Automation & universal basic income:

Arguments of distributive justice in favour of a UBI

Universiteit Leiden – Leiden University

Name: Thomas Harm van Zon
Student number: S1078119
Master: Philosophy, Politics & Economics
University: Leiden University
Supervisor: Dr. B.J.E. Verbeek
Date: 01-05-2018
Pages: 41
Word count: 18043

"This growing inequality not just of result, inequality of opportunity -- this growing inequality is not just morally wrong, it's bad economics. Because when middle-class families have less to spend, guess what, businesses have fewer consumers. When wealth concentrates at the very top, it can inflate unstable bubbles that threaten the economy."[1]

[1] President Obama, Remarks (by the President) on the Economy, Knox College, Galesburg, IL. July 24, 2013.

Inhoudsopgave

Introduction

Technological advancements are pushing contemporary society into the unknown. The rise of machines capable of performing human labour are destroying jobs that have been around for decades, sometimes even centuries. Economic institutions are predicting a serious decline in the total amount of available jobs in the near future while at the same time it is predicted that technology will become more and more applicable for an ever increasing range of functions. In the long run this process would start to affect society as a whole in multiple ways. Firstly, an ever increasing group of people will become unemployed and as a result will lose their primary source of income. Secondly, the wealth and income gap between those that own the technology and machines of automation and those who do not will widen, partly as a result of the first effect. This will result in a decrease in freedom and an increase in inequality. Additionally, the increasing unemployment would mean that a continuous, large group of people will lose their ability to consume at the levels necessary to keep the capitalist market system working. In short, automation will have some serious social and economic effects on society.

One solution proposed in light of these effects is the introduction of a universal basic income to replace wage-based income as the primary source of income, enabling people to continue making a living without the necessity of a job. However, a universal basic income is a controversial idea that is not widely supported within economic, societal or academic circles.

In this paper I will examine if the introduction of a universal basic income could provide a solution to the effects described above, and if so, whether it is a morally just solution to do so. The research question of this paper is therefore:

"Can a universal basic income negate the social and economic effects resulting from automation, and if so, is a universal basic income a morally just solution?"

In chapter one I will answer this question, I will first describe what automation is, give examples of different sectors that are currently being automated and how it will impact society different from other technological advancements, like the industrial revolution, that have happened before. In chapters two and three I will explain what a universal basic income is. I will describe the core elements and theoretical positive effects and how philosophers and politicians have argued in favour of such an income in the past.

After describing the necessary background, I will address three questions that are necessary to answer the main research question. These are: (1) *"Do the theoretical positive effects of a universal basic income actually take place in real life?",* (2) *"Is a universal basic income financially achievable?"* and (3) *"Is a universal basic income morally justifiable?"*. The first two questions will be discussed and answered in chapter four. I will come to the conclusion that there is evidence that a universal basic income does have positive effects on society and that there are various (theoretical) options on how to finance it. The third question will be discussed and answered in chapter five. I will come to the conclusion that a universal basic income can be morally justified based on two arguments of distributive justice.

The conclusion of this paper will be that more research has to be done but that based on current data a universal basic income can negate the social and economic effects resulting from automation and that it is a morally just to do so.

Chapter 1

The rise of automated labour

In most developed countries automated machines are responsible for much of the agricultural (food) production. Whereas in the late nineteenth century around 50% of the people in the United States (US) worked on farms, in 2016 this percentage dropped to 1.62%.[2] Not only are crops planted, maintained and harvested, even livestock is milked, grown to standardized sizes and slaughtered by automated processes with very little human intervention. In San Francisco a start-up company, called Momentum Machines Inc., is working on a machine that produces up to 360 gourmet-quality hamburgers in under an hour, complete with a toasted bun, freshly sliced vegetables and sauce. At first glance this wave of automation, which introduces the burger-making machine, might look similar to previous waves of automation where for example the agricultural machines were introduced. However, they are in fact very different. Previous waves of automation made jobs less labour intense and were predominantly limited to the production sector. In contrast, this latest wave of automation does not just make jobs less labour intense, in just one sector; it completely eliminates the need for human labour in multiple sectors at the same time. A very large portion of these jobs is located within the *service* sector, which is the world's largest job provider. Automation in the service sector is nothing new, as this already started in the 1950's, with the introduction of simple computers, making jobs in this sector less labour intense.[3] However, as the vision of Momentum Machines Inc. clearly shows, the machines of this wave of automation are meant to replace jobs all together, as co-founder Alexandros Vardakostats describes: *"Our device isn't meant to make employees more efficient, it's meant to completely obviate them"*.[4] Obviating large groups of people from jobs in the service sector is something new and will have a tremendous impact on society.

An example of a food branch where something similar has already been implemented is the traditional sushi restaurant in Japan. Kura Sushi is the market leader in Japan when it comes to automation. Their firm has implemented a nearly fully automated service system in all of their restaurants. Customers order their sushi via a touch screen at their table. A machine then prepares the sushi and places it on a conveyer belt, which brings it to the table. When the customers are done, their plates can be placed in a slot near the table that washes the plates, bringing them back to the kitchen while at the same time calculating and printing the bill. A typical Kura Sushi restaurant needs just six employees to serve around 200 customers per hour. The expenses Kura Sushi saves on wages allows them to offer sushi at a very sharp market price, which makes them very competitive.[5] In Silicon Valley, Zuma Pizza, has a plan to apply the use of automated machines not for solely preparing Pizzas but also for delivering them to the customers' doorstep.[6] Google's company "Waymo" is currently testing its self-driving minivan in

---

[2] *Employment in agriculture (% of total employment) | Data*. (2017). *Data.worldbank.org*. Retrieved 14 September 2017, from https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?end=2016&name_desc=false&start=1960&view=map.

[3] *How the computer changed the office forever*. (2017). *BBC News*. Retrieved 19 September 2017, from http://www.bbc.com/news/magazine-23509153.

[4] M. Ford, (2015). *Rise of the robots*. New York: Basic Books, p. 12.

[5] H. Tabuchi, (2017). *Kura Focuses on Efficiency, and Profits*. *Nytimes.com*. Retrieved 14 September 2017, from http://www.nytimes.com/2010/12/31/business/global/31sushi.html.

[6] M. Robinson, (2017). *This robot-made pizza in Silicon Valley should terrify Domino's and Pizza Hut*. *Business Insider*. Retrieved 14 September 2017, from https://www.businessinsider.nl/zume-pizza-robot-expansion-2017-6/?international=true&r=US.

multiple cities in the US and has even started public trials in which people can apply for a self-driving car to take them around on a daily basis.[7] Mercedes-Benz is testing self-driving technology in the transportation sector, applying it to trucks. Arguing that if German regulation on self-driving technology would be loosened just a bit, self-driving trucks could be a normal sight in 2025.[8]

Apart from the food and transportation branches, advancements in automation are also taking place in another sector: retail. These days, webshops, or *e-commerce,* are competing strongly with traditional retail shops. Online services allow consumers to browse, compare and buy goods from the comfort of their homes, in which cases convenience wins over the time and effort lost otherwise.[9] Additionally, clever algorithms collect massive amounts of general and personal data, or *Big Data*, to provide consumers with special offers and product suggestions, which make online shopping more attuned to one's personal tastes.[10] These trends in automation show a glimpse of a future where automated machines are going to be a part of the daily life. As machines are replacing the labour that prepares and delivers food, sells and transports goods and services, the amount of available jobs is going to be significantly reduced. A study conducted in 2013 predicts that up to 47% of US jobs are at high risk of being automated within the next two decades. The report argues that the advancements in technology are now making it possible to automate non-routine, manual tasks, instead of routine-based tasks only. Therefore, the amount of jobs that can be automated is even greater, making machines a bigger threat to overall employment.[11]

Automation & job creation

Automation of labour is not seen as a problem or threat to overall employment in contemporary economics. The leading economic theory is that automation increases productivity while lowering prices; in turn this increases the demand for a product creating more jobs. This theory became widely accepted within present-day economics when in 1987 the US panel of economists, on the National Academy of Sciences, released a statement concerning the fear of unemployment due to automation:

"*By reducing the costs of production and thereby lowering the price (…), technological change frequently leads to increases in output demand: (…), which requires more labour, offsetting the employment effects of reductions in labour requirement per unit of output stemming from technological change (…) Historically and, we believe, for the foreseeable future, reductions in labour requirements per unit of output resulting from new process technologies have been and will continue to be outweighed by the beneficial employment effects of the expansion in total output that generally occurs."*[12]

---

[7] *Early Rider Program – Waymo.* (2017). *Waymo.* Retrieved 14 September 2017, from https://waymo.com/apply.
[8] K. Wysocky, (2017). *Mercedes' self-driving truck. Bbc.com.* Retrieved 14 September 2017, from http://www.bbc.com/autos/story/20140926-mercedes-self-driving-truck.
[9] *Why Some Customers Prefer Online Business to Traditional Retail Stores.* (2017). *business.com.* Retrieved 14 September 2017, from https://www.business.com/articles/customers-prefer-online-business-traditional-retail-stores.
[10] See also R. Glass & S. Callahan, (2015). *The big data-driven business.* New Jersey: Wiley;
and I. Chaston, (2015). *Internet marketing and big data exploitation.* Hampshire: Palgrave Macmillan.
[11] C. Frey, & M. Osborne, (2017). The future of employment: How susceptible are jobs to computerisation?. *Technological Forecasting And Social Change*, *114*, p. 254-280.

[12] E. Brynjolfsson, & A. McAfee, (2016). *The second machine age.* New York: W.W. Norton & Company, Inc., p. 175.

In short, the panel argues that machines are not a threat to employment because machines do not *replace* employees; they simple *displace* them to either new kinds of jobs within the same branch or into another branch or sector. This theory has become the mainstream answer of economists whenever automation is brought up as a threat to employment.[13] The strength and credibility of this theory is not strange because up until now machines have always increased human efficiency, productivity and overall job demand. Even if a specific kind of job would be lost to a machine, other kinds of jobs would be created in its wake. In an interview for *The Economist* in 2016, economist James Bessen from the Boston University School of Law gave the example of the weaving industry during the industrial revolution. With the introduction of machines, the production of cloth increased by up to 5000% and lowered the required amount of employees, per yard, by as much as 98%. The result was that cloth became much cheaper which led to an increase in demand, quadrupling the number of (new) jobs in the weaving industry between 1830 and 1900.[14] A present-day example can be seen in the automation of the sushi branch mentioned above. While traditional 'high-end' (human made) sushi restaurants have been on a steady decline and employment has dropped by 20% in the last five years, the number of automated 'conveyer-belt' sushi restaurants have experienced consistent growth.[15] The automated sushi sector reached a market value of $7 billion in early 2017 and at the same time supplied over 70% of sushi factories and restaurants worldwide with machinery.[16] Just as with the weaving industry, due to automation, prices are falling and demand is increasing, thereby creating new jobs.

Breaking the historical trend

However, with current advancements in robotics, artificial intelligence, algorithms and Big Data, this historical trend of sufficient job creation and mere employment displacement may end. A clear example can be seen in the current automation of the retail branch and the rise of E-commerce. According to the dominant theory, the rise of E-commerce will increase demand for jobs within transportation, warehousing and logistics. Jobs and employees from the shrinking retail branch will simply be displaced into one of these three growing branches. Although this might be true for a small number of jobs in the *foreseeable* future, reality is that the leading companies in E-commerce are already pushing towards fully automated warehouses.[17] Recently Citi Group, a leading financial institution, and the University of Oxford published a report on the impact of automation driven by the rise of E-commerce. They estimate that in the next two decades 80% of jobs in transportation, warehousing and logistics are susceptible to automation and that

---

[13] See also T. Cowen, (2016). *Average is over*. 1st ed. New York: Plume Book; and D. McCloskey, (2016) *Bourgeois equality*. 1st ed. Chicago: University of Chicago Press.

[14] *Automation and anxiety: will smarter machines cause mass unemployment?* (June 25, 2016). *The Economist*, *special report*. Retrieved 22 September 2017, from http://www.economist.com/news/special-report/21700758-will-smarter-machines-cause-mass-unemployment-automation-and-anxiety.

