The London School of Economics and Political Science

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The Hedonistic Utilitarian Case for Universal Basic Income to Deal with Automation-Induced Unemployment

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Abstract

According to McKinsey Global Institute and OECD, up to 375 million workers worldwide could struggle to move to a new job in the next decade. The jobs that are especially in danger are transportation and logistics workers, office and administration workers, and production occupations. One approach that has been proposed to deal with such large-scale automation is universal basic income.

In this dissertation, I evaluate how strong is the case for universal basic income to deal with automation-induced unemployment normatively and empirically from the perspective of hedonistic utilitarianism. I argue that hedonistic utilitarianism is an attractive moral framework for public policy and the problem of automation because most people and moral frameworks value happiness and most agree that public policy should be impartial and calculating. These are the features that hedonistic utilitarianism promotes.

To determine the normative case, I review the evidence for how strongly the life satisfaction measure correlates with the experience sampling measure. I argue that the experience sampling measure is the best measure currently available from the perspective of hedonistic utilitarianism, but the life satisfaction measure is used more often in policy and happiness research and therefore, could be favored instead of the experience sampling measure if it is an acceptable proxy for it. To determine the empirical case, I review how much evidence there is on the effect of universal basic income on happiness.

The correlation between the life satisfaction measure and the experience sampling measure is around 0.32-0.70 indicating a moderate correlation. Only two studies have been conducted so far on the effect of universal basic income on happiness using the life satisfaction measure and one of them does not provide useful effect sizes and the other is methodologically weak. I conclude that the normative case for universal basic income from the perspective of hedonistic utilitarianism is moderate, but the empirical case is weak.

One of the main methodological limitations of my dissertation is that the effect of unemployment on happiness is difficult to determine because it is not entirely clear whether people become unemployed due to becoming unhappy or whether they become unhappy due to becoming unemployed. Another limitation is that the studies I use assume that the life satisfaction measure is cardinal, whereas it might be more reasonable to interpret it as ordinal.

Contents

1   Introduction

It has been predicted that up to 50% of jobs could be automated in 20 years possibly leaving a lot of people without a job.[1] If progress in artificial intelligence and other technologies continues and some of the predictions about automation turn out to be true, a lot of jobs could be automated in the next decades. Many governmental and international institutions suggest that retraining and investment in education could be solutions to automation-induced job losses, but if new jobs are not created or the unemployed cannot access them then that effort is obsolete. A universal basic income could potentially be a solution in that case, but most institutions do not appear to consider that proposal seriously.

My approach in this dissertation is the following. Firstly, I consider the possibility that technological progress will cause some job automation in the next decade. Secondly, to understand how large the problems presented by automation are, a moral framework is needed as a standard for public policy. Thirdly, to use that moral framework to evaluate the effect of automation and the effects of potential solutions concrete measures are needed. Fourthly, after understanding the potential problem (unemployment), having a moral framework (hedonistic utilitarianism) and a measure of evaluation (the life satisfaction measure), the effect of the problem and the solutions can be assessed. Hence, I evaluate the potential effects of automation-induced unemployment and universal basic income on happiness.

The general question I address in this dissertation is this: how strong is the case for universal basic income to deal with automation-induced unemployment from the perspective of hedonistic utilitarianism? The answer I give to this question covers two parts: the normative part and the empirical part. The normative part covers the methodology, including what measures should be used and how good the measures are that realistically can be used. The empirical part covers what studies currently exist on the effect of universal basic income on happiness. My conclusions are that the normative case for universal basic income is moderate but the empirical case is weak.

The more specific questions I try to answer based on the literature are: (i) what is going to happen on the job market due to automation in the next decade?, (ii) why should hedonistic utilitarianism be used as a moral framework for public policy and the problem of automation?, (iii) what measures should be used to evaluate the problem of automation and the solution of universal basic income?, (iv) what does unemployment do to happiness?, and (v) what effect would the policy proposal of universal basic income have on the happiness of the unemployed?

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1. Carl Benedikt Frey and Michael A. Osborne, "The future of employment: How susceptible are jobs to computerisation?," *Technological Forecasting and Social Change* 114 (January 2017): 254–280, https://doi.org/10.1016/j.techfore.2016.08.019.

2 The Problem of Automation

A lot of technological development is happening that could significantly change the job market. In agriculture, there are apple-picking robots,[2] robotic milking systems,[3] and drones spraying pesticides.[4] In construction, there are brick-laying robots,[5] robots monitoring mistakes on the site,[6] and 3D-printers printing buildings.[7] In law, there is software that reviews commercial loan agreements,[8] there are forecasting systems that predict court decisions,[9] and platforms for analyzing the details of contractual relationships.[10] In medicine, there are artificial intelligent systems that can diagnose scans for heart disease and lung cancer.[11] There are many more innovations in education, finance, and other fields.

These developments are causing concerns that mass unemployment could soon occur. According to opinion polls, there is a high level of concern among Europeans that robots and artificial intelligence steal jobs.[12] This type of fear is not new. With the development of technologies during the Industrial Revolution, people were worried about losing their jobs as well. That worry even resulted in technological vandalism as the so-called Luddites smashed machines and fought against automation.[13] Historically, there is little evidence that automation has caused permanent job loss even though periodically some

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2. Tom Simonite, "Apple-Picking Robot Prepares to Compete for Farm Jobs," *MIT Technology Review*, May 2017, https://www.technologyreview.com/s/604303/apple-picking-robot-prepares-to-compete-for-farm-jobs/.

3. Tom Heyden, "The cows that queue up to milk themselves," *BBC News*, May 2015, https://www.bbc.com/news/magazine-32610257.

4. Yuka Obayashi, "Drones offer high-tech help to Japan's aging farmers," *Reuters*, August 2018, https://www.reuters.com/article/us-japan-farming-drones-idUSKCN1L80TX.

5. Carl Wilkinson, "Bot the builder: the robot that will replace bricklayers," *Financial Times*, February 2018, https://www.ft.com/content/db2b5d64-10e7-11e8-a765-993b2440bd73.

6. Evan Ackerman, "AI Startup Using Robots and Lidar to Boost Productivity on Construction Sites," *IEEE Spectrum: Technology, Engineering, and Science News*, January 2018, https://spectrum.ieee.org/automaton/robotics/industrial-robots/doxel-ai-startup-using-lidar-equipped-robots-on-construction-sites.

7. Richard Brown, "Will 3D printing revolutionise the construction industry?," *Raconteur*, August 2019, https://www.raconteur.net/business-innovation/3d-printing-construction.

8. Debra Cassens Weiss, "JPMorgan Chase uses tech to save 360,000 hours of annual work by lawyers and loan officers," *ABA Journal*, March 2017, http://www.abajournal.com/news/article/jpmorgan_chase_uses_tech_to_save_360000_hours_of_annual_work_by_lawyers_and.

9. Nikolaos Aletras et al., "Predicting judicial decisions of the European Court of Human Rights: a Natural Language Processing perspective," *PeerJ Computer Science* 2 (October 2016): e93, https://doi.org/10.7717/peerj-cs.93.

10. Rob Toews, "AI Will Transform The Field Of Law," *Forbes*, December 2019, https://www.forbes.com/sites/robtoews/2019/12/19/ai-will-transform-the-field-of-law/.

11. Pallab Ghosh, "AI early diagnosis could save heart and cancer patients," *BBC News*, January 2018, https://www.bbc.com/news/health-42357257.

12. David Klenert, Enrique Fernández-Macías, and José-Ignacio Antón, "Don't blame it on the machines: Robots and employment in Europe," Library Catalog: VoxEU, *VoxEU.org*, February 2020, https://voxeu.org/article/dont-blame-it-machines-robots-and-employment-europe.

13. Daniel Susskind, *A World Without Work: Technology, Automation and How We Should Respond* (London: Allen Lane, 2020), 16.

workers have been displaced.[14] Regardless of whether this potential new job automation phenomenon could cause permanent job loss for a lot of people or merely a short period of changes, it could potentially cause a big challenge for society.

Naturally, the extent of future job market disruption in the medium term is difficult establish. In section 2.1, I provide a short overview of various predictions of jobs lost and created in the next decade. In section 2.2, I assess how many people could easily move to newly created jobs and how many are likely to struggle. In section 2.3, I list some methodological issues with these predictions.

2.1 Jobs Destroyed and Jobs Created

There appears to be a lot of disagreement among economists how many jobs will be automated and how many new jobs will be created worldwide in the near future. For example, the MIT Technology Review summarized about 20 different predictions and they range from 2 million jobs destroyed and 1 million new jobs created to 2 billion jobs destroyed and 900 million new jobs created.[15] This range is huge and indicative of how much uncertainty there is on the topic. In addition, some of these studies report job losses and creation in the USA or UK, others in the world. If all of the predictions were modified according to population size, they may not indicate such a large variation. Some of these predictions are not usable anymore as the deadlines have already passed.

