people. Importantly, I would join Robinson (2015) and Millar et al. (2018) to argue that in addition to the critical technical skills that would be necessary to effectively interpret and utilize PredPol and other kinds of algorithmic policing techniques are essential human skills of empathy, emotional intelligence, social intelligence, critical thinking, communication, conflict resolution, and collaboration. This combination of strong technical and human skills would correlate with the Deming (2017) research that shows the strongest employment growth in the United States in recent decades for jobs that combine high math and high social skills and with the Grundke et al. (2018) work on digitally intensive industries, where workers who had strong numeracy skills were better rewarded if they also showed a propensity to self-organize and manage, as well as having strong communication skills. Certainly, both Deming (2017) and Grundke et al. (2018) relied on abstract, quantitative data, which would be less effective in defining a performance metric for effective and responsive policing in the 21st century. Nonetheless, they did suggest the significance of human skills, which will as McGowan and Shipley (2018) argued, “increase in value as routine and predictable, if cognitively intensive work, can be done by automated platforms, software and systems” (para 4).

6. CONCLUSIONS

The Fourth Industrial Revolution and the advent of artificial intelligence, the Internet of things, and growing automation and robotization will transform the fabric of life, learning,

and work. While I have endeavored to show research that focuses on the impacts on the salience of human skills for learners and workers to potentially thrive in this emerging context, the precise contours of the future, and how it will impact different geographies, cultures, industries, and occupations, is not completely clear (van der Elst, 2019). Nonetheless, using aspects of my research on police experiences of higher education in Toronto, Canada, I illuminate the continued value of non-cognitive or human skills to respond to this uncertain future. Learning environments and applications that nurture such human skills—from creativity, collaboration, communication, critical thinking, and problem solving to empathy, leadership, flexibility, and adaptability—will allow adult learners to thrive in an increasingly routinized, automated, and technologically driven future. Traditional learning environments of higher education are under pressure to reimagine themselves with the growth of digital learning platforms “powered by artificial intelligence, mobile apps, cloud services, and data processing” (Means, 2018, p. 329). Ahmad (2020) explored various efforts by universities to respond to various technological disruptions, including 5G mobile wireless technologies, artificial intelligence, machine learning, and robotics, as well as MOOCs, and argued that “[e]ducation systems are now experimenting with collaborative intelligence learning methods, by teaching students how to collaborate with AI systems” (Ahmad, 2020, p. 227). Ahmad built on the insights of Wilson and Daugherty (2018), who discussed how the collaborative intelligence that ensues from human-machine collaboration is increasingly driving performance and innovation and the resulting importance of developing “fusion skills – those that enable [learners/workers] to work effectively at the human-machine interface” (p. 123). These scenarios of the intertwined futures of work and learning are pithily echoed by McGowan (2018), who argued that “the future of work is learning” (para. 4); that is, the ongoing human adaptability and augmentation of skills to collaborate with the accelerated adoption of these various technologies to maximize employability and value for the future workplace.

In the realm of police training and education, there have been some studies on adapting training to online environments. Rui-Hsin and Lin (2018) explored the adoption of e-learning modules in nation-wide police training in Taiwan, in part to reduce costs and improve performance. Bertram et al. (2015) explored the application of virtual training environments for complex team-based activities in Germany, evaluating a virtual scenario that featured the interactions of ground operations with a helicopter crew, while in the Netherlands, Gerritsen and Bosse (2018) examined simulation-based communication skills training at the Dutch Police Academy. Significantly, these studies addressed work-related training of fusion skills that, I would argue, augment the skills and competencies of police officers. However, they do not occur in credentialed higher education online programs designed for police and other public safety professionals, a topic ripe for further study.

Nonetheless, they support findings that suggest that in order to enhance learner engagement and transfer these online learning environments are increasingly being humanized (Northcote & Gosselin, 2017). Indeed, they are part of a process in which educators are incorporating experientially rich learning objects, such as interactive videos, games, simulations, virtual and augmented reality scenarios, and focused discussion boards in their digital learning or course management platforms. In my own teaching design, I have incorporated assessments that require adult learners to create multimedia or multimodal narratives inspired by digital storytelling methods to communicate course-related learning, whether it involves research and/or analysis or connecting course concepts to their personal and professional experiences. In addition, I have created lightboard videos (Birdwell & Peshkin, 2015) that allow me to illustrate and narrate key course concepts that can be viewed asynchronously by learners (Deckha, 2019b).[†] In all of these cases, such digital learning objects offer opportunities for instructors and learners to nurture skills in creativity, collaboration, and communication that have been identified as increasingly valuable. Moreover, they allow instructors to actively build relationships with virtual learners, which Kim and Thayne (2015) argued can intensify learner satisfaction. Indeed, for police and other professional, lifelong learners, these digital and virtual environments will serve as vital fora in which to nurture and extend their repertoire of human skills that will make them more nimble, adaptable, resilient, and competent in order to collaborate with intelligent machines in the workplaces of the future.