[15] S. Tani, (2017). *The secret war in Japan's sushi industry*. *Nikkei Asian Review*. Retrieved 15 September 2017, from https://asia.nikkei.com/Life-Arts/Japan-Trends/The-secret-war-in-Japan-s-sushi-industry.

[16] T. Redmond, N. Sano & N. Schanen, (2017). *How an angry man revolutionised the modern sushi industry*. *Financial Review*. Retrieved 15 September 2017, from http://www.afr.com/lifestyle/food-and-wine/is-your-sushi-made-by-a-robot-meet-the-man-who-automated-a-7-billion-industry-20170831-gy8lqw; and C. Loew, (2017). *Trains on different tracks for top two Japanese conveyer-belt sushi chains*. *Seafoodsource.com*. Retrieved 15 September 2017, from https://www.seafoodsource.com/commentary/trains-on-different-tracks-for-top-two-japanese-conveyor-belt-sushi-chains.

[17] C. Hill, G. Jones, & M. Schilling, (2016). *Strategic management*. Boston: Cengage Learning, p.141.

employment in the retail branch will eventually disappear altogether.[18] This means that these three branches will not create the jobs necessary to take in the displaced employees from the retail branch. Even though demand for jobs will initially rise, because right now technological advancements have not yet reached the point where all jobs in a chain of production or service can be automated, eventually this will change when automation reaches a point where all jobs in a chain of production or service can be automated. An example where this is already happening is with the amount of teller jobs in US banking.

The number of teller jobs is often used as a counter argument for the weaving industry. With the introduction of the automated teller machine (ATM), in 1970, there were concerns that it would lead to massive job losses in the banking sector, particularly in the number of teller jobs. However, just as with the weaving industry, the introduction of machines led to a cost reduction for the services offered by banks. This reduction led to a higher demand for bank services, which in turn led to an increase in the number of teller jobs. But with the advancements in technology of the last years, the number of teller jobs has been in decline and has been predicted to fall by 8% in the next decade. According to the Bureau of Labor Statistics, the rise of new technology, such as online and mobile banking, allows customers to make use of the banking services without requiring a teller employee.[19]

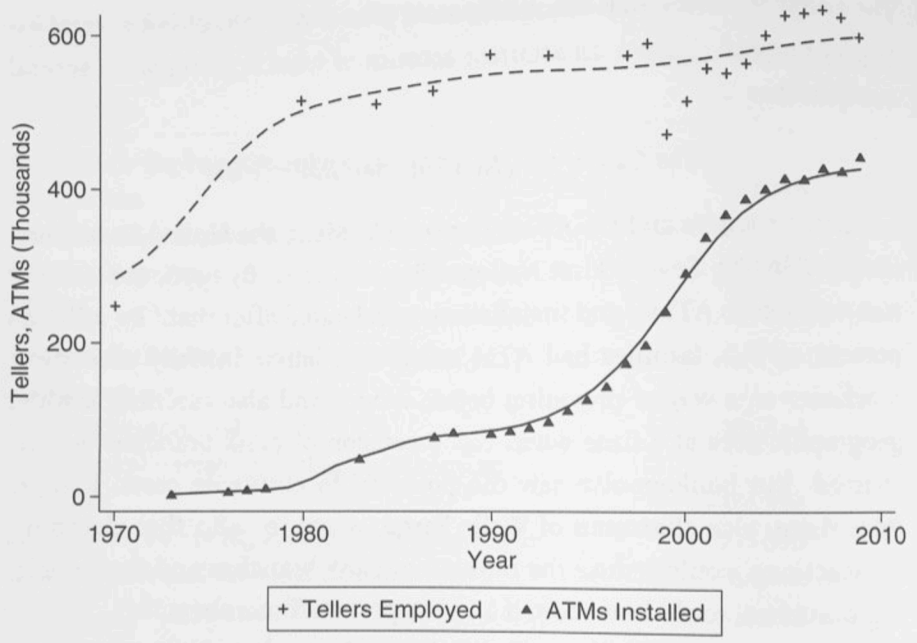

Figure 7.1. Adoption of automated teller machines did not reduce teller jobs. (Ruggles et al., Integrated Public Use Microdata Series: Version 5.0; Bureau of Labor Statistics, Occupational Employment Survey, http://www.bls.gov/oes/; Bank for International Settlements, Committee on Payment and Settlement Systems, various publications [see p. 243, note 9]).

One can argue that the theory of job displacement still holds and that teller employees will merely be displaced to another kind of job within banking or that they can easily find

[18] Citi & University of Oxford. (2017) *Technology at work v3.0: automating e-Commerce from click to pick to door*. Retrieved 16 September 2017, from http://www.oxfordmartin.ox.ac.uk/downloads/CITI%20REPORT%20ADR0N.pdf.
[19] *Tellers : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics*. (2017). *Bls.gov*. Retrieved 21 September 2017, from https://www.bls.gov/ooh/office-and-administrative-support/tellers.htm#tab-6.

a job in another field entirely. However, new kinds of jobs in banking have not been introduced for decades, as the different kind of services of a bank is limited. Furthermore, as seen with the predictions of job automation for the transport, warehouse and logistic branches, automation is taking place in a broad range of branches in the same timespan making displacement to other branches highly unlikely.

This *simultaneous wide-scale* automation across multiple branches of the service sector is the defining factor why this wave of automation will break previous historical trends, such as the industrial revolution and the introduction of the desktop computer. Automation in one branch of the service sector can also be applied in other branches. The same technology that makes E-commerce possible makes online banking possible. The advancements in self-driven technology, for example, will affect a vast range of different kind of jobs. From the delivery of goods within E-commerce to jobs in (public) transportation, law enforcement, insurances and food delivery.[20] This simultaneous wide-scale automation is creating a situation where employees cannot be displaced to other branches of the service sector because of the simple reason that jobs in those branches will also be automated.[21]

Another trend that has run in parallel with increasing automation is that creation of new *kinds* of jobs, which do require human labour, have been dropping over the last decades. The average new company in the US creates 40% less jobs than twenty years ago.[22] Technological companies with massive market values like the tech-giants Google and Facebook employ just a handful of people relative to their size and influence.[23] A 2015 report from the World Economic Forum (WEF), which looked specifically at the effects of automation, predicts that between 2015 and 2020 just 2 million jobs will be created against a total loss of up to 7.1 million jobs in that same period worldwide.[24]

Race towards the tipping point

The combination of simultaneous wide-scale automation and the decline in the creation of new jobs will eventually become a serious problem for both the economy and society as a whole. The advancements in technology will eventually outcompete such a large group of people in terms of productivity and efficiency that people will become obsolete for employment, making them *permanently unemployed*. In 1974 a group of academics, journalists and technologists wrote an open letter to US president Johnson. In that letter they predicted that the advancements in technology would eventually lead to a society in which machines would have the potential to create an unlimited abundance of goods and economic output, with little to no need for human intervention. They warned that if no adequate steps would be taken, this "*cybernation*" of society would result in massive unemployment, soaring inequality and a falling demand for goods and services.[25]

---

[20] McKinsey & Company. (2016) *Automotive revolution - perspective towards 2030: How the convergence of disruptive technology-driven trends could transform the auto industry*. Retrieved 16 September 2017. From http://www.mckinsey.com; and *Op-Ed: Self-driving cars will disrupt more than the auto industry. Here are the winners and losers*. (2017). *CNBC*. Retrieved 16 September 2017, from https://www.cnbc.com/2017/05/03/self-driving-cars-will-disrupt-10-industries-commentary.html.

[21] E. Brynjolfsson, & A. McFee, (2015) Will Humans Go the Way of Horses? Labor in the Second Machine Age, *94 Foreign Aff. 8, 14*, p. 8-9.

[22] N. Srnicek & A. Williams (2015). *Inventing the Future: Postcapitalism and a World Without Work*. London: Verso, p. 100.

[23] Ford (2015), p. xvi.

[24] O. Grut, (2017). *NOBEL ECONOMIST: 'I don't think globalisation is anywhere near the threat that robots are'. Business Insider*. Retrieved 14 September 2017, from https://www.businessinsider.nl/nobel-economist-angus-deaton-on-how-robotics-threatens-jobs-2016-12/?international=true&r=UK.

[25] Ford (2015), p. 30.

The contemporary capitalist market system is not designed to function with a large group of permanently unemployed citizens. The basics of capitalism rely on the consumption of goods and services. Consumption leads to profits, which in turn lead to rising wages, which in turn will lead to an increase in consumption. This creates a cyclical feedback-loop, which makes a capitalist economy grow and prosper, and has supplied much of the developed world with its current standard and quality of living. However, in this economic model, income is generated through labour. Wide-scale automation will deprive huge groups of people from the means of generating or acquiring an income simply because these people would not be necessary for employment.

Economic laws could eventually dictate that wages would start to fall to enable people to compete with machines, making them cheaper to hire than investment in machines. However, in addition to saving money on wages, machines do not require paternity leave, sick leave or even sleep. Machines can work around the clock making them by definition more efficient than any employee could ever be. Therefore, machinery has a significant advantage over labour as it is much more productive and cost-efficient, making competition from labour almost obsolete. And even if some jobs would manage to compete with machines this would not be enough to stir the directing, from the effects of wide-scale automation, away from the tipping point. Primarily, this is because only a fraction of jobs could potentially compete with machines. Leaving the overall amount of people within society still unemployed. Secondly, the few "competing jobs" that would be created would not generate the income necessary to keep the economic feedback loop running properly.

At the same time, those who design and control these (new) automation-technologies would become very influential, polarising earning power and widening the gap between rich and poor within society to new levels.[26] This would create a new form of social and economic inequality, in which a relative few have the luxury to enjoy an abundance of money and power whilst the majority would struggle for a living. Such kind of gross inequality would also have an affect on peoples' freedom rights. The very few would have an abundance of time to exercise their freedom while the majority would not. Their struggle for a living would leave very little time to engage in any activity that can be considered 'free'.

The cybernation warning of 1974 came too early for the disrupting effects on society to actually take place; it came at a time when the introduction of machines, like the desktop computer, was still increasing job demand. Machines increased the overall productivity of an employee instead of replacing the employee. However, this chapter has shown that this new wave of automation is different then previous waves of automation. This time, advancements in automation are replacing the need for employees in a large range of jobs, in multiple sectors, at the same time. Thereby resulting in a massive group of people becoming unemployment. It is this massive unemployment that will have serious negative effects for both the market economy and overall equality within a society. Therefore, it is of vital importance that a solution to the effects of wide-scale automation is thoroughly considered.

[26] P. Van Parijs & Y. Vanderborght, (2017). *Basic income A Radical Proposal for a Free Society and a Sane Economy*. Cambridge (MA): Harvard University Press, p. 5.; Ford (2015), p. xvi – xvii.; and World Economic Forum (2018), The Global Risks Report 2018: 13th Edition. Geneva, p. 8 – 9.

Chapter 2

The proposal of Universal Basic Income

One solution for the problem of wide-scale automation on the economy is to reconsider the primary role employment currently occupies in the traditional macroeconomic theories of the economy. In traditional economic theory, jobs for most people are the only way to acquire money. They are, therefore, essential for the economic feedback loop discussed earlier. However, with wide-scale automation, these essential income-generating jobs will diminish in both numbers and remuneration, depriving millions of people of their means of acquiring money. Additionally, traditional countermeasures to unemployment will become ineffective. This is primarily because the taxable jobs necessary in order to finance such countermeasures, for example unemployment benefits, will become too scarce to successfully finance them. Therefore, finding an alternative to jobs as people's primary source of income would be a way to counteract the problem wide-scale automation is going to pose for the economic system and society.