One of the predictions that I think makes sense to use is the one by McKinsey Global Institute as they predict job losses and creation by 2030 worldwide.[16] This is the next 10 years and about the entire world. According to them, about 400 million to 800 million jobs could be destroyed and 555 million to 890 million new jobs created.[17] They say that "Our scenarios suggest that by 2030, 75 million to 375 million workers (3 to 14 percent of the global workforce) will need to switch occupational categories."[18] If that transition is slow, then a lot of unemployment might occur.[19] Even if more jobs will be created than destroyed, not everyone who has lost their previous job can immediately move into these new jobs. In that case, there would still be a big challenge for society for dealing with the unemployment.

OECD has predicted that "14% of existing jobs could disappear as a result of automa-

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14. Susskind, *A World Without Work*, 17.

15. Erin Winick, "Every study we could find on what automation will do to jobs, in one chart," *MIT Technology Review*, accessed October 1, 2019, https://www.technologyreview.com/s/610005/every-study-we-could-find-on-what-automation-will-do-to-jobs-in-one-chart/.

16. Ibid.

17. Ibid.

18. James Manyika et al., *Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation* (McKinsey Global Institute, December 2017), https://www.mckinsey.com/~/media/mckinsey/industries/public%20and%20social%20sector/our%20insights/what%20the%20future%20of%20work%20will%20mean%20for%20jobs%20skills%20and%20wages/mgi%20jobs%20lost-jobs%20gained_report_december%202017.pdf.

19. Ibid.

tion in the next 15-20 years, but another 32% are likely to change radically as individual tasks are automated."[20] This is a similar prediction to McKinsey as according to their assessment 375 million workers that could need to move to new categories of jobs accounts for about 14% of the global workforce.[21] OECD's prediction adds to this the aspect that even twice as many jobs will change to a large extent reducing the need for as many workers even if not as many jobs will be completely eliminated. However, it is important to state here that OECD merely states that these 14% of jobs are at high risk of automation not that they will actually be automated.[22] This can be considered as a less pessimistic prediction compared to some other research. They say that automation might not occur to a very large extent because of legal, ethical, public or policy reasons.[23]

2.2 The Nature of Jobs in Danger

To get a better picture of how easy or difficult it could be to move people who have lost their jobs to newly created jobs, it makes sense to understand the nature of the destroyed jobs. If the nature of such jobs is that they are drastically different from the jobs that are likely going to be created, then that creates a good reason for worrying that it might be difficult to move those people to new jobs quickly and that unemployment might be a big challenge. Hence, when McKinsey predicts more new jobs being created than destroyed due to automation that does not eliminate the challenge as many of those jobs might not be filled with people who recently lost their jobs. For example, it might be very difficult for a truck driver whose job requires doing predictable physical tasks to move to a new job that requires complicated personal interaction or advanced reasoning skills.

According to Frey and Osborne, about 47% of US jobs could likely be computerized in the next decades.[24] They analyzed 702 occupations based on whether they are likely to be automated or not according to how well tasks can be specified and performed with computer systems.[25] They concluded that occupations that depend on a lot of social intelligence, are generalist and require knowledge of human heuristics and the development of novel ideas are the least likely to be automated.[26] The kind of jobs that they list here are roles in management, business, and finance such as chief executives.[27] Most jobs in education, healthcare, arts, and media also belong in this category.[28] Engineering and science occupations are also not likely to be automated, because they require a lot

20. *The Future of Work: OECD Employment Outlook 2019* (OECD, 2019), accessed October 5, 2019, https://doi.org/10.1787/9ee00155-en.

21. Manyika et al., *Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation*.

22. *The Future of Work: OECD Employment Outlook 2019*, 13.

23. Ibid.

24. Frey and Osborne, "The future of employment," 268.

25. Ibid., 263.

26. Ibid., 266.

27. Ibid.

28. Ibid.

of creative intelligence. Most transportation and logistics workers, a lot of office and administration workers, and production occupations are at high risk of automation due to progress in automating mobility and dexterity.[29] The jobs that are less likely to be automated correlate strongly with wages and level of education.[30]

According to the McKinsey report, the jobs that are likely not going to be automated or are likely going to be created will require abilities for more personal interaction, advanced levels of cognitive capabilities, and higher levels of education.[31] New work will involve more application of expertise, interacting with stakeholders, managing and developing people, and unpredictable physical activities, whereas it will involve less of processing and collecting data and doing predictable physical activities.[32] More work will require social and emotional skills and higher-level logical reasoning.[33] Since advanced and developing countries have different economic environments, the nature of automation is likely different. They say that in advanced economies the demand for physical activities will reduce, whereas in developing economies it will increase.[34] Jobs that will likely face a lot of automation are those that require minimal levels of education and training such as truck drivers and office clerks.[35]

2.3   Objections to Predictions of Automation

Not all economists are worried about increased automation and mass unemployment in the near future. Keller Scholl and Robin Hanson do not think that there will be any changes in employment in the next decade or so due to automation. They say that the data from 1999 to 2019 does not indicate that an automation revolution that has resulted in job losses has occurred even though they accept that the data could indicate that in the future.[36]

Brynjolfsson and other economists have shown that advanced technologies such as artificial intelligence have not yet brought about increased labor productivity growth.[37] They evaluated four hypotheses for the lack of productivity from artificial intelligence so far: false hopes, mismeasurement, concentrated distribution, and implementation lag.[38] They suggest that the last of these is the most defensible one. Their regression models

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29. Frey and Osborne, "The future of employment," 268.

30. Ibid., 269.

31. Manyika et al., *Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation*, 77.

32. Ibid., 78.

33. Ibid.

34. Ibid., 80.

35. Ibid., 84.

36. Keller Scholl and Robin Hanson, "Testing the automation revolution hypothesis," *Economics Letters* 193 (August 2020): 4, https://doi.org/10.1016/j.econlet.2020.109287.

37. Erik Brynjolfsson, Daniel Rock, and Chad Syverson, *Artificial Intelligence and the Modern Productivity Paradox: A Clash of Expectations and Statistics*, Working Paper 24001, Series: Working Paper Series (National Bureau of Economic Research, November 2017), 1–44, https://doi.org/10.3386/w24001.

38. Ibid., 6.

show that the productivity growth of a previous decade does not predict the productivity growth of the next decade well, indicating that the current lack of productivity growth should not necessarily be extrapolated into the future.[39] Instead, they suggest looking at specific technologies and assessing what their potential is.[40] This in turn makes them more optimistic about the promise of productivity growth from artificial intelligence. Hence, the fact that we can currently observe little automation does not mean that this will continue in the near future.

There are other economists who disagree. Acemoglu and Restrepo, for example, argue that there is an important difference between human beings and horses who became economically useless due to automation.[41] Humans can find new tasks to be done and adapt to economic changes, whereas horses cannot.[42] But Oxford economist Daniel Susskind disagrees with this and says that for now, this assumption, that human beings are best equipped to perform new tasks that arise in the economy, may well still be right.[43] But look further into the future, and it is far from clear that this will always be the case.[44] Why assume that these tasks will always be ones that human beings are best placed to do?[45] Despite this, he acknowledges that very clear predictions about automation are likely wrong as there is a tendency to overestimate the impact of technology in the short-term and underestimate it in the long-term.[46]

I agree that mass unemployment due to automation is not guaranteed and these predictions should be used cautiously. I assume in the rest of the dissertation that the predictions of McKinsey and OECD are plausible and up to 375 million people worldwide could struggle to find a new job after becoming unemployed in the next decade. I think that these predictions are plausible mainly because of impressive technological innovation occurring in many industries.

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39. Brynjolfsson, Rock, and Syverson, *Artificial Intelligence and the Modern Productivity Paradox*, 13–16.
40. Ibid., 16.
41. Susskind, *A World Without Work*, 120.
42. Ibid.
43. Ibid., 121.
44. Ibid.
45. Ibid.
46. Ibid., 128.

3 Hedonistic Utilitarianism as a Moral Framework for Public Policy

Why is such automation in the next decade a problem and how big of a problem is it? I base my answers to these questions on the impact of automation on aggregate hedonistic quality of life. This assessment is equivalent to how a form of hedonistic utilitarianism would evaluate the potential disruption of the job market. Implementing hedonistic utilitarianism for public policy is controversial and I offer a defense of it against strong objections. It is important to note that my analysis will be of interest even on views that are not thoroughgoingly hedonistic and utilitarian. For one, even rival views of well-being typically regard hedonistic impact as one important component of well-being. And other views of distributive justice, such as pluralist egalitarian views, weigh total well-being alongside equality, so that the former is a relevant consideration. Finally, even non-consequentialist views may consider aggregate hedonistic impact of changes (and policies to mitigate them) one morally important consideration, among others.

I ignore general arguments in favor of and against hedonistic utilitarianism because of the scope of the dissertation. I focus instead on a key objection directly relevant to public policy and automation, which is whether interpersonal comparison of happiness is possible. In section 3.1, I provide an overview of the account of hedonistic utilitarianism. In section 3.2, I offer arguments in favor of hedonistic utilitarianism as a moral framework for public policy. In section 3.3, I respond to an objection to hedonistic utilitarianism as a moral framework for public policy.