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APPENDIX A. LIGHTBOARD VIDEOS

Figure A1 is a screenshot of one of my lightboard videos.

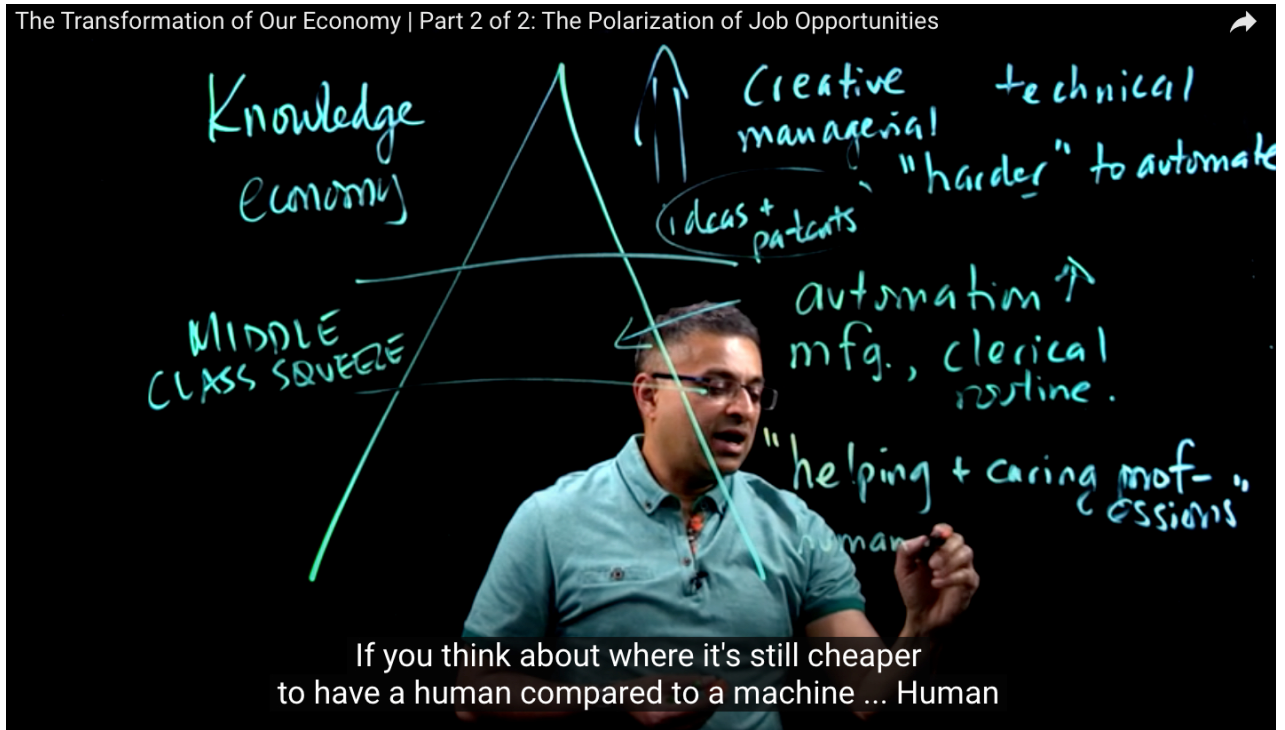


FIG. A1: Screenshot from one of my lightboard videos

† Interestingly, this appears in a publication about the digital transformation of the work produced by Valamis, a Finnish e-learning software development company (<https://www.valamis.com/>). ↩

‡ The program is now called the Bachelor of Applied Arts in Justice and Public Safety in response to its changing student demographics that hail from not only policing, but the larger public safety environment, including border services, corrections, community services, and fire and emergency services. ↩

§ This was a planned change, rather than being solely a response to the COVID-19 pandemic, which has transformed the program into a remote delivery format. Nonetheless, given the growing competition of distance education options, the BAA will gradually adapt to be an exclusive online/distance credentialed offering by Fall 2021. ↩

¶ Please see Appendix A for a screenshot of one of my lightboard videos. ↩