One way of removing work as the primary source of income is for the government to provide its citizens with a Universal Basic Income (UBI). Just as income generated through labour, UBI would be obtained on a regular basis. The major difference being that the recipient would not have to work in order to receive it, he would just get it: free money. The amount of this income should be set to a level high enough so as to provide a decent standard of living within the economic parameters of the particular society. That would ensure that permanently unemployed people would maintain the means (the money) to contribute to the economic feedback loop. In such a scenario it would not matter that wide-scale automation destroys millions of jobs because people's primary source of income would not depend on them. The idea of UBI to counteract the problems of automation is not entirely new. In 1964, Robert Theobald who was one of the authors of the open letter to US president Johnson, warning about 'Cybernation', advocated the introduction of a 'guaranteed income' in the US on the basis that:

" (…) the guaranteed income is essential for both short-run and long-run reasons. In the short run, it is required because an ever-growing number of people blue-collar, white-collar, middle-management and professional cannot compete with machines; in absence of the guaranteed income the number of people in hopeless, extreme poverty will increase. In the long-run, we will require a justification for the distribution of resources that is not based on job-holding.[27]

Theobald was one of the first economists after the industrial revolution, who was not convinced that automation would continue to create sufficient (new) jobs. As will be seen further along in this chapter, other (historical) advocates of UBI hardly mention the threat of machines to overall employment. Instead, UBI was usually proposed from a social welfare perspective, one that could relieve people from poverty. In recent decades however, this has changed. The rapid development and advancements discussed in the previous chapter have caused a greater number of academics to rethink the overall

[27] Van Parijs (2017), p. 83.

potential of machines and their possible effects on unemployment.[28] Renowned contemporary economist and advocate of UBI, Philippe van Parijs, wrote a book in 1996, justifying the implementation of UBI as a social necessity for the capitalist market system. Recently however, together with Yannick Vanderborgt, professor in political sciences, Van Parijs published a new book: *Basic Income: A Radical Proposal for a Free Society and a Sane Economy* (Basic Income). In this book they argued UBI should not solely be implemented because it is the right thing to do in a capitalist market system but because of the effect automation is going to have on overall employment and the problems it will cause the (capitalist) market system. *Basic Income* gives a detailed overview of the basics of UBI, its history, economical sustainability and ethical justifiability. In the next chapters, the book *Basic Income* is going to serve as a guideline to examine whether UBI is a *morally permissible* answer to the (negative) effects of automation on overall employment.

Free money for all

As mentioned above, UBI would be handed out to every citizen within society without any conditions. There are four essential components that categorise a UBI. These are that UBI is a *universal (obligation free) - cash payment* to an *individual* on a *regular* basis. The first component, – universal – ensures that all citizens, rich or poor, employed or unemployed receive UBI regardless of their circumstances.[29] There are no 'strings attached' when a person receives UBI. This is unlike present day state benefits or social security systems were the recipient has a number of obligations, like searching for a new job or actively participating in community service. This component ensures that all members in society are entitled to UBI and it is what makes UBI '*Universal*'. The second essential component is that UBI is paid in cash as opposed to payments in kind. This is because cash allows the recipient to use its UBI as he pleases, just as a regular wage does. The third component is individuality, which implies that UBI is given to individuals regardless of their living arrangements, just as with wage earned labour nowadays, UBI would grant individuals the freedom to structure their lives in a way of their own choosing, within the boundaries of the law. Providing UBI on an individual level would ensure that the individual can truly act upon this freedom without depending on other people, for example within the household. In a situation where UBI would be provided to the household as a whole, each member would then be entitled to its own share of the household UBI, however in reality it would most likely make (some) people dependant on other members of the household for the way in which they want to exercise their freedom.[30] Finally, UBI should be paid on a regular basis. This provides security and structure for those who are solely dependant upon the UBI. The exact moments when this income would be paid can differ from weekly, monthly, quarterly or even yearly. In this paper a weekly or monthly payment would be recommended because this resembles the frequency in which wages are paid.

In addition to these essential components, UBI would replace other forms of unemployment benefits. This is necessary to finance UBI. Chapter four will give a more detailed description of the proposed reforms to the existing benefit systems. In essence only those benefits that are specifically designed to aid individuals that are permanently

[28] Take for example the book of F. Levy & R. J. Murnane, (2005). *The New Division of Labor: How Computers Are Creating the Next Job Market*. New Jersey: Princeton University Press, In which they argued that automating a car would be impossible.
[29] Van Parijs (2017), p. 7.
[30] Van Parijs (2017), p. 8 -16.

less well-off, for example people with a disability, exist besides UBI. Individuals with a disability could be entitled to receive such an additional benefit in order to try and make these people obtaining a more equal quality of life. The elimination of all other forms of state benefits is furthermore necessary, not just to finance the UBI system, but also to ensure that UBI provides a truly equal (financial) basic start for everyone within society. In chapter three this component will be discussed in more detail.[31]

These are the essential components that make up UBI. Other factors such as the amount of UBI do not have to be uniform or set to a particular standard. The amount of UBI can vary with age, geographical location of the recipient or it could be linked to the value of a countries' currency.[32]

UBI proposals in the past

The theory of supplying people in society with a guaranteed income in the form of UBI is not something new. The first reported proposal for something that comes close to the idea of UBI came in 1796.[33] In this section the six most influential theories, proposals and legislations within Western society will be examined. This will offer an overview of the development of the general theory, its support amongst prominent academics and politicians and those few moments that UBI was nearly implemented.

Previous UBI proposals

The first major advocate for something that resembled UBI was Thomas Paine in 1796. In his pamphlet *Agrarian Justice* he proposed to create a national fund out of which every person from the age of 21 would receive an amount of compensation for "the loss of his inheritance due to the system of landed property".[34] The amount of compensation would allow people to buy a cow and cultivate a portion of land, enabling people to sustain themselves. The compensation of land was derived from Paine's belief that the Earth is the common property of mankind; making any land private property must therefore be compensated. What Paine proposed with his compensation was a universal, obligation free, individual cash payment. However, unlike a true basic income this payment would be done just once in a person's lifetime rather than on a continuous basis.

Just one year later Paine's compensation proposal was taken up by Thomas Spence in *The Rights of Infants* in which he argued that even though Paine's compensation proposal was just, it would leave much of the population in an impoverished state in which they would be unable to acquire a high quality of living.[35] Therefore, Spence argued that the compensation should not be paid just once but rather over the course of one's life.

In 1836 Charles Fourier published his *La Fausse Industrie* in which he argued that the poor should be reimbursed for the loss of their natural right to sustain themselves: *"If the civilized order deprives man of (…) natural subsistence, (…), which make up the first right, the class which took the land owes to the frustrated class a minimum of abundant subsistence."* This argument inspired John Stuart Mill's 'Poor Laws' in his *Principles of political economy*. Mill argued that Fourier's theory combined the existence of private property and individual rights and that

---

[31] *Gratis Geld. (2014). Retrieved 9 October 2017 from https://www.youtube.com/watch?v=HdvAYyMWwq0&t=1771s.*
[32] Van Parijs (2017), p. 9.
[33] Van Parijs (2017), p. 70.
[34] Van Parijs (2017), p. 70
[35] T. Spence, (1797). *The rights of infants; or, the imprescriptible right of mothers to such a share of the elements as is sufficient to enable them to suckle and bring up their young in a dialogue between the aristocracy and a mother of children. To which are added, by way of preface and appendix, strictures on Paine's Agrarian justice*. London: printed for the author.

of common ownership of the Earth. In essence this theory guaranteed the certainty of subsistence to all, something that Mill found very appealing.[36]

UBI in the US & UK

Between the 1920s and 1940s the idea of UBI was often widely debated in the political circles of the United Kingdom (UK). Interestingly, the driving force behind the consideration(s) of a British UBI was the fear of overproduction due to the increase of production after World War I. The British government considered how their population, which was impoverished by the war, could consume the abundance of goods that was now being produced. In response to these fears a couple of ideas for UBI were proposed. One of which was by Clifford H. Douglas who proposed the introduction of a 'social 'credit'. This credit would consist of a monthly payment to all households, helping them to consume. However, these proposals never received the attention and support of either the masses or the political elites.[37]

Across the Atlantic, Democratic Senator Huey P. Long of Louisiana proposed to end the depression by granting every family a yearly 'homestead allowance' of $5,000-. Long proposed to redistribute the wealth that accumulated at the top to the lower levels of society. Unfortunately, Long was assassinated in 1935 shortly after he announced he was running for president. It was not until the civil rights movement of the sixties that UBI became part of the political discussion once again. Robert Theobald, mentioned at the start of this chapter, started to advocate his 'guaranteed income' plan. As mentioned Theobald argued that automation would (eventually) create extreme poverty and inequality, a guaranteed income should prevent this from happening. At the same time Milton Friedman proposed the theory of negative income tax, something that closely resembles UBI in its intended effects.[38] A decade of debates on UBI eventually led to the adoption of a plan to introduce not a UBI but a basic income in the US. In 1969 president Richard Nixon announced that he would introduce a basic income for poor American households of $1,600-. The basic income would only be available for poor families and under the condition that they would work. In Nixon's announcement speech he argued that America did not need more welfare but more workfare. Because Nixon's basic income was a regular cash payment to poor families on the condition that they worked, it was not a universal basic income but (just) a basic income (BI). In 1970 Nixon's plan was adopted with a large majority in the US House of Representatives but eventually rejected by the US Senate.[39] Even though Nixon's proposal was not a UBI, it does show how the idea of a guaranteed income for the precariat was being debated almost half a centaury ago.

However, just four years later Jay Hammond, governor of the US largest state, Alaska, proposed to set up a fund for future generations of Alaskan citizens to profit from the state's oil wealth. In that year Hammond secured ownership of the largest oil field in America and with it the largest resource of joint ownership of the citizens of Alaska. This is because in 1959 the state of Alaska amended its constitution and recognized that the unoccupied land and natural resources of the state would be joint

[36] C. Fourier, (1836). La fausse industrie. Paris: Bossange père [et] l'auteur; and see also Van Parijs (2017), p. 75 - 77.
[37] Van Parijs (2017), p. 79 – 80.
[38] M. Friedman, (1962). *Capitalism and Freedom*. Chicago: University of Chicago press. pp. 157 – 161.
[39] Van Parijs (2017), p. 90 – 93.

ownership of all Alaskan citizens.[40] Hammond suggested that a portion of each year's oil revenue should go into the 'Alaska Permanent Fund'.[41] From this fund all Alaskan citizens are paid a dividend, in 2015 this was equal to 3% of Alaska's GDP, accounting to $2,072 per individual. Even though the fund is not enough to provide a labour-free livelihood and besides the fact that it is paid yearly it is still paid to each individual, without any obligation, making it is the closest real-life example of UBI in existence today.[42]

UBI in (contemporary) Europe

During the numerous discussions in the UK and the US, the idea of UBI did not seem to resonate on the European mainland. Friedman's negative income tax was examined by the French Planning Bureau in 1973 but eventually dismissed. It was not until later that decade that three separate ideas concerning the idea of UBI were proposed in three European countries. The first proposal came from a professor of social medicine in the Netherlands in 1976. Professor Jan Pieter Kuiper proposed that labour and income should be separated so as to counteract the dehumanising nature of (some) jobs. Two years later the bestseller *'Revolt from the centre'* was published in Denmark, in which the authors proposed a citizen's wage and from 1979 to 1981 a couple of articles were published in Sweden, arguing for a guaranteed income instead of full employment.[43]

In the Netherlands the idea of a UBI eventually became politically relevant. In 1977 a political party called the *Politieke Partij Radicalen* was the first political party in the world to include a UBI in their electoral platform. In 1985 the *Scientific Council for Government Policy* in the Netherlands published a report arguing for the introduction of a partial-basic income to ensure social security for low-income families. However, later that year the government rejected the report arguing that:

"A guaranteed basic income for everyone, independently of the duty to work is something we reject: there is not the slightest reason to further hollow the valuable principle that people should as far as possible provide for their own subsistence and that of their dependents."

However, they did mention that their opinion towards the idea of a UBI could change in the future:

"Depending on future developments, for example in matters of working time reduction, technological development, economic growth and workers' participation, (…) new policy responses will be sought in coming years.