3.1 What Is Hedonistic Utilitarianism?

Hedonistic act utilitarianism (from this point forward, just *hedonistic utilitarianism*) is the view that an act is morally right if and only if it produces the greatest balance of pleasure over pain of all feasible alternative acts.[47] It is a consequentialist account because nothing other than the consequences of an act matters intrinsically. Other things can matter instrumentally depending on how they influence the consequences (the balance of pleasure over pain). It is a version of utilitarianism because it aims at nothing else but the well-being of sentient beings with the latter understood as the balance of pleasure over pain (rather than other things which are sometimes held to be components of well-being, such as health). The view assumes that (i) pleasure and pain can be measured, (ii) interpersonally compared, (iii) there is a neutral point of no pleasure or pain, and (iv) that a unit of pleasure or pain is morally equivalent regardless of who has it, as long

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47. Simon Rosenqvist, "Hedonistic Act Utilitarianism: Action Guidance and Moral Intuitions" (PhD Thesis, Uppsala University, 2020), 15.

as they are sentient.[48]

To proceed to novel issues in policy evaluation, I focus on this form of act utilitarianism (rather than, for example, some form of rule utilitarianism), and set aside questions of whether average or total utilitarianism is the right view by assuming, for simplicity, that our policy options do not influence population size. I focus on hedonistic utilitarianism instead of a more popular utilitarian view called 'preference utilitarianism.' *Preference utilitarianism* is a view according to which what is best for someone is what satisfies their preferences the best.[49] I set aside the discussion about which of these views is more defensible and assume that in the case of automation, policy proposals targeted at happiness are not pursued in opposition to the preferences of the unemployed. Happiness is at the very least part of what people prefer when it comes to employment.

Hedonistic utilitarianism evaluates the moral rightness of an act according to how much pleasure it causes and how much pain it reduces. There are three main ways to understand the idea of 'pleasure minus pain' that hedonistic utilitarianism commits to. The first can be called *the sensation view* according to which what is considered when calculating pleasure minus pain is the intensity and duration of pleasure and pain sensations.[50] The second can be called *the attitudinal view* according to which what is considered when calculating pleasure minus pain is the intensity and duration of propositional attitudes in relation to pleasure and pain.[51] This means that what makes various sensations and feelings pleasurable or painful is the attitude towards them in the form of beliefs.[52] The third can be called *the pleasantness view* according to which what is considered when calculating pleasure minus pain is the intensity and duration of the (un)pleasantness of all pleasure and pain sensations.[53] This means that what makes various sensations and feelings pleasurable or painful is a judgment of how pleasant or unpleasant they are.

I reject the attitudinal view because it implies that less sophisticated beings such as chickens who probably cannot form propositional beliefs but can feel sensations in their bodies cannot have pleasure and pain.[54] I favor the pleasantness view over the sensation view, because the only thing clearly in common between different sensations is how pleasant they are according to the agents judging those sensations. For example, some people find the painful sensations in muscles during strength training pleasant whereas others do not. Some would define pleasure as a sensation that is judged to be preferred and pain as a sensation that is judged to be unpreferred in which case

48. Torbjörn Tännsjö, *Hedonistic Utilitarianism*, 1st edition (Edinburgh: Edinburgh University Press, March 1998), 64–65.

49. Derek Parfit, *Reasons and Persons* (Oxford: Oxford University Press, February 1986), 493.

50. Rosenqvist, "Hedonistic Act Utilitarianism," 25.

51. Ibid., 26.

52. Katarzyna de Lazari-Radek and Peter Singer, *The Point of View of the Universe: Sidgwick and Contemporary Ethics* (Oxford University Press, June 2016), 248.

53. Rosenqvist, "Hedonistic Act Utilitarianism," 27.

54. Ibid., 26.

the sensation view and pleasantness view would be the same. To maintain that this view is indeed hedonistic utilitarianism the judgments must be about the pleasantness of sensations only rather than preferences about other things like how much an experience increases someone's status in society.

3.2 Why Hedonistic Utilitarianism Is an Attractive Framework

3.2.1 Most People and Other Moral Frameworks Value Happiness

Public policy can be characterized by three features: (i) some policy or other is needed to deal with a problem, hence a compromise has to be reached if there is a disagreement; (ii) there is a bias toward the current policy, and (iii) a moral view used for policy has to be widely accepted.[55] I focus on (iii), because this section is about what moral framework to choose for public policy in general and the issue of automation in particular. How widely accepted are the key aspects of hedonistic utilitarianism by society? By 'widely accepted,' I mean that most people and most moral frameworks consider the value of happiness to be important or even the most important one and they usually agree that public policy should be impartial and calculating.

Most people value happiness, which is indicated by a wide range of psychology and self-development books in bookstores and libraries. It is plausible to assume that the public, at least in Western countries, considers happiness very important or even the most important value in life.[56] Most Americans consider their personal happiness to be very important and report thinking about it at least once a day.[57] In most cultures, people consider happiness to be one of their most important goals in life.[58] Furthermore, in the case of job automation, it is plausible to think that happiness is part of what matters to people, because one of the topics in public conversations about automation alongside many others is how could people have meaning in their lives without work.[59] It is important to note that 'meaning' does not generally stand for 'happiness' in philosophical literature,[60] but in some discussions about automation happiness has been a component

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55. Jonathan Wolff, *Ethics and Public Policy: A Philosophical Inquiry*, 2nd edition (New York: Routledge, August 2019), 4.

56. Dan Haybron, "Happiness," in *The Stanford Encyclopedia of Philosophy*, Summer 2020, ed. Edward N. Zalta (Metaphysics Research Lab, Stanford University, 2020), https://plato.stanford.edu/archives/sum2020/entries/happiness/.

57. Ed Diener et al., "National differences in reported subjective well-being: Why do they occur?," *Social Indicators Research* 34, no. 1 (January 1995): 25, https://doi.org/10.1007/BF01078966.

58. Sonja Lyubomirsky, "Why are some people happier than others? The role of cognitive and motivational processes in well-being," *American Psychologist* 56, no. 3 (2001): 239, https://doi.org/10.1037/0003-066X.56.3.239.

59. For example, some recent popular books include an entire chapter for the issue of how automation could have an impact on meaning in life: Susskind, *A World Without Work*; Andrew Yang, *The War on Normal People: The Truth About America's Disappearing Jobs and Why Universal Basic Income Is Our Future* (New York: Hachette Books, April 2018).

60. Thaddeus Metz, "The Meaning of Life," in *The Stanford Encyclopedia of Philosophy*, Summer 2013, ed. Edward N. Zalta (Metaphysics Research Lab, Stanford University, 2013), https://plato.stanford.

of meaning.

Furthermore, all other defensible moral frameworks seem to support the pursuit of happiness or even consider it very important.[61] Other well-being based frameworks such as desire theories consider happiness to be important, because most people desire to be happy.[62] Virtue ethics probably gives happiness some importance as there cannot be flourishing without being happy even though happiness alone does not suffice for flourishing.[63] Deontology probably implies some focus on happiness as according to a Kantian version of it, it is important to treat a person as an end not merely as a means and making someone happier is one way to treat them as an end, because happiness is an end most people have.[64]

Based on the points that most people care about happiness and most moral frameworks support the pursuit of happiness, it seems that there is a good case to be made that the importance of happiness, which hedonistic utilitarianism values, has a wide acceptance among the public and professional philosophers and can be used to inform public policy. I do acknowledge that I switched from talking about pleasure and pain to talking about happiness, which may cause confusion. The main reason is that pleasure and pain are widely recognized as important components of happiness. Pleasure and pain may not be synonymous with happiness but they are very related if happiness is defined as a state of mind.[65] Happiness often refers to a more sustainable and lasting mental state compared to pleasure and pain, which are considered to be more short-term.[66] However, this difference is not significant for the purpose of this discussion as hedonistic utilitarians are interested in the balance of pleasure over pain over the long-term, not merely an occasional pleasure from eating a piece of chocolate, which may have a negligible effect on someone's happiness.

3.2.2 Public Policy Should Be Impartial and Calculating

The hedonism part of hedonistic utilitarianism is widely accepted, but the utilitarianism part needs to be widely accepted as well to qualify as a framework for public policy, because public policy requires a normative framework to decide how to distribute the values it wants to distribute. Hedonism alone merely provides the value of happiness, but it does not say how to distribute it to the population. Adding utilitarianism means stating that actions should be taken to increase the total amount of happiness in the world without discriminating who receives that happiness as long as more happiness gets

edu/archives/sum2013/entries/life-meaning/.

61. Haybron, "Happiness."

62. Ibid.

63. Ibid.

64. Thomas E. Hill, "Happiness and Human Flourishing in Kant's Ethics," *Social Philosophy and Policy* 16, no. 1 (1999): 148, https://doi.org/10.1017/S0265052500002284.

65. Haybron, "Happiness."

66. Lazari-Radek and Singer, *The Point of View of the Universe*, 249.

produced.