Until recently, the discussion of UBI on the European mainland was never more alive than in the Netherlands in the 1980s.[44] Last year however, Switzerland held a referendum on UBI. This time the proposal did not come from a philosopher, economist or politician but from a group of Swiss citizens. They managed to gather over 100,000

[40] K. Widerquist, *About the Alaska Dividend | Alaska Dividend Blog. Usbig.net.* Retrieved 9 October 2017, from http://usbig.net/alaskablog/about-the-alaska-dividend.

[41] *Alaska Permanent Fund Corporation. Apfc.org.* Retrieved 9 October 2017, from http://www.apfc.org/home/Content/aboutFund/aboutPermFund.cfm.

[42] Van Parijs (2017), p. 93 – 95.

[43] Van Parijs (2017), p. 96.

[44] Van Parijs (2017), p. 97.

signatures for the proposal of a Swiss UBI to be put to a national referendum. Though the proposal gathered the necessary amount of signatures, over 77% of voters rejected the proposal during the referendum.[45]

In wake of the attention UBI received in Europe over the last decades, an international organisation in support of UBI was founded: the Basic Income European Network. After realising the support for UBI outside of Europe it was rebranded to: the Basic Income Earth Network (BIEN). BIEN tries to serve as a link between individuals and groups who are interested in UBI. They keep track of UBI related articles, reports and organise a yearly congress, which has expanded the number of UBI-supporters around the world and outside of Europe and the US.[46]

Important to note at the end of this chapter, is that past UBI proposals were mainly meant to counteract social inequality and financially help the precariat class within society. UBI in this paper however, is being proposed as a remedy to the negative effects that will arise due to wide-scale automation in society.

[45] R. Minder, (2016). *Guaranteed Income for All? Switzerland's Voters Say No Thanks. Nytimes.com. Retrieved 6 October 2017, from https://www.nytimes.com/2016/06/06/world/europe/switzerland-swiss-vote-basic-income.html.*
[46] Van Parijs (2017), p. 98.

Chapter 3

Theoretical Positive effects

Advocates of UBI argue that there are numerous positive effects from providing every member in society with a guaranteed universal basic income. These effects range from the individual to society as a whole. In chapter one the negative effects of wide-scale automation have been described. These were: an increase in unemployment, a decrease in consumption resulting in a stagnation of the economic feedback loop, rising inequality and a decrease in (real) freedom all resulting from wide-scale automation.

In this chapter I will discuss how UBI would counteract those negative effects. I will do this by first describing the argument for UBI as a new primary source of income. I will do this by arguing, based on multiple hypothetical scenario's, how replacing labour with UBI would counteract the negative effects of wide-scale automation. In addition to counteracting these effects, UBI would also, according to Van Parijs, increase a recipient's 'real freedom' and, according to various other UBI advocates, increase (overall) equality within society.

UBI as replacement for labour and a new primary source of income

The main reason why UBI is proposed in this paper as a viable way of counteracting the effects of automation is because it would replace jobs as people's primary source of income. In the contemporary economy jobs are the only source of income with which people can sustain themselves and "feed" the economic feedback loop. Wide-scale automation will take that crucial source of income away for most people. This means that another source of income has to be found. UBI is able to serve as this replacement. Not only would it provide the source of income necessary for people to consume and sustain themselves. Based on the following example I will show how UBI would positively counteract the problems wide-scale automation poses on society.

Imagine two persons: X and Y. X and Y are a couple living in an average urban area. X has a job as a manager at the local Amazon warehouse. Y works at a clothing shop downtown. They both work a standard 40 hours, five days a week and earn a wage of 2000, - and 1500, - euro a month respectively. Their monthly expenses to sustain themselves are around 2000, - euro. This leaves them with 1500, - euro to spend either on savings and/ or additional consumption, stimulating the economic feedback loop in an additional way apart from the money paid on monthly expenses.[47] Now imagine that the local Amazon warehouse introduces a new automation system that would fully automate the warehouse and imagine that Y's manager has decided to switch from employees to a new online shopping app that people can access from home. Both X and Y's jobs have been automated leaving them unemployed. Their income of 3500, - euro is gone, leaving them with a monthly debt of 2000, - euros that, because they both have no source of income, cannot be funded.

Let us imagine that X and Y are lucky enough to live in a Western European Country. Becoming unemployed, by no choice of their own, they are entitled to state

[47] In a study conducted in 2009 by the St. Louis Fed argues that even if people increased their savings instead of actively consuming goods and services, this would still result in a stimulance to the economy, feeding the economic feedback loop. See also Daniel L. Thornton (2009), *"Personal Saving and Economic Growth," Economic Synopses, St. Louis Fed.*

benefits to sustain themselves until they find another source of income. However, in order to be eligible for their state benefit, X and Y are required to spend a lot of time and effort finding a new job, which requires them to go though a wide-range of obligated bureaucratic activities such as participating in special meetings, administrative documentation and re-education programs. Additionally, this benefit would not fully replace their lost wages, it would probably barely cover their monthly expenses. Therefore, saving money or spending it on additional consumption is likely to be out of the question. Instead of contributing, X and Y become a drain on the system; they will not contribute to the economic feedback loop of their society. With the pressure of finding a new job, an income that just barely covers their monthly expenses and no ability to save of consume additional goods and/ or services X and Y would plunge into, the precariat social class, deprived from most economic and social securities. Struggling to get by X and Y are confronted with a very different lifestyle and far less opportunity then their working counterparts.

The automation of a few jobs would not pose a problem for society; the Western state benefit system has been created for such scenarios. However, imagine that it is not just X and Y's jobs that are automated but rather a significant proportion of jobs within the logistics (warehouses) and retail sector. As seen in chapter one, such a rapid wide-scale automation of multiple sectors would result in a huge (sudden) increase in unemployment. More specifically for this example, it directly creates two problems for the economy. The first problem is that the total number of state benefit-recipients would skyrocket. This would put a huge strain on the benefit system; simply because more and more benefits would have to be provided while the amount of people funding the benefits through income taxation would shrink drastically. One way to counteract that loss in tax revenue is to raise corporate and other taxes. However, such a tax raise would likely coincide with a raise in product prices which makes the problem for the precariat even worse. The second problem is that this huge group of unemployed people are unable to consume 'additional' goods and services, paralysing the markets because consumption plummets and company profits fall.

Now imagine that X and Y live in a society that has introduced a UBI of 1600, - euro. Let us assume that this society has introduced a fairly abundant UBI that allows people not only to sustain themselves but also allows them to engage in additional, non-essential consumption. Such additional consumption would be seen as crucial for the survival of the companies that sell non-essential goods and services. This is because if a UBI would only cover the costs of basic necessity goods and services, such companies would have no, or a very small, offset market. To keep the example as simple as possible I will assume that the monthly expenses of X and Y are again 2000, - euro.

In this scenario, when both X and Y become unemployed, they would still have a combined source of income of 3200, - euro. This income allows them to not only pay their monthly expenses but also gives them the possibility to save or consume additional goods and services. This would put them in the same condition as if they earned a wage as their primary source of income, even though they are unemployed. Doing so would guarantee that those who are unemployed can still feed the economic feedback loop and additionally remain out of the precariat social class.[48]

[48] Of course the unemployed who depended solely on UBI as their primary source of income would still be less well off then those who are employed and additionally receive UBI. However, because the UBI would allow for

Freedom

In his books Van Parijs argues that implementing UBI in society would increase "real freedom". According to Van Parijs there are two types of freedom: "formal" and "real" freedom. Formal freedom is the freedom an individual has to do, as he desires, within the boundaries of the law. Freedom of thought, freedom of movement and freedom of speech are all examples of formal freedoms. Real freedom is the ability to have the means necessary to put or bring a formal freedom into practice.[49]

According to Van Parijs, real freedom needs some form of foundation on which an individual would be able to act in order to practice his formal freedom. UBI could function as that foundation by giving people the means necessary to obtain these two kinds freedoms. Let me clarify this with an example.

Imagine a world where people have the formal freedom to build whatever they desire. In such a world people would require bricks in order to build and exploit this formal freedom to its full extent. But now imagine that to make these bricks is a very rare oppertunity, only available to a handful of people. Now for the sake of the argument let us imagine that this world is only inhabited by three people; A, B and C. Only C is the lucky one who has the ability to make bricks. A and B do not have this ability and therefore are unable to make bricks. This means both A and B are unable to practise their formal freedom to build that what they desire. C on the other hand has the freedom to let his building imagination go wild. Now imagine that there was a central form of monthly brick distribution. Each individual, no matter what, receives a set of bricks every month. This would allow A and B to practise their formal right to build. A uses his bricks to build a castle. B uses his monthly package of bricks to build a bridge, to get over a river separating him from a fruit tree. C stores these bricks for backup in case something happens to his ability to make bricks himself. For both A and B this monthly set of bricks offer them the means, the foundation, necessary practise their formal freedom.

Now replace the ability to make bricks with labour, the bricks with money and the central distribution system with a government and we have got ourselves a society with UBI. This example is extremely oversimplified, but it does clearly depict the essence of what Van Parijs argues. UBI can serve as an instrument to increase peoples' chances of achieving their formal freedoms.

Equality

Before discussing the benefits of UBI to equality, it is important to have a clear definition of what should be understood under the term equality. In this paper equality will be defined as the equal opportunity people ought to have in regards to achieving the things that they desire. In doing so it is important to state that inequality in such opportunities have always existed.[50] A good example is inherent inequality and one only has to look at the works of John Rawls or Ronald Dworkin to see how they tried to equalise the difference in opportunities people with and without such inherent inequalities have.[51]

---

additional consumption and or savings, the unemployed no longer has to struggle to get by and is being saved from a life in the precariat social class. Which will most probably be eliminated all together.

[49] P. Van Parijs, (1995). *Real freedom for all: what (if anything) can justify capitalism)*, Oxford: Clarendon Press, p. 3 – 29.

[50] Examples of inherent inequalities are natural and or manmade inequalities applicable from or at someone's' birth. An example of natural inequality is being born with a disability. A manmade inequality is for example upbringing or inheritance of capital.

[51] J. Rawls, (1971). *A theory of justice*. Cambridge, Mass.: Belknap Press of Harvard University Press.; R. Dworkin (1981), What is Equality? Part 2: Equality of Resources. *Philosophy & Public Affairs, 10* (4), p. 283-345.

Implementing UBI would not counteract these forms of inequality; instead UBI would ensure an equal amount of opportunity for achieving the things people desire. In the case of an automated society, UBI would not only provide such an equal starting ground for people with and without an inherent inequality but also for the inequality, in opportunities, caused by the automation of labour. At the end of chapter one I have argued that wide-scale automation would create a new form of inequality between those who design and control the technologies of automation and those who do not. Recent studies of (huge) economic and social inequalities show that such inequalities lead to huge inequalities in the opportunities people have to achieve certain things or goals in their lives. In turn, these studies have also show that such inequalities can lead to low social partition within society, lower economic growth and even social upheaval.[52] Advocates of UBI therefore argue that implementing UBI in a society would counteract these negative effects by granting every individual the same amount of opportunity to achieve goals or desires.[53]

[52] B. Lancee & H. G. van de Werfhorst, (2012). Income inequality and participation: A comparison of 24 European countries, *Social Science Research*, Volume 41, Issue 5, Pages 1166-1178.; P. C. Neves, Ó. Afonso & S. T. Silva (2016), A Meta-Analytic Reassessment of the Effects of Inequality on Growth, *World Development*, Volume 78, p. 386-400.; and also *Understanding Social Conflict in Latin America: United Nations Development Programme (2013), Brief Report*, La Paz: Fundación UNIR Bolivia.

[53] Van Parijs (2017), p. 23 – 28; and A. L. Bovenberg and F. van der Ploeg (1995), Het basisinkomen is een utopie, *Economisch Statistische Berichten*, volume 80 (3995), 100-104.