A major criticism of utilitarianism usually is that it is too impartial. It fails to consider people's personal histories, attachments, and commitments when providing a standard for distribution.[67] People, for example, love their own children much more than the children of other people, but utilitarianism says it is wrong to provide resources to their own children that they do not really need. They should give those resources away to strangers in greater need and whose well-being would increase much more from those extra resources. It seems very counterintuitive that a loving parent buying toys for their children is doing something wrong. Hence, utilitarianism seems an indefensible moral framework.

While this criticism might have a lot of strength when it comes to how someone should live their personal life, it is actually a strength of utilitarianism when it comes public policy that it is so impartial.[68] Public servants are supposed to be as impartial as possible and serve the public at large without considering someone's personal histories, attachments, and commitments without evaluating how to use public resources so that it provides the most benefit to as many people as possible, albeit usually in the context of a target population in a nation or region not in the whole world.[69] For example, it seems correct that a father going to an emergency department with his daughter having a broken hand has to wait in line for other more serious life-threatening injuries to be treated first. In that way, the medical system can help more people and to a larger extent than if it were partial to someone's personal interests.

I assume that in this discussion universal basic income is not meant to be provided for the entire world and then paid only by affluent nations. This would be politically unfeasible and morally contested. Hedonistic utilitarianism probably would not be defended by most people if it asked for that. In the current context, universal basic income refers to regular income to everyone in a country/some region paid by people in that country/region. This is politically more feasible and the impartiality is more likely accepted. Universal basic income, of course, is not favored by the majority everywhere, but the reasons for that are likely other than the opposition to impartiality by public servants (except for anti-immigration views).[70]

Another major criticism of utilitarianism is that it is too calculating.[71] It requires someone to consider all alternative acts available to them and then calculate which of these would bring about more well-being to themselves and to others. This seems like an unreasonable thing to expect from someone in their private life. Suppose someone wants

67. Robert E. Goodin, *Utilitarianism as a Public Philosophy* (Cambridge: Cambridge University Press, 1995), 8.

68. Ibid.

69. Ibid., 9.

70. Tim Vlandas, "The Politics of the Basic Income Guarantee: Analysing Individual Support in Europe," *Basic Income Studies* 14, no. 1 (June 2019), https://doi.org/10.1515/bis-2018-0021.

71. Goodin, *Utilitarianism as a Public Philosophy*, 9.

to go to a cinema to have a good time. Utilitarianism asks that they calculate how much well-being they would receive from that compared to numerous other acts that they could take such as donating that money to a charity, spending extra two hours at work, playing sport with friends, etc. Furthermore, how is someone even supposed to calculate all of this?

Again, while this criticism might have a lot of strength when it comes to how someone should live their personal life, it is actually a strength of utilitarianism when it comes to public policy that it is so calculating. It would be irresponsible of public servants to take public action without very carefully considering as many alternative acts available to them in terms of how many people and to what extent they would benefit.[72] Furthermore, public institutions are expected to have resources to do these kinds of calculations as they should have hired relevant experts and have at least some resources to carry out cost-benefit analysis to determine the best policies.

Utilitarianism may in principle demand a level of calculation that could not be accomplished even by the best experts, but I ignore such a demanding standard here. I focus on the effect of automation in the next decade on unemployment, which is hard to predict but it is plausible that it is not as difficult and demanding as predicting the effect of automation in the next centuries. The exact numbers are hard to predict but the magnitude and trends seems more likely to be predictable. I am not aware of extensive empirical evidence that would confirm or reject this hypothesis, but there is some evidence to cause some optimism and pessimism about decade-long (or longer) predictions: three studies found that technological (or other domains, such as demographics and economy) predictions have accuracies of 76%,[73] <50%,[74] and 18-41%.[75] Furthermore, in the context of automation and unemployment other things besides predictions are less demanding to calculate such as what effect unemployment has on happiness and how much various policies could increase happiness.

Based on the point that public policy should be as impartial and calculating as is realistic and feasible, and that utilitarianism promotes these features of public policy, makes hedonistic utilitarianism an attractive framework for the issue of automation. I acknowledge that this is a limited form of utilitarianism as in the strictest form, it would demand greater impartiality and calculation than I present here. The strict form of hedonistic utilitarianism would claim that any act that does not maximize the total

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72. Goodin, *Utilitarianism as a Public Philosophy*, 9.

73. Alexander Kott and Philip Perconti, "Long-term forecasts of military technologies for a 20–30year horizon: An empirical assessment of accuracy," *Technological Forecasting and Social Change* 137 (December 2018): 272–279, https://doi.org/10.1016/j.techfore.2018.08.001.

74. Richard E. Albright, "What can past technology forecasts tell us about the future?," *Technological Forecasting and Social Change*, TF Highlights from ISF 2001, 69, no. 5 (June 2002): 443–464, https://doi.org/10.1016/S0040-1625(02)00186-5.

75. Carie A. Mullins, *Retrospective Analysis of Long-Term Forecasts* (Bryce Space and Technology, July 2018), https://www.openphilanthropy.org/files/Blog/Mullins_Retrospective_Analysis_Longterm_Forecasts_Final_Report.pdf.

amount of happiness in the universe is wrong. This is not my approach here as it would not be as widely accepted for public policy as a more moderate version that I have suggested. I still consider this as a form of utilitarianism because its focus on impartial aggregation of happiness using the totality of scientific evidence and data available to public servants.

3.3 Objection to Hedonistic Utilitarianism as a Framework for Public Policy

To be able to assess how big of a problem automation is from the perspective of hedonistic utilitarianism and how successful various policy proposals could be for fixing the problem, pleasure and pain must be measurable and interpersonally comparable. Theoretically most people can measure their happiness through introspection and scientists can collect that data from people through questionnaires despite not being able to directly observe mental states. This kind of hedonistic calculation can theoretically be done in a way that measures both the intensity and duration of pleasures and pains. The first thing that can be measured is the smallest change in the intensity of a pleasurable or painful experience.[76] The second thing that can be measured is the smallest change in subjective (felt) rather than objective (physical) duration of a pleasurable or painful experience.[77] If the noticeable difference of an experience is pleasant, then a positive number can be assigned to it; if it is unpleasant, then a negative number can be assigned to it.[78] The experience can be multiplied with the time that the experience lasts.

Despite the possibility of measuring intrapersonal happiness, it might not be possible to measure interpersonal happiness. Hedonistic utilitarianism assumes interpersonal comparison of happiness and if this is not possible, then hedonistic utilitarianism cannot be used as a moral framework for public policy. By 'interpersonal comparison,' I mean whether the quantity of some mental state of one person can be compared and traded off with another person's. This objection has been stated in the following way: "Introspection does not enable A to discover what is going on in B's mind, nor B to discover what is going on in A's. There is no way of comparing the satisfactions of different people."[79] Furthermore, if A disagreed with B's claims about how much more B gains pleasure from consuming something than A, B could not prove that to A.[80] A cannot have access to B's introspection directly, B cannot have access to A's introspection directly, and other people cannot have access to A's nor B's introspection directly.[81] In addition, public policy

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76. Tännsjö, *Hedonistic Utilitarianism*, 68.

77. Ibid.

78. Ibid.

79. Lionel Robbins, *An Essay on the Nature and Significance of Economic Science* (Ludwig von Mises Institute, 2007), 124.

80. Ibid.

81. Alvin I. Goldman, "Simulation and Interpersonal Utility," *Ethics* 105, no. 4 (July 1995): 717.

that implements happiness research assumes that mental states can be quantified on a cardinal scale. By 'cardinal scale,' I mean that mental states can be compared according to quantities, not just rankings. Does it make sense to say that buying a new computer gives A 10 more units of pleasure compared to B spending that same money on a trip to Iceland?

Theoretically, interpersonal utility can be compared by imagining being in the shoes of other people with all (or the most relevant) of their circumstances such as education and social background.[82] In other words, how would I feel like if I were them in their circumstances? This approach has been called simulation or the empathetic approach indicating that it is possible to simulate someone's experience and empathize with them. Just anecdotally, it seems that people make interpersonal comparisons all the time by imagining being in the shoes of other people. A common way in many religions and cultures to imagine what other people are experiencing is called the golden rule, which recommends to treat others as you would want them to treat you. However, the approach of simulation would rather recommend to treat others as you would want to be treated if you were in their circumstances. How well can third parties evaluate someone's mental states without having direct introspective access to it? This question needs to be studied more extensively empirically, but there is some evidence that third parties can be moderately successful at evaluating other people's experiences as a meta-analysis reported a mean correlation of 0.42 between self-reports and informant reports of well-being, including measures of affect and life satisfaction.[83] The correlation of 0.42 is usually considered a moderate association in social sciences.

I acknowledge that such interpersonal comparison can be made only approximately. This approach has the problem of being computationally very demanding. It requires access to so much information that it seems impossible to be certain about the experiences of other people. There is no way to guarantee certainly that A really gained 10 units more pleasure than B. There is some range of error that will inevitably occur when measuring unobservable mental states and comparing the mental states of different people. The error has to be sufficiently low for it to be reasonable to use moral frameworks that require the measurement of mental states. The evidence that third parties are moderately successful at reporting the well-being of other people indicates that interpersonal comparison can be made to an acceptable level even though the ability to do so does not seem to be strong.