Chapter 4

Theory versus reality

Chapters two and three described how UBI could counteract the problems caused by wide-scale automation as discussed in chapter one. In this chapter I will go over and compare the data collected from two experiments to see what the actual real-life effects are on communities whom have received UBI. In doing so I will examine if the positive effects of UBI are observed in real life as suggested in theory. In addition, I will examine the question of how to finance UBI within the current economic system. I will do so by discussing various proposed reforms and new taxes that ought to finance UBI within more or less the current economic system.

It is important to note that these experiments are conducted in contemporary communities; therefore they do not resemble the scenario where UBI would directly counteract the negative effects of automation as being proposed in this paper. However, these experiments can still provide data on how communities react to the introduction of UBI and what the social side effects in these communities have been. This in turn can provide a useful insight to what can be expected from the introduction of UBI.

What are the real life effects of UBI?

Over the past century numerous experiments have been conducted to see if the theoretical effects of UBI would actually take place in real, every day, life. For the purpose of this paper, two of those experiments will be examined in this section. The first experiment is the Mincome experiment that was conducted in the mid-1970s in Canada. Mincome was however, an experiment regarding a negative income tax. However, because the overall effects of both theories and the effects of the resulting policies are considered to be practically the same, Mincome's result can be examined for this paper.[54] The second experiment that will be examined is the BIG experiment currently being conducted in Namibia. The reason these two experiments are being examined in this paper is because there is a lot of data on these two experiments that has been analysed and studied. The Alaskan Permanent Fund (APF), mentioned before as a form of UBI, is not taken into account as a viable research topic. Though it is true that the conditions of the APF are very similar to that of a UBI, the yearly amount paid is too small to provide for the basic needs of recipients. Therefore, the APF cannot be used as an example for effects of UBI.

Mincome experiment 1974-1979

In the Canadian town of Dauphin an experiment with a negative income tax was being conducted during the nineteen seventies. The data from this experiment had been lost and forgotten for decades until professor Evelyn Forget 'rediscovered' it and decided to analyse it. The initial goal of the Mincome experiment was designed to understand the impact of a guaranteed income on the willingness to work and overall work participation. However, two years into the experiment the main focus was redirected to give the Canadian government an understanding of the financial costs involved if they were to

[54] Van Parijs (2017), p. 32 – 40.

give every citizen a guaranteed income.[55] The program randomly appointed families within the Dauphin community for participation in the project. At the same, a control group that resembled the participating families were appointed in neighbouring communities.[56] In total around 33% of the town's population participated in the experiment.[57]

Because the data was lost for many decades, researchers have only recently begun to analyse it. According to a recent paper, around 11.3% of recipients did indeed withdraw from the labour market. However, these recipients did not become non-productive members within the Dauphin community. The data revealed that around 30% of these recipients engaged in other (non-paid) activities such as care work or invested extra time in education. In addition, the data shows that the group of the recipients that withdrew from the labour market were predominantly young recipients and one-parent households.[58]. Forget's study showed that Dauphin students, during the years in which the experiment was running, had a higher enrolment rate into high school as compared to their control group counterparts.[59] In addition, the study showed that the single parents, that stopped working, gained valuable time for taking care of their children, hardly making them non-productive. Even more interesting is that Forget compared Dauphin's Healthcare records from during the experiment to data from before and after the experiment. Forget concludes that during the experiment hospitalisation rates dropped and birth rates stayed the same. Suggesting that there are direct healthcare benefits from a guaranteed income or UBI.[60]

However, even though these two studies claim that the experiment has offered some significant data in regards to labour market participation, education enrolment and even healthcare benefits, critics argue that the Mincome experiment was a flawed experiment. They point out that because the experiment changed two years into its existence, altering its main objective, any data from the experiment has to be viewed as inconclusive.[61]

BIG experiment 2008 -

The second experiment started in 2008 in the Namibian town of Otjivero and it continues to this day. The BIG project named after 'Basic Income Grand', which is in essence UBI, has been implemented by various international food charity organisations and the German United Evangelical Mission.[62] Their intention is to eliminate hunger and poverty from the community and in doing so convince the Namibian government to implement the program to a nation wide scale.[63] Since 2015 the project is lead by the Namibian

---

[55] G. Mason, (2017). *Revisiting Manitoba's basic-income experiment*. *Winnipegfreepress.com*. Retrieved 10 October 2017, from https://www.winnipegfreepress.com/opinion/analysis/revisiting-manitobas-basic-income-experiment-411490895.html.

[56] M, Murray, & C. Pateman, (2012). *Basic income worldwide*. Basingstoke: Palgrave Macmillan, p. 83 - 86.

[57] E. Forget, (2011). The town with no poverty: the health effects of a Canadian guaranteed annual income field experiment. *Canadian Public Policy*, *37*(3), p. 283-305.

[58] D. Calnitsky, & J. P. Latner, (2017). Basic Income in a Small Town: Understanding the Elusive Effects on Work. *Social Problems*, spw040, p. 291.

[59] Forget (2011), p. 292 – 293.

[60] Forget (2011), p. 294 – 300.

[61] Van Parijs (2017), p. 141 – 142.

[62] Van Parijs (2017), p. 139.

[63] R. Osterkamp, (2013). The basic income grant pilot project in Namibia: a critical assessment. *Basic income studies*, *8*(1), p. 71.

minster of Poverty Eradication and Social Welfare increasing the government's role in the program.

All members in the town of Otjivero, under the age of sixty, receive a basic income of around 15 US dollars per month. This income is obtained free of obligation and is sufficient to provide the recipient in his basic necessities. In 2010 a report was published on the effects of the guaranteed income on the Otjivero community. The report argues malnourishment and pervasive begging had been eliminated from the community entirely. Crime rates dropped significantly, trespassing for example fell by 95% in the first year alone. Primary school dropout rates fell from an average of 40%, before the experiment, to zero after the first year. In addition to the social effects on the community, labour participation did not drop; instead, numerous businesses were founded enabling people to become fully self-employed.[64] The study notes:

"Rather than becoming dependent on the BIG, many poor people chose to diversify their incomes."

However, being a strong advocate for a UBI, Van Parijs argues that Namibia's BIG experiment has one major 'flaw' that makes it unsuited for the use of arguing in favour for a UBI in a developed country. That 'flaw' is that there was no social insurance or public benefit system prior to the implementation of the UBI. According to Van Parijs this would undermine any conclusion a 'developed-country basic-income supporter' may formulate in support of the implementation of a UBI in their own country.[65]

Parallels between both experiments

Even though some critics argue that these two experiments cannot serve as reliable evidence in support of UBI because of the short durations and small scale of the experiments, the data collected can still provide at least some basis as to what the effects of UBI would be on society. The Mincome experiment, for example, did change its main objective after two years, however this had no effect on the income of the recipients. The collected data can therefore still give an insight into how people changed their daily lives under the influence of a guaranteed income. Especially when this is compared to control groups in neighbouring communities. The same is true for the Namibian BIG experiment. Van Parijs argues that it cannot be used because of the absence of a social insurance or public benefit system before the experiment took place. Therefore, the assumption that the same effect would occur in a Western Country, where such systems are implemented, cannot be made. However, various studies have shown that crime rates are higher in communities with a relative high amount of poverty and this is no exception for Western Countries.[66] The data from the BIG experiment confirms this effect in reverse; when poverty is reduced crime rates go down. In doing so confirming that there is a direct correlation between the two. In addition to crime rates, both in the Mincome and the BIG experiment there was a decrease in school dropout rates directly when UBI was introduced. Both examples show that in both a Western country with a social insurance or public benefit system (Canada) and a country without such a system, UBI

[64] M. J. Frankman, (2010). Making the Difference! The BIG in Namibia; Basic Income Grant Pilot Project Assessment Report, April 2009. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, *29*(3-4), p. 526-529.
[65] Van Parijs (2017), p. 139 – 140.
[66] See also D. Brady & L. Burton (2016), The Oxford Handbook of the Social Science of Poverty, Oxford: Oxford University Press.

does effect the communities. Therefore, the data collected in both experiments can be used to argue that there are a wide range of positive effects taking place in society after a UBI were to be introduced.

Therefore, the data from both experiments can give reasonable and reliable clues as to what the effects of UBI are for an individual, a community or a society in general. In addition to falling crime and school dropout rates, these experiments show that *some* theoretically proposed benefits take place in reality, and provide a promising foundation for future research. Social cohesion within society strengthened when recipients that stopped working took care of their children or participated in unpaid care work. The BIG experiment showed that, given the chance, people would engage in entrepreneurship, trying to make a living on their own. In doing so, recipients made themselves less dependent on UBI and contributed to the economic feedback loop by consuming and generating profits.

As stated at the beginning of this section, these experiments do not provide unquestionable prove that the introduction of a UBI in an automated society would counteract the negative social effects automation would have on society. It does however, provide some data and insight into how a UBI would effect (contemporary) communities on a social level. It is important to note that further research and more large-scale experiments would have to be conducted in order to truly understand how UBI would impact a society as a whole. Only when this is done can the case for UBI in an automated society be made strong enough. For now, these experiments provide at least some evidence that UBI would indeed affect society in a positive social way.

Is UBI financially feasible?

For the question of financial feasibility I will take a look at proposals done by economic advocates of UBI and institutions on their respective theories as to how to finance UBI within the contemporary economy system. One such advocate is Scott Santens, he refers to three specific reforms to; welfare programs, tax expenditures and state funded social security systems.[67] Besides these reforms he and others also propose a range of new taxes like; a revenue-neutral carbon tax, a financial transition tax and a land-value tax. In addition to these proposals, the European committee of legal affairs recently released a report in which they propose the introduction of a robot tax. In conclusion I also argue for a so called corporate automation benefit tax.

In this section these proposals will be examined and explained in more detail.

Reforms

By reforming certain economic structures governments would be able to save or free up money for UBI.

The first reform proposal is the elimination of most *welfare programs.* As mentioned earlier, UBI enables recipients to take care of their basic needs, making most welfare programs superfluous. An example of a program that would lose its purpose is a food assistance program. Food assistance programs give out food to low income families who struggle to support themselves. UBI would negate the need for such programs because everyone in society will be able to buy their own food and take care of their own basic needs. There will however, still be groups in society that are in need of extra assistance,

[67] S. Santens, (2017). *How to Reform Welfare and Taxes to Provide Every American Citizen with a Basic Income. Medium.* Retrieved 20 October 2017, from https://medium.com/economicsecproj/how-to-reform-welfare-and-taxes-to-provide-every-american-citizen-with-a-basic-income-bc67d3f4c2b8.

such as mentally or physically handicapped people. For those groups, special programs could still be implemented to try and create an equal standard of living as to non-handicapped people. Though for most welfare programs that do not compensate a handicap or disorder, the first proposal is to eliminate these programs.

The second reform is a reform to the system of *tax expenditures*. Tax expenditures are deductions or exclusions to an individual's taxable income and/ or asset(s). In doing so an individual's overall tax (burden) will be lowered, giving him a financial benefit. Examples of tax expenditures are child tax credit, home ownership tax expenditures and tax expenditures for married couples. Governments usually use tax expenditures to aid individuals with a certain (financial) disadvantage as opposed to other tax paying individuals or to promote specific incentives like buying a house or driving an electric car. Santens argues that such tax expenditures can be seen, in essence, as handing out (free) money to certain groups of individuals. However, because UBI would create a more or less equal financial basis for all individuals within society, such additional tax reductions would become superfluous. This means the money currently spent on these expenditures can be used to finance UBI.

The third reform is a reform to the *state funded social security system(s)*. Santens argues that some social securities, like state funded pensions, already resemble UBI in a way because these are handed out to all people, above a certain age, without additional requirements. These forms of pensions can be either abolished or lowered because UBI would take their place as a provider of a basic income to sustain oneself. In addition to the money that would be saved due to the reforms of these programs, a lot of additional expenses, concerning the administration and bureaucracy of these programs, would become obsolete. In May 2017, the Organisation for Economic Co-operation and Development (OECD) released a paper in which it calculated that if Finland, France, Italy and the UK would reform all three benefit branches, as proposed by Santens, they could all implement a UBI.[68]

New taxes

In addition to the reforms suggested above, UBI advocates also argue that additional taxes would be required to fund UBI. In this section five proposals will be discussed at length.