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82. Goldman, "Simulation and Interpersonal Utility," 717.

83. Leann Schneider and Ulrich Schimmack, "Self-Informant Agreement in Well-Being Ratings: A Meta-Analysis," *Social Indicators Research* 94, no. 3 (January 2009): 363–376, https://doi.org/10.1007/s11205-009-9440-y.

4 Life Satisfaction as a Measure for Automation and Universal Basic Income

If hedonistic utilitarianism works well as a moral framework for public policy, then the next question is what concrete measures should be used to evaluate the problem of automation and the solution of universal basic income. Happiness studies use various evaluation, experience, and eudaimonic measures,[84] but I focus on the life satisfaction measure and the experience sampling measure in particular, because they have recently been the most commonly used and discussed measures. The experience sampling measure has been called the gold standard of happiness measurement by some researchers.[85]

In section 4.1, I briefly describe the life satisfaction and the experience sampling measures and make the case for using the life satisfaction measure for practical reasons. In section 4.2, I review the literature on the association between these measures and make the case that the life satisfaction measure is an acceptable proxy for the experience sampling measure. In section 4.3, I respond to the objection that the life satisfaction and the experience sampling measure are not accurate enough to be used for public policy.

4.1 Life Satisfaction and Experience Sampling

The life satisfaction measure is a method to collect data about people's assessments of their life or domains of life, often in the form of satisfaction with life overall.[86] Participants are asked a single question or multiple questions related to their evaluation of their life. They may be asked the following questions: "All things considered, how satisfied are you with your life as a whole these days?", "Taken all together, how would you say things are these days?", or "Would you say that you are very happy, pretty happy, or not too happy?"[87]

The experience sampling measure is a method to collect data about the moments of people's lives.[88] Participants carry electronic pagers (or smartphones) to notify them to report about their experience at that moment and specify what they were doing, where

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84. Paul Dolan and Robert Metcalfe, "Measuring Subjective Wellbeing: Recommendations on Measures for use by National Governments," *Journal of Social Policy* 41 (April 2012): 409–427, https://doi.org/10.1017/S0047279411000833.

85. Erik Angner, "Is it possible to measure happiness?: The argument from measurability," *European Journal for Philosophy of Science* 3, no. 2 (May 2013): 225, https://doi.org/10.1007/s13194-013-0065-2.

86. Dolan and Metcalfe, "Measuring Subjective Wellbeing," 414.

87. Daniel Kahneman and Alan B. Krueger, "Developments in the Measurement of Subjective Well-Being," *Journal of Economic Perspectives* 20, no. 1 (March 2006): 6, https://doi.org/10.1257/08953300 6776526030.

88. Reed Larson and Mihaly Csikszentmihalyi, "The Experience Sampling Method," in *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi*, ed. Mihaly Csikszentmihalyi (Dordrecht: Springer Netherlands, 2014), 24, https://doi.org/10.1007/978-94-017-9088-8_2.

they were, and other relevant details.[89] Questions that the participants are asked are related to the content of their thoughts; their cognitive, emotional, and motivational states; and perceptions of the current situation.[90]

From the perspective of hedonistic utilitarianism, the best measure to evaluate the problem of automation and the solution of universal basic income is experience sampling. The reason is that the experience sampling measure focuses only or mostly on mental states such as pleasure and pain, which are what hedonistic utilitarianism values. The experience sampling measure is a moment-based measure, which measures the affective states of individuals at particular moments, whereas the life satisfaction measure is a memory-based measure, which measures what individuals remember to evaluate about their life overall.[91] In other words, the experience sampling measure tries to answer the question 'how are you now?', whereas the life satisfaction measures tries to answer the question 'how have you been?'[92] Hedonistic utilitarianism is interested in the former. Furthermore, one of the key features of the experience sampling measure is to ask an agent to judge their current feelings and emotions as positive or negative and providing a rating of that on some scale. This is precisely what the pleasantness view of hedonistic utilitarianism that I defended in section 3.1 implies as an agent is asked to evaluate their bodily sensations to decide whether they are pleasant or not and to what extent.

The experience sampling measure should be used if it is available, but the life satisfaction measure is more commonly used in public policy and happiness research.[93] For practical purposes, the life satisfaction measure might be required and the important question now is how well it can measure pleasure minus pain what hedonistic utilitarianism commits to. In other words, how well do the life satisfaction and the experience sampling measures correlate? Furthermore, the only studies that have measured happiness of the very few studies conducted on universal basic income have used the life satisfaction measure, none have used the experience sampling measure. The implementation of the experience sampling measure has been limited, because it is hard to use in large studies.[94]

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89. Larson and Csikszentmihalyi, "The Experience Sampling Method," 23.
90. Ibid.
91. Daniel Kahneman, "Experienced Utility and Objective Happiness: A Moment-Based Approach," in *Choices, Values, and Frames*, ed. Amos Tversky and Daniel Kahneman (Cambridge: Cambridge University Press, 2000), 681, https://doi.org/10.1017/CBO9780511803475.038.
92. Ibid., 675.
93. Dolan and Metcalfe, "Measuring Subjective Wellbeing," 414.
94. Kahneman and Krueger, "Developments in the Measurement of Subjective Well-Being," 10.

4.2　How Well Does Life Satisfaction Measure Pleasure Minus Pain?

To use the life satisfaction measure as a proxy for the experience sampling measure, it needs to correlate well with it. Psychologists generally consider these measures different from each other and think that they should be studied separately.[95] Hence, it is not reasonable to just use the life satisfaction measure and believe that it has the same implications for what policies to develop and adopt as the experience sampling measure would.

There are to my knowledge 10 studies in total that have explored the association between the life satisfaction and the experience sampling measures.[96] According to all of these studies, the correlation between the life satisfaction and the experience sampling measures ranges between 0.27 and 0.91. In social sciences, correlations are usually considered moderate when they are between 0.4 and 0.6, and weak if lower and strong if greater.[97] These studies, however, have limitations, so it makes sense to look at them individually. I consider the most important limitations to be related to the selection of participants, whether there is adjustment for measurement errors, and the plausibility of substantive assumptions. It is important to acknowledge that all of the studies used more or less recall-based measures of affect rather than moment-based measures. Sometimes they asked participants to report their mental states from a month ago, sometimes a week

95. Martin Berlin and Filip Fors Connolly, "The association between life satisfaction and affective well-being," *Journal of Economic Psychology* 73 (August 2019): 34, https://doi.org/10.1016/j.joep.2019.04.010.

96. Berlin and Fors Connolly, "The association between life satisfaction and affective well-being"; Liisi Kööts-Ausmees, Anu Realo, and Jüri Allik, "The relationship between life satisfaction and emotional experience in 21 European countries," *Journal of Cross-Cultural Psychology* 44, no. 2 (2013): 223–244, https://doi.org/10.1177/0022022112451054; Maike Luhmann et al., "Time frames and the distinction between affective and cognitive well-being," *Journal of Research in Personality* 46, no. 4 (August 2012): 431–441, https://doi.org/10.1016/j.jrp.2012.04.004; Maja Wiest et al., "Subjective well-being and mortality revisited: differential effects of cognitive and emotional facets of well-being on mortality," *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association* 30, no. 6, 728–735, https://doi.org/10.1037/a0023839; Daniel Kahneman and Angus Deaton, "High income improves evaluation of life but not emotional well-being," *Proceedings of the National Academy of Sciences*, no. 38 (September 2010): 16489–16493, https://doi.org/10.1073/pnas.1011492107; Andreas Knabe et al., "Dissatisfied with Life but Having a Good Day: Time-use and Well-being of the Unemployed*," *The Economic Journal* 120, no. 547 (2010): 867–889, https://doi.org/10.1111/j.1468-0297.2009.02347.x; Alan B. Krueger and David A. Schkade, "The Reliability of Subjective Well-Being Measures," *Journal of public economics* 92, nos. 8-9 (August 2008): 1833–1845, https://doi.org/10.1016/j.jpubeco.2007.12.015; Daniel Kahneman et al., "A survey method for characterizing daily life experience: the day reconstruction method," *Science (New York, N.Y.)* 306, no. 5702 (December 2004): 1776–1780, https://doi.org/10.1126/science.1103572; Ulrich Schimmack et al., "Culture, personality, and subjective well-being: Integrating process models of life satisfaction," *Journal of Personality and Social Psychology* 82, no. 4 (2002): 582–593, https://doi.org/10.1037/0022-3514.82.4.582; Richard E. Lucas, Ed Diener, and Eunkook Suh, "Discriminant validity of well-being measures," *Journal of Personality and Social Psychology* 71, no. 3 (1996): 616–628, https://doi.org/10.1037/0022-3514.71.3.616.