The first suggested tax is a *revenue-neutral carbon tax*. The idea behind a revenue-neutral carbon tax is that the carbon like coal, oil and gas is taxed from the moment it comes out of the ground. This would result in a huge source of revenue because carbon-based products are used everywhere within society. The idea for a revenue-neutral carbon tax to finance (a portion) of a UBI is that the revenue collected from this tax would be redistributed over all individuals in society.[69] A side note to this proposal is that it is imaginable that if such a tax on carbon were introduced, alternatives would take their place, resulting in a decrease in revenue over time.

A second proposed tax is a *Financial Transaction Tax* (FFT) or "Toobin tax". This would be a tax on any transaction within the financial markets. Nowadays companies and investors can buy and sell stocks without having to pay for these actions. Santens argues that by taxing these transactions with just a fraction of a percent, the government could

[68] OECD, (2017). Retrieved 26 October 2017, from http://www.oecd.org/employment/emp/Basic-Income-Policy-Option-2017.pdf

[69] B. Murray & N. Rivers, British Columbia's revenue-neutral carbon tax: A review of the latest "grand experiment" in environmental policy, *Energy Policy*, Volume 86, 2015, p. 674-683.

increase revenue by billions of euros per year. In addition, taxing the stock transactions would also dampen the (current) trend of market destabilisation, making the international stock markets more robust and trustworthily.[70]

A third possible tax, referred to by Sanders, is a *Land-value Tax* (LVT). The LVT should not be confused with the property tax because it taxes solely the (unimproved) value of the land. According to Santens a LVT would be a 'just' tax because it is a tax on a collectively created value of land within society. The basic theory behind this tax has already been mentioned in chapter under Thomas' Pain's 1796 *Agrarian Justice* pamphlet. The theory behind it is because the value of a plot of land is determined on the basis of the value of the surrounding land. A plot of land within the city has more value than a plot of land in a rural area. Santens argues that such a tax would create an incentive to develop unused and underused plots of land, and in doing so, open new sources of tax revenues.[71]

Another proposal is the introduction of a *Robot Tax,* which in essence is a tax on automation, the very source of the troubles UBI has to counteract. In 2017 a report of the European committee of legal affairs mentioned the idea of a robot tax as follows:

"(…) consideration should be given to the possible need to introduce corporate reporting requirements on the extent and proportion of the contribution of robotics and AI to the economic results of a company for the purpose of taxation and social security contributions."[72]

Though the committee described a contemporary need for such a tax, it is not unthinkable that a robot tax will eventually become a permanent tax, as job automation will reduce the tax income from employment and as a result reduces the potential source for new and or higher consumption taxes. Therefore, in an automated society the robot tax could eventually replace labour- and higher consumption taxes as a viable tax source. Additionally, such a tax has the potential to become a major, if not the biggest, source of income for a government in such a society. The reason behind this potential is because of the sheer abundance of robots within an automated society, which if all taxed, create a huge source of tax revenue. In February 2017 Bill Gates advocated that this income, generated by the tax on robots, could easily be used to finance public expenses and even UBI if society choses to introduce it.[73] This statement has since fuelled the discussion about the positive and negative effects of such a tax. In December 2017, researchers of Kellogg School of Management came to the conclusion that the revenue of a robot tax could indeed provide the means of financing UBI and in doing so enable everyone in society to benefit from automation.[74]

---

[70] L. Burman & S. Rosenthal, (2017). *Financial transaction taxes in theory and practice. Brookings*. Retrieved 27 October 2017, from https://www.brookings.edu/research/financial-transaction-taxes-in-theory-and-practice-2/

[71] Santens (2017), p. 7-8.

[72] Committee on Legal Affairs, *Draft report with recommendations to the Commission on Civil Law Rules on Robotics* (2015/2013 (INL)), p. 10.

[73] J. Malcolm, (2018). *Here's how Bill Gates' plan to tax robots could actually happen. Business Insider*. Retrieved 26 February 2018, from http://www.businessinsider.com/bill-gates-robot-tax-brighter-future-2017-3?international=true&r=US&IR=T; and J. Titcomb, (2017). *Robots that take people's jobs should pay taxes, says Bill Gates. The Telegraph*. Retrieved 25 October 2017, from http://www.telegraph.co.uk/technology/2017/02/20/robots-take-peoples-jobs-should-pay-taxes-says-bill-gates/

[74] J. Guerreiro, S. Rebelo & P. Teles, (2017). "Robot Tax" Could Reduce Income Inequality. *Kellogg Insight*. Retrieved 17 March 2018, from https://insight.kellogg.northwestern.edu/article/how-a-robot-tax-could-reduce-income-inequality.

The final tax proposal in this paper is in essence a higher corporate tax, which I like to call the "corporate automation benefit tax". In essence this tax is legitimised like other corporate taxes, simply because companies enjoy various benefits from operating within a society. Wide-scale automation will increase the overall benefit and wealth for companies operating in an automated society. Therefore, I propose a corporate tax on the use of these (additional) automation benefits. The revenue from such a tax could be used to finance a UBI.

Financial achievability

These proposals show that there are multiple ways in which a government could fund UBI. The most important element these proposals have in common is that they are non-income-based taxes. In a world where automation will leave most people unemployed, these taxes could provide the financial basis for UBI. Also important to mention is that the proposals above are meant to give an overview of the proposals that have been done by various UBI advocates, professors and economists to generate a source of income for the funding of UBI.[75] In order to explore the actual (side) effects of these proposals on society, more detailed studies would have to be done, providing a better understanding their effects and how they would interact if implemented together. However, the purpose of this section was to highlight that such theories and proposals to finance UBI exist.

Conclusion of this chapter

In this chapter I have examined and compared the data collected form two real-life UBI experiments and examined various proposals into how UBI could be financed without the need for income-based-taxes. In doing so I have shown that UBI can have a positive effect on society and that there are multiple ways in which new tax revenues could be created to finance UBI. The purpose of this chapter was to see how UBI would affect society in practice and how, if at all, it is financially feasible. As shown above, both questions can be answered (cautiously) positive. The last question about the morality and justifiability of UBI however, still needs to be discussed. This question will be answered in the next chapter.

[75] See also R. Pereira, (2017). *Financing Basic Income.* Birmingham: Springer International Publishing; G. Caprio, I. Atiyas & J. Hanson, (1996). *Financial reform.* Cambridge: Cambridge University Press; and M. Sommer, (2016*). A feasible basic income scheme for Germany*. Ingolstadt: Springer.

Chapter 5

Is UBI morally justifiable?

The third question that needs to be answered is whether UBI is morally justifiable. This question is a very philosophical question as opposed to the empirical question on the practical, positive and economic effects. However, in order to present UBI as a solution that can negate the negative effects of automation it is a question that has to be thoroughly examined, because a solution that is not moral cannot be used and would therefore not be a solution.

Two arguments of distributive justice in favour of UBI

UBI can be justified based on two arguments within the theory of distributive justice. The first argument is Van Parijs' real freedom for all, which focuses on a justification based on freedom. The second argument is that of the common ownership of the earth and its resources and products derived from those resources. This argument focuses on a justification based on property rights. It is this second argument that makes the strongest case for justifying UBI in an automated society.

Real freedom for all

In his book *Basic Income* Van Parijs advocates for the implementation of UBI based on the argument that it would achieve "real freedom for all". The argument is derived from the liberal-egalitarian theory of distributive justice, in which the goal is equalising the conditions, which consist of the *opportunities, capabilities* and *possibilities* of all individuals in society, to pursue real freedom.

Freedom, according to Van Parijs, is important and people should have as much of it as possible. Therefore, pursuing a state in which the conditions that lead to real freedom are distributed fairly, amongst all members of society, is a morally just state.[76] This does not mean however that the aim of a liberal-egalitarian is, therefore, the equalisation of the conditions of real freedom at any cost and that everyone should eventually have the same amount of real freedom. This is because inequality is not to be regarded as something inherently bad, as long as those who have less do not suffer under their condition of having less than others. Justice in liberal-egalitarian terms is therefore achieving the *maximin* of the conditions that lead to real freedom.[77]

These conditions consist of the opportunities, capabilities and possibilities, which would lead to real freedom. However, this means that these conditions are comprised of a complex mix of benefits that, for the most part, were freely given to each individual by for example: nature, technological progression, capital accumulation, social organisation and civility rules.[78]

Van Parijs argues that what should be done is ensuring that everyone receives a fair share of these benefits, which are incorporated within all aspects of an individual's life, most notably income, but that in reality no contemporary individual did anything for besides enjoying the benefits.[79] Take for example a manager of a factory, his wage compared to the average employee will be many times higher. This is in part, probably, to his skills as a manager but a huge part of how that job even came into existence is because

[76] Van Parijs (2017), p. 104.
[77] Van Parijs (2017), p. 104.
[78] Van Parijs (2017), p. 105.
[79] Van Parijs (2017), p. 105.

a tremendous amount of historical benefits, like the industrial revolution, the existence of state institutions that protect property rights and a market to offset products. In all of these factors the manager had no role to play, but he is still able to reap the benefit from them. According to Van Parijs, such benefits are incorporated unequally into people's wages or as Edward Ballamy said:

"*How did you come to be possessors of this knowledge and this machinery, which represents nine parts to one contributed by yourself in the value of your product? You inherited, did you not? And were not these others, these unfortunate and crippled brothers whom you cast out, joint inheritors, co-heirs with you?*"[80]

Van Parijs argues that UBI is the perfect instrument to fairly distribute these benefits. Because no one individual can claim that he alone is entitled to the benefits from past generations, he that reaps the fruit of these benefits and those who do not, are still equally entitled to their own fair share. By introducing a tax to those who reap the fruits of these benefits they would be paying for their privilege of using these benefits for their personal interests. The revenue from this tax could be used to finance UBI. Which, in turn would give a share of the used benefit to someone that does not have the privilege to use these benefits to his own interest.

UBI should not be interpreted as an outcome equalising mechanism, in which those who have compensate those who do not (fair redistribution), but rather as an instrument that aims to make the outcome of benefits less unequal and in doing so make the distribution of the conditions that lead to real freedom more fair (fair distribution).

"*Granting a basic income to all helps equalize what people are given – the material substratum of their real freedom – and only as a consequence, indirectly and more roughly, what they achieve with what they are given.*"[81]

In doing so each individual in society gets the highest amount of real freedom possible, achieving what Van Parijs calls "real freedom for all".[82]

The Good Life

A second liberal-egalitarian argument in favour of UBI, which is derived from the one above, is that real freedom allows an individual to pursue his conception of "the good life", the life that he wants to live. Van Parijs clarifies this by his Crazy-Lazy example:

Crazy and Lazy are two identical persons the only thing that sets them apart is their version of what the good life is. Crazy believes the good life is pursuing a career and making lots of money. Lazy on the other hand, believes the good life is doing as little as possible and making sure he enjoys as much leisure as possible in his life. Now assume that both Crazy and Lazy have an identical plot of land. They make their living by cultivating their respective plots of land. Lazy cultivates just a small portion of his land, just enough to get by. Crazy on the other hand cultivates all of his land and sells the harvest that he does not use for himself on a market to earn money. Because Crazy's version of the good life is working hard and earning as much money as possible, he would probably want more land so that he can increase his earnings. Lazy on the other hand

[80] E. Bellamy, (1888/ 1893). *Looking Backwards 2000-1887*. Harmondsworth: Penguin, p. 82-83.
[81] Van Parijs (2017), p. 107.
[82] Van Parijs (1995), p. 31 – 57.

could not be bothered, his version of the good life is working at a bare minimum so that most of his time can be spend on leisure.