97. James D Evans, *Straightforward statistics for the behavioral sciences* (Pacific Grove: Brooks/Cole Pub. Co., 1996).

ago, sometimes from previous days. The latter is closer to moment-based measures.[98]

I have provided an overview in Appendix A of individual studies assessing the correlations between the experience sampling measure and the life satisfaction measure together with key limitations of each study.[99] Based on the strengths and weaknesses of these studies, I think that the more likely correlation is somewhere between 0.32-0.70 because the study with the best participant selection found a correlation of around 0.51 and adjustments for measurement errors increased the correlation in two studies by about 0.05-0.19. The correlation between these measures is probably moderate, but weak or strong correlations cannot be ruled out. This means that the life satisfaction measure is an acceptable proxy for the experience sampling measure when the latter is not available, but it is probably not a strong proxy.

4.3 Objections to the Measures Used for Hedonistic Utilitarianism

A weak version of the measurability criticism claims that (current) measures of happiness are so inaccurate that governments relying on them would be a mistake. The only way to evaluate mental states is to rely on people's introspection and people's introspective abilities have been found to be misleading at times. In life satisfaction questionnaires, people's judgments of how happy they are with their lives have been influenced by the way questionnaires have been administered and small changes in participants' mood.[100] For example, it has been found that when participants are anchored to think about some positive or negative event in their life, then they give a different score for their happiness than otherwise.[101] The same occurs when participants are asked to compare themselves to other people, when the make-up of the room is different, or the weather is sunny.[102] It is doubtful that such factors would have a big impact on someone's actual happiness, which is why these findings generate skepticism of people's ability to evaluate their happiness. Some psychologists have concluded that these introspective judgments do not reflect people's inner state properly, they are constructions that are created from the information currently available to participants and are influenced by random things

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98. When participants try to remember how they felt during last months, then they might rely on similar kinds of information when evaluating their affects as well as their life satisfaction. See: Kahneman, "Experienced Utility and Objective Happiness," 681.

99. To clarify, the studies that I highlight in Appendix A use the terms 'positive affect,' 'negative affect,' and 'net affect,' which just mean positive and negative feelings and emotions, and the balance of positive and negative feelings and emotions. 'Net affect' more or less refers to pleasure minus pain, but not all studies calculate net affect, many measure positive and negative affect separately. In addition, the life satisfaction measures and experience sampling measures that are used in these studies can be different, but I consider them all the same for simplicity.

100. Anna Alexandrova, "First-Person Reports and the Measurement of Happiness," *Philosophical Psychology* 21, no. 5 (October 2008): 574, https://doi.org/10.1080/09515080802412552.

101. Ibid.

102. Ibid., 575.

that should not have an impact on participant's judgment of their happiness.[103]

This problem can be reduced significantly if not eliminated by better survey design. More complex questionnaires can be used to direct people to put a lot of effort into answering questions about how happy they are with their life on the whole because it requires an understanding of one's goals and how well they have been able to achieve these goals overall.[104] Furthermore, these questionnaires can create the right frame of mind and avoid giving irrelevant information to participants.[105] In addition, there is some research concluding that life satisfaction reports are quite stable across time and circumstances.[106] Furthermore, these questionnaires have been found to correlate well with other physiological, behavioral, and circumstantial measures.[107] For example, happiness reports have been found to correlate with material quality of life and frequency of smiling.[108]

There are two things social scientists check to understand how much a measure can be trusted: reliability and validity. These can be the basis for deciding whether a measure is sufficiently trustworthy for public policy. *Reliability* refers to whether the measure provides similar scores under the same conditions.[109] This means that different questions that are supposed to evaluate the same concept should provide similar results and that the same questions asked again after some period should provide similar results.[110] The reliability coefficients have been in the 0.80 ranges or higher for multi-item life satisfaction scales indicating high reliability, and in the range of 0.50-0.80 for single-item life satisfaction scales indicating lower consistency than the multi-item scales but still close to being acceptable.[111] *Validity* refers to whether the measure tracks the right concept.[112] This means that the scale that is used to measure happiness should actually measure happiness not something else. Does evidence indicate that variance in the life satisfaction measure is explained by other indicators that are likely to contribute to happiness? The life satisfaction score seems to be sufficiently correlated with the reports of friends; some plausible causes and effects of well-being; physical function, and measures of brain activity.[113] The life satisfaction score correlates with civil and political rights, political freedom, lower levels of corruption, and economic output.[114] Furthermore, the life satis-

103. Alexandrova, "First-Person Reports and the Measurement of Happiness," 575.

104. Ibid., 579.

105. Ibid.

106. Ibid.

107. Edward Skidelsky, "What can we learn from happiness surveys?," *Journal of Practical Ethics* 2, no. 2 (2014): 27, https://ora.ox.ac.uk/objects/uuid:0aea52c2-b0a9-4d03-a6ea-50d8bdcc0af0.

108. Ibid.

109. Ed Diener, Ronald Inglehart, and Louis Tay, "Theory and Validity of Life Satisfaction Scales," *Social Indicators Research* 112, no. 3 (July 2013): 498.

110. Ibid.

111. Ibid., 499.

112. Ibid., 500.

113. Richard Layard, "Measuring Subjective Well-Being," *Science* 327, no. 5965 (January 2010): 534, https://doi.org/10.1126/science.1186315.

114. Diener, Inglehart, and Tay, "Theory and Validity of Life Satisfaction Scales," 501.

faction scores predict health and longevity.[115]

Another introspective measure used in happiness research is experience sampling. In the experience sampling studies, participants are asked to evaluate their momentary experiences rather than their whole life. It is thought that these irrelevant factors that can have an impact on people's judgment of their happiness in life satisfaction studies cannot have that impact in experience sampling studies. But even this has been doubted recently. It has been claimed that people are not good at judging many of their moment to moment experiences.[116] Some affective states such as anxiety and flow might not be as easily discernible as intense pains and pleasures because they are more mild and less focused.[117] In addition, people's awareness of their experiences can fade with time due to adaptation,[118] some people seem to be better at introspection than others,[119] different people rate the same experience differently,[120] people are biased to report some experiences but not others,[121] and expectations of affects might have an impact on judgments of happiness.[122]

Some features in this objection do not attack people's abilities to accurately evaluate their mental states, it merely says that people do not often evaluate their mental states. People can be lost in thought and almost completely unaware of their mental states. This is, however, a different point from whether they are able to evaluate their mental state when they are asked to focus on them for scientific studies. It seems plausible that when people are asked to say how they feel right now that they would be able to say that they are anxious and that this anxiety is negative even if it was mild. Likewise, even if due to adaptation people do not notice the same experience as well in their daily life as before, it is plausible that they would notice these when given instructions to focus on their experience and report back their judgment of their experience. These are all speculative and intuitive comments I make here as a response to the previous paragraph, but the objections are also merely intuitively plausible not scientifically robust claims.

The reliability of the experience sampling measure has been found to be acceptable. When the mean scores of participants' judgment of their mental states from the first half of the week have been compared to the second half of the week, they have been quite consistent.[123] The median correlations of scores have been 0.6 for adolescents and 0.74 for

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115. Diener, Inglehart, and Tay, "Theory and Validity of Life Satisfaction Scales," 504.

116. Daniel M. Haybron, "Do We Know How Happy We Are? On Some Limits of Affective Introspection and Recall," *Noûs* 41, no. 3 (2007): 394–428, https://doi.org/10.1111/j.1468-0068.2007.00653.x.

117. Ibid., 397–398.

118. Ibid., 400.

119. Ibid., 402.

120. Ibid., 403.

121. Ibid., 404.

122. Ibid., 405.

123. Mihaly Csikszentmihalyi and Reed Larson, "Validity and Reliability of the Experience-Sampling Method," in *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi*, ed. Mihaly Csikszentmihalyi (Dordrecht: Springer Netherlands, 2014), 43, https://doi.org/10.1007/978-94-017-9088-8_3.

adults indicating acceptable stability.[124] Consistency has been quite stable longer term as well as the correlation for happiness has been 0.77 when the 2nd response occurred two years later.[125] The validity of the experience sampling measure is, in general, considered to be acceptable as well because the scores of mental states vary in expected ways with activity, location, and social contexts; the measure correlates with similar measures (for example, with the life satisfaction measure); and the results differentiate between different groups of people that are expected to be different.[126] There are some findings, however, that seem to lower the validity of the experience sampling measure. For example, there is some evidence that while unemployed people score lower on the life satisfaction measure, they might score higher on the experience sampling measure when feelings are weighted by their duration.[127] Furthermore, a very poor person might report themselves to be happy based on the experience sampling measure, whereas they might score lower on the life satisfaction measure.[128] These would be problematic findings as unemployment and poverty are widely considered to be bad for happiness.

124. Csikszentmihalyi and Larson, "Validity and Reliability of the Experience-Sampling Method," 44.

125. Ibid., 45.

126. Ibid., 46.

127. Ed Diener and Louis Tay, "Review of the Day Reconstruction Method (DRM)," *Social Indicators Research* 116, no. 1 (March 2014): 257, https://doi.org/10.1007/s11205-013-0279-x.