However, for Crazy's version of the good life to become reality he will need certain external resources, in this case more land. If Crazy could also cultivate Lazy's plot of land he could double his harvest and increase his income. Imagine that the plots of land are tradable, in a free market system, where people can choose to trade based on their ambitions as Dworkin's theory of distributive justice implies.[83] Lazy would give up parts (if not all) of his land to Crazy in return for the value of his land: rent. This value could very well be translated into a (universal) basic income. Thereby creating a system where Lazy can live his version of the good life by enjoying his leisure as a result of his UBI and Crazy can live his by working more and increasing his earning.[84] In this way introducing UBI would help both Crazy and Lazy to pursue their respective versions of the good life.[85] They both are able, or in other words they both have the real freedom, to pursue their respective conceptions of the good life.[86]

The liberal-egalitarian argument in favour of UBI above is justified based on the argument of maximin real freedom. There is however another justification in the left-libertarian tradition, which is based on justification, based on property rights.

Common ownership of the earth

In the section above Van Parijs' liberal-egalitarian argument of real freedom for all is used as the argument to justify UBI. However, in 1991 Van Parijs justified UBI based on another argument. In his book *Real Freedom for All: What (If Anything) Can Justify Capitalism?* Van Parijs justified UBI on the left-libertarian theory of distributive justice based on property rights. In this section this older justification proposed by Van Parijs will be discussed because I argue that it gives a stronger justification of UBI and especially so in the case of automation, than the argument based on real freedom for all.

All *Libertarian* theories of justice revolve around the fundamental right of self-ownership:

"Each person is the morally rightful owner of himself. He possesses over himself, as a matter of moral right, all those rights that a slaveholder has over a complete chattel slave as a matter of legal right, and he is entitled, morally speaking, to dispose over himself in the way such a slaveholder is entitled, legally speaking, to dispose over his slave."[87]

The conclusion of this line of reasoning is that the right to self-ownership implies the rightful ownership of anything that is the product of labour from that body. Therefore, libertarians claim that taxation or redistribution of these products is unjust.[88] However, because these products of labour cannot be created without the use of

[83] In his *Equality of resources* Dworkin argues that unequal distribution of resources is considered fair (just) only when it is the result of an individual's own decisions and intentional actions. This is because the individual takes responsibility for his "option luck". Also see R. Dworkin (1981b), "What is Equality? Part 2: Equality of Resources," *Philosophy and Public Affairs* 10, pp. 283-345, reprinted in: R. Dworkin, *Sovereign Virtue. The Theory and Practice of Equality*, Cambridge: Harvard University Press 2000, p. 65-119.
[84] P. Van Parijs (1991), p. 114 - 116.
[85] P. Van Parijs (1991), p. 112 - 117.
[86] P. Van Parijs (1991), p. 117.
[87] J. Cohen, (1995). *Self-Ownership, Freedom and Equality*, Cambridge: Cambridge University Press, p. 68.
[88] H. Steiner, (2016). Compensation for liberty lost: Left libertarianism and unconditional basic income. *Juncture*, 22(4), p. 293.

resources, "nothing gets made from nothing", the question arises to whom these resources belong.

The libertarian tradition has found two answers to that question. The first answer is referred to as *Right-Libertarianism* and it argues that in their original state, resources belong to no one.[89] Resources are therefore unowned and every individual has an equal right to use them. However, it is a "first come, first served" principle, which means that the first person to occupy or take possession of a resource acquires the full private ownership of that particular resource and thereby the right to exclude others from using it being that they leave enough and as good of the resources for others.[90] The second answer libertarians have come to is referred to as *Left-Libertarianism*. Left-libertarians do not agree with the "first come, first served" principle as proposed by their Right-winged counterparts. They argue that such a claim and exclusivity to a resource should compensate everyone else that no longer has the right to make use of or claim that resource.[91]

It is in the compensation of property rights that left-libertarians try to make initial acquisition of resources and the distributive outcomes, from the markets of the product produced by these resources, more just.[92] Returning to the Crazy-Lazy example, when Lazy gives his plot of land to Crazy, Lazy hands over his property right to Crazy. Crazy in return compensates Lazy for his initial right. Instead of compensating the exchange of the conditions of real freedom to achieve the good life, in the left-libertarian scenario, the right to private ownership compensates the consequential loss to own that right for others. This compensation could be achieved by putting a tax on property rights. The revenue from this tax could then be used to pay a compensation share, in the form of UBI, to those who do not have the property rights. Van Parijs argues that it is this compensation that provides a left-libertarian argument for a moral basis of UBI.

Moral basis of UBI in an automated society

The aim of this paper was to find a moral justification for the implementation of UBI to counteract or negate the negative effects of wide-scale automation. In this chapter two general moral arguments have been given for the introduction of a UBI in a contemporary society. The liberal-egalitarian argument is based on maximin real freedom for all and allowing individuals to pursue their version of the good life. The left-libertarian argument is based on the theory that all individuals have the same right to the earth's resources and the products derived from those resources, therefore using or claiming these resources entails an obligation to compensate.

The left-libertarian argument gives a more solid justification for UBI. Though it is true that the liberal-egalitarian argument of maximin would still apply in an automated society, it would act more like a welfare program that ensures individuals can get by. This is because in an automated society there would be fewer jobs. This means that most people do not have the choice between working and not working (a Crazy or a Lazy lifestyle). There is not sufficient work, so there is no actual choice given to people. UBI would give individuals the means to survive and to pursue their respective versions of the

[89] Examples of Right-Libertarians are Robert Nozick, Ayn Rand, Eric Mack and Richard Epstein.
[90] Van Parijs (2017), p. 120.; and Steiner (2016), p. 293.
[91] Examples of left-libertarians are Hillel Steiner, Peter Vallentyne, Philippe Van Parijs, Michael Otsuka and David Ellerman.
[92] Steiner (2016), p. 294.

good life, however this is more the result of the absence of a choice than actually having one.

The left-libertarian argument however, does not lose its strength in a setting of an automated society. Because the very essence of the argument is based on the property rights to earth's resources and the products derived from those resources, the same (basic) blueprint of the argument stays intact. Therefore, the left-libertarian argument is the strongest argument to justify UBI in an automated society. The machines of the companies mentioned in chapter one: the gourmet-quality hamburger making machines of Momentum Inc.; the conveyer-belt sushi machines of Kura Sushi; Google's and Mercedes-Benz's self-driving cars and trucks; the ATMs used by all the banks in the world and all the machines and computers that enable the use of E-commerce; they are making use of resources that are equally owned by all. In other words, the machines that will drive the automated society are the products of the earth's resources, resources that belong to everyone in an equal share. It is therefore not more then fair that those who own and profit from these machines are morally obligated to compensate those who do not. UBI can serve as such a system of compensation based on the left-libertarian argument of common ownership, which thereby justifies its existence.

A positive side-effect of such a compensation is that the wealth gap between these two groups, which in chapter one has been described as an indisputable negative effect of wide-scale automation, would be narrowed.[93] The compensation tax would reduce the gap by redistributing wealth between those who own the machines (the owners of the property rights) and those who do not (those who lost the ability to initiate their right to ownership). In doing so the huge profits, that the owners of the machines are able to make on the automation of society, can be redistributed fairly to a more equal share of everyone's common ownership of the resources and the machines used in automation.

I argue therefore, that the argument of common ownership can truly justify UBI for an automated society and that the introduction of a UBI, based on this left-libertarian argument, would achieve a more fair distribution of justice within such a society.

The moral justification of UBI

In this chapter I have examined two arguments of distributive justice that justify UBI. The first argument is a liberal-egalitarian argument, which focuses on maximising real freedom for all. The second argument is a left-libertarian argument based on common ownership of the earth and its resources. These two distinct arguments have answered the third question of this paper: "Is UBI morally justifiable?".

In addition to answering this question I have also shown that it is the left-libertarian argument of common ownership that provides the strongest argument in favour of a UBI in an automated society. This is because the machines that will drive such a society are constructed from the resources commonly owned by all, to ensure that everyone enjoys their own shares, a UBI can be used to serve as a system of compensation within such an automated society.

[93] Stein (2016), p. 297.

Conclusion

In this paper the question: *"Can a universal basic income negate the social and economic effects resulting from automation, and if so, is a universal basic income a morally just solution?"* has been answered positively. It has to be mentioned that more experiments have to be conducted and more data has to be collected on the large-scale social effects and financial achievability of UBI. However, based on what evidence there is, the economic theories and proposals to finance UBI and the justifying arguments of distributive justice, I come to the conclusion that UBI is a morally justified solution to negate the social and economic effects resulting from automation.

In chapter one the effects of automation on jobs, society and the capitalist market economy has been described. Due to the advancements in technology more and more jobs would be automated and, as a steady decline over the past decades has shown, fewer and fewer new jobs would be created as a result. The effects of this trend would range from large scale unemployment, a widening income gap between the rich and the poor to the eventual collapse of the consumption-based capitalist economy.

In chapter two UBI was proposed as a solution to negate the effects described in chapter one. Introducing a UBI would imply that all people in society would receive money, on a regular basis, free of any condition.

Chapter three described how such a UBI would replace wage-based income as a primary source of income and how it would enable people to continue make a living without having to work. In addition, the chapter also explained how UBI would theoretically affect freedom and equality in a positive way. However, in order to present UBI as an actual solution, three questions needed to be addressed. The first question was if the theoretical effects on freedom and equality, as described in the third chapter, would actually occur in real life; the second question examined the financial feasibility of UBI; and the third and final question addressed the question whether UBI was morally justifiable.

Chapter four answered the first two questions. By examining and comparing the data collected from two UBI experiments, evidence exists that the theoretical positive effects of UBI do actually occur. At the same time new tax and economic reforms proposals by various economists showed that, at last in theory, UBI would be financially feasible.

In chapter five the question if UBI is morally justifiable has been answered based on two arguments of distributive justice. The first argument is a liberal-egalitarian argument that argues that a UBI would maximin real freedom for all. The second argument is a left-libertarian argument that argues that the earth's resources are commonly owned by all. When one individual claims a resource for his own and uses it to make a profit, he has to compensate other individuals for their loss to own or use that resource. Though both arguments justify UBI, at the end of chapter five I have shown that in the case of automation, the left-libertarian theory of common ownership, provides a stronger argument for justifying UBI. This is because the machines that will drive the automation of society, and with it cause the negative effects as described in chapter one, are constructed from the resources commonly owned by all. Based on the left-libertarian argument of common ownership, a UBI could serve as a system of compensation for the loss of one's common share in an automated society. Implementing a UBI is therefore a morally just solution to negate the negative effects of automation.

"What tends to get forgotten is that, when you're using robots, you're increasing the productivity of the economy," (…) "You want to get that high level of efficiency—but then you want to redistribute the bounty that comes from technology so that everyone can reap the benefits."[94]

[94] Rebelo (2017).

Bibliography

- "Early Rider Program – Waymo", *Waymo*, 2017. [Online]. Available: www.waymo.com. [Accessed: 14- Sep- 2017].
- *"Employment in agriculture (% of total employment) Data*", *Data.worldbank.org*, 2017. [Online]. Available: www.data.worldbank.org. [Accessed: 14- Sep- 2017].
- "*Why Some Customers Prefer Online Business to Traditional Retail Stores", business.com,* 2017. [Online]. Available: www.business.com. [Accessed: 14- Sep- 2017].
- A. Fremstad & M. Paul, (2017). A Short-Run Distribution Analysis of a Carbon Tax in the United States. *Workingpaper series*, number 434.
- A. L. Bovenberg & F. van der Ploeg (1995), Het basis inkomen is een utopie, *Economisch Statistische Berichten*, volume 80 (3995).
- Alaska Permanent Fund Corporation. Apfc.org. Retrieved 9 October 2017, from http://www.apfc.org/home/Content/aboutFund/aboutPermFund.cfm.
- *Automation and anxiety: will smarter machines cause mass unemployment? (June 25, 2016). The Economist, special report*. Retrieved 22 September 2017, from http://www.economist.com/news/special-report/21700758-will-smarter-machines-cause-mass-unemployment-automation-and-anxiety.
- B. Lancee & H. G. van de Werfhorst (2012), Income inequality and participation: A comparison of 24 European countries, *Social Science Research*, Volume 41, Issue 5.
- B. Obama, *Remarks (by the President) on the Economy*, Knox College, Galesburg, IL. July 24, 2013.
- B. Murray & N. Rivers, British Columbia's revenue-neutral carbon tax: A review of the latest "grand experiment" in environmental policy, *Energy Policy*, Volume 86, 2015.
- C. Fourier, (1836). *La fausse industrie*. Paris: Bossange père [et] l'auteur.
- C. Frey, & M. Osborne, (2017). *The future of employment: How susceptible are jobs to computerisation?. Technological Forecasting And Social Change,* 114.
- C. Hill, M. Schilling & G. Jones, *Strategic management*. Boston: Cengage Learning, 2016.
- C. Loew, (2017). *Trains on different tracks for top two Japanese conveyer-belt sushi chains. Seafoodsource.com*. Retrieved 15 September 2017, from https://www.seafoodsource.com/commentary/trains-on-different-tracks-for-top-two-japanese-conveyor-belt-sushi-chains.
- C. McGoogan, (2018). *South Korea introduces world's first 'robot tax'. The Telegraph.* Retrieved 26 February 2018, from http://www.telegraph.co.uk/technology/2017/08/09/south-korea-introduces-worlds-first-robot-tax/.
- Citi & University of Oxford. (2017*) Technology at work v3.0: automating e-Commerce from click to pick to door*. Retrieved 16 September 2017, from http://www.oxfordmartin.ox.ac.uk/downloads/CITI%20REPORT%20ADR0N.pdf.