128. John F. Helliwell, Richard Layard, and Jeffrey D. Sachs, *World Happiness Report 2013* (New York: Sustainable Development Solutions Network, 2013), 3.

5 Universal Basic Income as a Response to Unemployment

In previous sections, I outlined the problem of automation, defended hedonistic utilitarianism as a moral framework for public policy, and suggested that the life satisfaction measure is an acceptable proxy for the experience sampling measure. In this section, I can now evaluate the size of the problem of unemployment that automation may cause and how much universal basic income could help to fix it. In section 5.1, I briefly cover the empirical literature of what effect unemployment has on happiness. In section 5.2, I define universal basic income and discuss how little evidence there is of its impact on happiness. In section 5.3, I acknowledge the limitations with these empirical estimates.

5.1 What Does Unemployment Do to Happiness?

Becoming unemployed is generally considered a major factor for reduced happiness. I have identified six studies that estimate the effect of unemployment on people's happiness using the life satisfaction measure.[129] The details about each study can be found in Appendix B. According to these studies, unemployment can cause a loss of 0.30 to 1.55 life satisfaction points. Assuming that the estimation from section 2 about how many jobs could be destroyed due to automation in the next decade is up to 375 million, this means that as much as 112.5 to 581.25 million life satisfaction points could be lost due to automation in the world. Since the lower bound of this estimate has controlled for variables like income and tried to reduce bias by using a fixed effects model, it is probably a more meaningful estimate to use when determining whether universal basic income is a good policy proposal compared to regular unemployment benefits or some other proposals such as retraining programs. That is because it is important to know whether universal basic income provides any additional benefits to providing people with income from, say, unemployment benefits.

There are a few details that need to be mentioned about unemployment studies. The fear of job automation could already cause some loss of life satisfaction even before

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129. Andrew Clark et al., "Work and Unemployment," in *The Origins of Happiness: The Science of Well-Being Over the Life Course* (Princeton: Princeton University Press, January 2018), 61–75; Nils Lerch, *The Causal Analysis of the Development of the Unemployment Effect on Life Satisfaction* 991 (DIW Berlin, The German Socio-Economic Panel (SOEP), 2018), https://ideas.repec.org/p/diw/diwsop/diw_sp991.html; Peter H. van der Meer, "Gender, Unemployment and Subjective Well-Being: Why Being Unemployed Is Worse for Men than for Women," *Social Indicators Research* 115, no. 1 (January 2014): 23–44, https://doi.org/10.1007/s11205-012-0207-5; Annabelle Krause-Pilatus, *Work to Live or Live to Work? Unemployment, Happiness, and Culture* (Institute of Labor Economics (IZA), November 2011), https://ideas.repec.org/p/iza/izadps/dp6101.html; Rainer Winkelmann, "Unemployment, Social Capital, and Subjective Well-Being," *Journal of Happiness Studies* 10, no. 4 (August 2009): 421–430, https://doi.org/10.1007/s10902-008-9097-2; Liliana Winkelmann and Rainer Winkelmann, "Why are the Unemployed So Unhappy? Evidence from Panel Data," *Economica* 65, no. 257 (1998): 1–15, https://www.jstor.org/stable/2555127.

unemployment occurs due to anticipation of job loss. This effect has been shown in several studies.[130] This means that the true estimate of the loss of happiness due to unemployment caused by automation could be larger than is captured by these estimates. Unemployment could also have some scarring effect even after the unemployed find a new job. Considering all these effects, it has been suggested that unemployment could result in a loss of 2.10 life satisfaction points a year,[131] which is larger than the effect sizes I have considered in this section. Another important detail is that it matters at what point in the phase of unemployment someone's life satisfaction measurement is taken. The biggest hit to happiness comes at the moment of becoming unemployed, but there is an expectation of some adaptation to the circumstance. However, that adaptation to unemployment does not occur fully even after several years.[132]

Why does unemployment cause loss of happiness? It can "damage individuals' perception of self-worth and lead to high levels of mental distress"[133] and create a sense of helplessness where the future seems not to be under the control of the unemployed individuals.[134] It has been found that this drop in happiness goes beyond loss of income as the psychological and social context matters as well.[135] This means that the solutions to unemployment caused by automation have to take care of all of the factors for a decrease in happiness. One of the best solutions probably would be the one that enables as many unemployed people to find a new job. Merely providing the unemployed some income cannot probably bring the happiness levels back to the previous level.

5.2 Universal Basic Income as a Policy Proposal

Universal basic income is roughly a policy proposal of unconditional monthly cash transfers. It has five defining features: "distributed in cash, regularly, individually, unconditionally, and universally."[136] It is distributed in cash not as food stamps or something alike, it is provided regularly (usually, monthly) instead of as a one-off payment, it is individual not household-based, it is unconditional as the beneficiaries do not have to

130. Andrew E. Clark et al., "Lags And Leads in Life Satisfaction: a Test of the Baseline Hypothesis*," *The Economic Journal* 118, no. 529 (2008): F222–F243, https://doi.org/10.15185/izawol.94; Rainer Winkelmann, "Unemployment and happiness," *IZA World of Labor*, October 2014, https://doi.org/10.15185/izawol.94.

131. Richard Layard et al., *When to release the lockdown: A wellbeing framework for analysing costs and benefits*, Occasional Paper 49 (CEP, 2020), 44.

132. Clark et al., "Lags And Leads in Life Satisfaction," 4.

133. Wen-Hao Chen and Feng Hou, "The Effect of Unemployment on Life Satisfaction: A Cross-National Comparison Between Canada, Germany, the United Kingdom and the United States," *Applied Research in Quality of Life* 14, no. 4 (September 2019): 1038, https://doi.org/10.1007/s11482-018-9638-8.

134. Arthur H. Goldsmith, Jonathan R. Veum, and William Darity, "The psychological impact of unemployment and joblessness," *The Journal of Socio-Economics* 25, no. 3 (January 1996): 336, https://doi.org/10.1016/S1053-5357(96)90009-8.

135. Winkelmann, "Unemployment, Social Capital, and Subjective Well-Being," 44.

136. Juliana Uhuru Bidadanure, "The Political Theory of Universal Basic Income," *Annual Review of Political Science* 22, no. 1 (2019): 483, https://doi.org/10.1146/annurev-polisci-050317-070954.

show how they meet some requirements for benefits, and it is universal as everyone (in a region or nation) gets it regardless of wealth levels.[137] Where the money comes from, how much beneficiaries receive, and other details are not fixed and vary depending on the exact proposal.[138] It has recently been most vocally proposed as a solution to unemployment that is caused by automation by Andrew Yang who ran for the 2020 US presidential election.[139]

To my knowledge, there have been 22 studies conducted on some version of universal basic income although some of these studies might not be properly universal in nature.[140] Only two of these studies have measured the impact of universal basic income on happiness using the life satisfaction measure. One of those experiments was conducted in Kenya by Haushofer and Shapiro.[141] The other experiment was conducted in Finland by Kangas et al.[142] Although they did collect happiness data using the life satisfaction measure in the study by Haushofer and Shapiro, they did not report it in a form that would enable me to calculate an effect size of how much universal basic income improved happiness of the unemployed. They measured several well-being indicators with different scales and had to standardize the effect sizes.

Some news articles have claimed that the study by Kangas et al. shows that universal basic income improved the happiness of unemployed people. For example, Phys.org published an article titled "Universal basic income experiment made people happier but not more likely to get a job" and other publications such as Vox.com and Newscientist.com have claimed the same.[143] This interpretation of the study comes from the fact that the researchers reported how the average value for life satisfaction in the intervention group was 7.32, whereas the average value for life satisfaction in the control group was 6.76, indicating that universal basic income increased happiness by 0.56 life satisfaction points.[144] This is, however, probably not a correct inference to make based on this study

137. Bidadanure, "The Political Theory of Universal Basic Income," 481–485.

138. Ibid., 485.

139. Matt Stevens, "Andrew Yang on Universal Basic Income," *The New York Times*, June 2019, chap. U.S. https://www.nytimes.com/2019/06/27/us/politics/who-is-andrew-yang.html.

140. Sigal Samuel, "Everywhere basic income has been tried, in one map," *Vox*, February 2020, https://www.vox.com/future-perfect/2020/2/19/21112570/universal-basic-income-ubi-map.

141. Johannes Haushofer and Jeremy Shapiro, "The Short-term Impact of Unconditional Cash Transfers to the Poor: Experimental Evidence from Kenya," *The Quarterly Journal of Economics* 131, no. 4 (November 2016): 1973–2042, https://doi.org/10.1093/qje/qjw025.

142. Olli Kangas et al., *The basic income experiment 2017–2018 in Finland. Preliminary results.*, Reports and Memorandums of the Ministry of Social Affairs and Health 2019:9 (Ministry of Social Affairs and Health, August 2019), http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/161361/Report_The%20Basic%20Income%20Experiment%2020172018%20in%20Finland.pdf?sequence=1&isAllowed=y.

143. Bob Yirka, "Universal basic income experiment made people happier but not more likely to get a job," *Phys.org*, February 2019, https://phys.org/news/2019-02-universal-basic-income-people-happier.html; Donna Lu, "Universal basic income seems to improve employment and well-being," *New Scientist*, May 2020, https://www.newscientist.com/article/2242937-universal-basic-income-seems-to-improve-employment-and-well-being/; Samuel, "Everywhere basic income has been tried, in one map."

144. Kangas et al., *The basic income experiment 2017–2018 in Finland. Preliminary results.*, 18.

because the researchers chose to survey 2,000 basic income recipients and 5,000 randomly selected individuals from the control group, but only 586 responded in the first group and 1,047 in the second group. These response rates are very low (approximately 30% and 20%, respectively) and likely indicate some selection effect, which affected who responded to the survey.[145]

Since current studies do not provide useful data about happiness using the life satisfaction measure, it is not possible to say how much of the happiness lost due to unemployment could be gained back by implementing universal basic income. Hence, the empirical case for universal basic income from the perspective of hedonistic utilitarianism is weak. There is basically just one study that provides some data to estimate the effect size for universal basic income on happiness. Unfortunately, due to methodological limitations, that effect size is not really practically usable. In theory, if such data were available and it was known that universal basic income increases happiness of the unemployed by 0.56 life satisfaction points, then that would potentially mean a gain of 210 million life satisfaction points in the case that universal basic income helped those 375 million people having lost their job and not able to find a new one. That would be a gain of 97.5 million life satisfaction points assuming a lower bound of the effect of unemployment on happiness. If this were the case, then universal basic income would potentially be a very promising proposal. However, it would also require a cost-benefit analysis and comparison with other alternative policies such as retraining programs and the like.

But could I not just use data about how much regular unemployment benefits increase the happiness of unemployed people if that data is available? No, I think universal basic income and unemployment benefits are different and could potentially have a different effect on happiness. The reason is that to receive unemployment benefits one usually needs to prove to the government that one is unemployed and is doing what is necessary to find a job, but universal basic income is a no-strings-attached payment to everyone in some country or region. This could potentially lower the negative effects associated with being a person who does not want to work or a person who cannot find work. For this reason, it could be the case that universal basic income provides more happiness to unemployed people than regular unemployment benefits. This hypothesis needs to be tested empirically.

5.3   Methodological Limitations of These Estimates

There are many limitations of these estimates. The first limitation is that it is not entirely clear what the effect of unemployment on happiness is since the life satisfaction of people

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145. I emailed one of the authors of the study, Signe Jauhiainen, who told me that they are avoiding making causal claims from the survey results and report only differences between these two groups.

who become unemployed starts decreasing 1-2 years before they become unemployed and drops more at the moment of unemployment.[146] Do they experience a loss of happiness due to unemployment or do they voluntarily become unemployed partly because of being less happy?[147] It is not entirely clear from these experiments.

Another limitation of these studies and this approach is that it assumes that the life satisfaction measure is cardinal, whereas it is more natural to interpret it as ordinal. In other words, it is assumed that the measure does not just rank different life satisfaction states to each other but that it is possible to quantify them, compare their ratios, and do adding or substraction with the scores compared to merely measuring how frequently certain scores come up. This is a problematic assumption because it is not obvious that when someone first evaluates their life to be at 7.0 points and after a period at 7.5 that this actually reflects an improvement of about 7%. There may be different ways of evaluating happiness for the purpose of public policy.

146. Winkelmann, "Unemployment, Social Capital, and Subjective Well-Being," 2.

147. Sonja C. Kassenboehmer and John P. Haisken-DeNew, "You're Fired! The Causal Negative Effect of Entry Unemployment on Life Satisfaction*," *The Economic Journal* 119, no. 536 (2009): 448–449, https://doi.org/10.1111/j.1468-0297.2008.02246.x.

6   Conclusion

How strong is the case for universal basic income to deal with automation-induced unemployment from the perspective of hedonistic utilitarianism? The normative case for universal basic income is moderate, because the life satisfaction measure used in happiness and policy research is an acceptable proxy for the experience sampling measure. Without access to data using the experience sampling measure, the life satisfaction measure is good enough. The empirical case for universal basic income is weak, because there are only two studies that have measured the effect of universal basic income on happiness based on the life satisfaction measure and one of them did not publish data in a way that would enable to estimate effect sizes and the other one has methodological limitations that do not allow for causal inferences.

What is going to happen in the job market due to automation in the next decade? The answer is very speculative but according to estimates from McKinley and OECD, up to 375 million people could lose their jobs and struggle with finding a new one in the next decade worldwide.

Why should hedonistic utilitarianism be used as a moral framework for public policy and the problem of automation? A moral framework used for public policy must be widely accepted and hedonistic utilitarianism achieves that quite well. Most people and cultures value happiness and all other defensible moral frameworks likely support the pursuit of happiness even though they might not accept that it is the only thing that matters. Furthermore, public policy needs to be as impartial and calculating as is realistic, which is what hedonistic utilitarianism does.

What measures should be used to evaluate the problem of automation and the solution of universal basic income? The most suitable measure from the perspective of hedonistic utilitarianism is the experience sampling measure because it focuses explicitly on mental states such as pleasure and pain, which is what hedonistic utilitarianism cares about. However, it is not commonly used in policy and happiness research. When the experience sampling measure is not available, the life satisfaction measure could be a reasonable replacement as it correlates moderately with the experience sampling measure.

What does unemployment do to happiness? It causes a loss of happiness by about 0.30 to 1.55 life satisfaction points in individuals who become unemployed and a total of 112.50 to 581.25 million life satisfaction points worldwide assuming that up to 375 million people become unemployed in the next decade.

What effect would the policy proposal of universal basic income have on the happiness of the unemployed? There is currently very little data available to answer this question. There have been only two studies conducted so far using the life satisfaction measure and one of them does not provide useful effect sizes and the other is methodologically weak.

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Appendix A

Table 1. Correlations Between the Experience Sampling and the Life Satisfaction Measures		
Study	**Findings**	**Limitations**
Berlin and Connolly (2019)	net affect: 0.40-0.43, net affect adjusted for measurement errors: 0.78-0.91[a]	problematic assumptions: life satisfaction does not vary over time and mood cannot change except due to circumstances[b]
Kahneman and Deaton (2010)	positive affect: <0.31	only 31% of suitable candidates agreed for an interview
Kahneman et al. (2004)	net affect: 0.38	participant selection: only women
Knabe (2010)	net affect: 0.36	did not specify what the correlations were for the unemployed participants compared to the employed participants
Krueger and Schkade (2008)	net affect: 0.31, net affect adjusted for measurement errors: 0.50	participant selection: only 18-60-year-old US women
Kööts-Ausmees, Realo, and Allik (2013)	positive affect: 0.49, negative affect: -0.51	NA
Lucas, Diener, and Suh (1996)	positive affect: 0.43-0.65, negative affect: -0.30 to -0.58[c]	participant selection: psychology students
Luhmann et al. (2012)	positive affect: 0.30-0.35	NA
Schimmack et al. (2002)	net affect: 0.27-0.62; net affect adjusted for measurement errors: 0.32-0.76[d]	NA
Wiest et al. (2011)	positive affect: 0.30, negative affect: -0.29	participant selection: only 40-85-year-old Germans

a. These ranges are wide because various life satisfaction measures were used.

b. For example, Sonja Lyubomirsky, Kennon M. Sheldon, and David Schkade, "Pursuing Happiness: The Architecture of Sustainable Change:" *Review of General Psychology*, June 2005, has argued that only about 10% of variance in happiness is due to circumstances and a lot more due to specific activities and attitudes of the individual. But see the criticism of the paper as well: https://journals.sagepub.com/doi/10.1037/1089-2680.9.2.111; Nicholas J. L. Brown and Julia M. Rohrer, "Easy as (Happiness) Pie? A Critical Evaluation of a Popular Model of the Determinants of Well-Being," *Journal of Happiness Studies* 21, no. 4 (April 2020): 1285–1301, https://doi.org/10.1007/s10902-019-00128-4.

c. These ranges are wide because various life satisfaction measures were used.

d. These ranges are wide because various countries were studied.

Appendix B

Table 2. The Effect of Unemployment on Happiness		
Study	**Findings**	**Limitations**
Andrew Clark et al. (2018)	-1.55 when uncontrolled for income and other variables, -1.06 when other factors are controlled for, -0.30 when a fixed effect model is used to reduce biases	NA
Krause-Pilatus (2011)	-0.46, -0.88, and -1.32 for Swiss Italians, Swiss German, and Swiss French, respectively	it only included data from Switzerland
Lerch (2018)	-0.73	it only included data from Germany
van der Meer (2014)	-1.30	it combined the life satisfaction measure with an affect-based measure
Winkelmann (2009)	-0.85 for men and -0.55 for women	it only included data from Germany
Winkelmann and Winkelmann (1998)	-1.13	it only included data from Germany and it excluded women from the analysis