- Committee on Legal Affairs, *Draft report with recommendations to the Commission on Civil Law Rules on Robotics* (2015/2013 (INL)).
- D. Brady & L. Burton (2016), *The Oxford Handbook of the Social Science of Poverty*: Oxford University Press.
- D. Calnitsky, & J. P. Latner, (2017). Basic Income in a Small Town: Understanding the Elusive Effects on Work. *Social Problems, spw040*.
- D. L. Thornton (2009), *"Personal Saving and Economic Growth," Economic Synopses, St. Louis Fed.*
- D. McCloskey, (2016) *Bourgeois equality*. 1st ed. Chicago: University of Chicago Press.
- E. Bellamy (1888/ 1893), *Looking Backwards*, 2000-1887. Harmondsworth: Penguin.
- E. Brynjolfsson, & A. McAfee, (2016). *The second machine age*. New York: W.W. Norton & Company, Inc.
- E. Brynjolfsson, & A. McFee, (2015) Will Humans Go the Way of Horses? Labor in the Second Machine Age, *94 Foreign Aff.* 8, 14.
- E. Forget (2011). The town with no poverty: the health effects of a Canadian guaranteed annual income field experiment. *Canadian Public Policy*, *37* (3).
- *Early Rider Program*, (2017). *Waymo.com*. Retrieved 14 September 2017, from https://waymo.com/apply.
- *Employment in agriculture (% of total employment) | Data.* (2017). Data.worldbank.org. Retrieved 14 September 2017, from https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?end=2016&name_desc=false&start=1960&view=map.
- F. Levy & R. J. Murnane, (2005). *The New Division of Labor: How Computers Are Creating the Next Job Market.* New Jersey: Princeton University Press.
- G. Caprio, I. Atiyas, & J. Hanson, (1996). *Financial reform*. Cambridge: Cambridge University Press.
- G. Mason, (2017). *Revisiting Manitoba's basic-income experiment. Winnipegfreepress.com.* Retrieved 10 October 2017, from https://www.winnipegfreepress.com/opinion/analysis/revisiting-manitobas-basic-income-experiment-411490895.html.
- *Gratis Geld.* (2014). Retrieved 9 October 2017 from https://www.youtube.com/watchv=HdvAYyMWwq0&t=1771s.
- H. Steiner, (2016). Compensation for liberty lost: Left libertarianism and unconditional basic income. *Juncture*, 22(4).
- H. Tabuchi, (2017). *Kura Focuses on Efficiency, and Profits. Nytimes.com*. Retrieved 14 September 2017, from http://www.nytimes.com/2010/12/31/business/global/31sushi.html.
- *How the computer changed the office forever*, *BBC News* (2017). Retrieved 19 September 2017, from http://www.bbc.com/news/magazine-23509153.
- I. Chaston, (2015). *Internet marketing and big data exploitation*. Hampshire: Palgrave Macmillan.
- J. Cohen (1995), *Self-Ownership, Freedom and Equality*, Cambridge: Cambridge University Press.

- J. Guerreiro, S. Rebelo & P. Teles, (2017). "Robot Tax" Could Reduce Income Inequality. *Kellogg Insight*. Retrieved 17 March 2018, from https://insight.kellogg.northwestern.edu/article/how-a-robot-tax-could-reduce-income-inequality.
- J. Malcolm, (2018). *Here's how Bill Gates' plan to tax robots could actually happen*. *Business Insider*. Retrieved 26 February 2018, from http://www.businessinsider.com/bill-gates-robot-tax-brighter-future-2017-3?international=true&r=US&IR=T.
- J. Titcomb, (2017). Robots that take people's jobs should pay taxes, says Bill Gates. The Telegraph. Retrieved 25 October 2017, from http://www.telegraph.co.uk/technology/2017/02/20/robots-take-peoples-jobs-should-pay-taxes-says-bill-gates/.
- J. Rawls (1971), *A Theory of Justice*, Cambridge, M.A. Harvard University Press.
- J. Rawls (1988), "The Priority of Right and Ideas of the Good." *Philosophy and Public Affairs* 17.
- K. Timpe, (2012). *Free Will 2nd edition*. London: Bloomsbury Publishing.
- K. Widerquist, *About the Alaska Dividend | Alaska Dividend Blog. Usbig.net*. Retrieved 9 October 2017, from http://usbig.net/alaskablog/about-the-alaska-dividend.
- K. Wysocky, *"Mercedes' self-driving truck", Bbc.com*, 2017. [Online]. Available: http://www.bbc.com/autos/story/20140926-mercedes-self-driving-truck. [Accessed: 14- Sep- 2017].
- L. Burman, & S. Rosenthal, (2017). *Financial transaction taxes in theory and practice. Brookings*. Retrieved 27 October 2017, from https://www.brookings.edu/research/financial-transaction-taxes-in-theory-and-practice-2/.
- M. Ford, (2015). *Rise of the robots*. New York: Basic Books.
- M. Friedman, (1962). *Capitalism and Freedom*. Chicago: University of Chicago press.
- M. J. Frankman, (2010). Making the Difference! The BIG in Namibia; Basic Income Grant Pilot Project Assessment Report, April 2009. *Canadian Journal of Development Studies/Revue canadienne d'études du développement, 29(3-4)*.
- M. Murray, & C. Pateman, (2012). *Basic income worldwide*. Basingstoke: Palgrave Macmillan.
- M. Robinson, (2017*). This robot-made pizza in Silicon Valley should terrify Domino's and Pizza Hut. Business Insider*. Retrieved 14 September 2017, from https://www.businessinsider.nl/zume-pizza-robot-expansion-2017-6/?international=true&r=US.
- M. Sommer, (2016). *A feasible basic income scheme for Germany*. Ingolstadt: Springer.
- McKinsey & Company. (2016) *Automotive revolution - perspective towards 2030: How the convergence of disruptive technology-driven trends could transform the auto industry*. Retrieved 16 September 2017. From http://www.mckinsey.com.
- N. Srnicek & A. Williams (2015*). Inventing the Future: Post capitalism and a World Without Work*. London: Verso.
- O. Grut, (2017). *NOBEL ECONOMIST: 'I don't think globalisation is anywhere near the threat that robots are'. Business Insider*. Retrieved 14 September 2017, from https://www.businessinsider.nl/nobel-economist-angus-deaton-on-how-robotics-threatens-jobs-2016-12/?international=true&r=UK.

- *OECD*. (2017). Retrieved 26 October 2017, from http://www.oecd.org/employment/emp/Basic-Income-Policy-Option-2017.pdf
- Op-Ed: *Self-driving cars will disrupt more than the auto industry. Here are the winners and losers. CNBC, (2017).* Retrieved 16 September 2017, from https://www.cnbc.com/2017/05/03/self-driving-cars-will-disrupt-10-industries-commentary.html.
- P. C. Neves, Ó. Afonso & S. T. Silva (2016), *A Meta-Analytic Reassessment of the Effects of Inequality on Growth, World Development,* Volume 78.
- P. C. Neves, Ó. Afonso & S. T. Silva (2016), A Meta-Analytic Reassessment of the Effects of Inequality on Growth, World Development, Volume 78.
- P. Van Parijs & Y. Vanderborght, (2017). *Basic income A Radical Proposal for a Free Society and a Sane Economy*. Cambridge (MA): Harvard University Press.
- P. Van Parijs (1991), " Why Surfers Should be Fed: The Liberal Case for an Unconditional Basic Income, "*Philosophy & Public Affairs*, Vol. 20, No. 2 (Spring, 1991).
- P. Van Parijs (1995), *Real freedom for all: what (if anything) can justify capitalism)*, Oxford: Clarendon Press.
- R. Dworkin (1981b), "What is Equality? Part 2: Equality of Resources," *Philosophy and Public Affairs* 10.
- R. Dworkin, (1981b) *"What is Equality? Part 2: Equality of Resources," Philosophy and Public Affairs 10*, pp. 283-345, reprinted in: R. Dworkin, *Sovereign Virtue. The Theory and Practice of Equality,* Cambridge: Harvard University Press 2000.
- R. Dworkin, *Sovereign Virtue. The Theory and Practice of Equality*, Cambridge: Harvard University Press 2000.
- R. Glass & S. Callahan, (2015), *The big data-driven business*. New Jersey: Wiley.
- R. Minder, (2016). *Guaranteed Income for All? Switzerland's Voters Say No Thanks. Nytimes.com.* Retrieved 6 October 2017, from https://www.nytimes.com/2016/06/06/world/europe/switzerland-swiss-vote-basic-income.html.
- R. Osterkamp, (2013). The basic income grant pilot project in Namibia: a critical assessment. *Basic income studies, 8(1).*
- R. Pereira, (2017). *Financing Basic Income*. Birmingham: Springer International Publishing.
- S. Gosepath, *"Equality", The Stanford Encyclopedia of Philosophy* (Spring 2011 Edition), E. N. Zalta (ed.), from: www.plato.stanford.edu/archives/spr2011/entries/equality/>. (Retrieved 12 February 2018).
- S. Santens, (2017). *How to Reform Welfare and Taxes to Provide Every American Citizen with a Basic Income. Medium.* Retrieved 20 October 2017, from https://medium.com/economicsecproj/how-to-reform-welfare-and-taxes-to-provide-every-american-citizen-with-a-basic-income-bc67d3f4c2b8.
- S. Tani, (2017). *The secret war in Japan's sushi industry. Nikkei Asian Review.* Retrieved 15 September 2017, from https://asia.nikkei.com/Life-Arts/Japan-Trends/The-secret-war-in-Japan-s-sushi-industry.
- T. Cowen, (2016). *Average is over.* 1st ed. New York: Plume Book.

- T. Redmond, N. Sano & N. Schanen, (2017). *How an angry man revolutionised the modern sushi industry. Financial Review*. Retrieved 15 September 2017, from http://www.afr.com/lifestyle/food-and-wine/is-your-sushi-made-by-a-robot-meet-the-man-who-automated-a-7-billion-industry-20170831-gy8lqw.
- T. Spence, (1797). *The rights of infants; or, the imprescriptible right of mothers to such a share of the elements as is sufficient to enable them to suckle and bring up their young in a dialogue between the aristocracy and a mother of children. To which are added, by way of preface and appendix, strictures on Paine's Agrarian justice*. London: printed for the author.
- *Tellers : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics.* (2017). Bls.gov. Retrieved 21 September 2017, from https://www.bls.gov/ooh/office-and-administrative-support/tellers.htm#tab-6.
- *Understanding Social Conflict in Latin America: United Nations Development Programme (2013), Brief Report*, La Paz: Fundación UNIR Bolivia.
- World Economic Forum (2018), *The Global Risks Report 2018: 13th Edition*. Geneva.