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Universal Basic Income and the Economic Singularity

Simon Thorpe

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Introduction

The members of the Economic Singularity Club (ESC) share the belief that advances in AI and automation will have profound effects on humanity in the coming decades. In particular, it seems likely that machines could replace humans in a wide range of situations, making a substantial proportion of the population unemployable. For anyone with doubts about the potential impact of state-of-the-art technologies such as GPT-3 (Generative Pre-trained Transformer 3), the recent article in the Guardian entitled "A robot wrote this entire article. Are you scared yet, human?" gives a flavour of what is already possible. GPT-3's potential for replacing entire teams of journalists (and other highly skilled and well-paid professions) makes it clear that technology is not just a threat for people earning their livings from repetitive, manual tasks.

Our book "Stories from 2045 – Artificial Intelligence and the Future of Work" published in January 2019, included a wide range of scenarios, ranging from the positively dystopian, to quite optimistic. One of the aims of ESC must be to propose strategies that help ensure that our future is more "White Mirror" than the "Black Mirror" scenarios of Charlie Brooker's popular television series.

In this presentation, I would like to argue that providing a Universal Basic Income (UBI) is the single most potent antidote to the societal threats associated with the AI revolution and that we should be pushing to implement such proposals as rapidly as possible.

It is perhaps useful to note that providing a UBI is in no way incompatible with other ideas that have emerged from the ESC group. In particular, Calum Chase has argued that we could move towards a world of what he calls "Fully Automated Luxury Capitalism", made possible when the cost of providing goods and services drops so low that people could live decently without spending money. This sort of revolution has already occurred in some areas. Here is a list of some of the areas where goods and services can be provided to people with low incomes – even if they do lose their ability to find paid employment.

- **Internet.** Billions of people can now access a wide range of services including radio, TV and internet at virtually zero cost. Wikipedia, Facebook, Google, Spotify and Banking services are all available to anyone with an internet connection and a mobile phone or computer. And there are now numerous schemes for providing free smartphones to people who do not have the means to buy one themselves, see for example a recent example in Lagos, Nigeria.
- **Energy and Water.** Every citizen could have a basic allowance of electricity and water for free, and companies only allowed to charge for consumption exceeding the basic quotas.

- **Education.** In virtually all countries, **education** is provided free of charge at least until the end of high-school, but there are many countries where even university education is either free or at a minimal cost. They include Norway, Finland, Sweden, Germany, France and Denmark.
- **Health.** Although there are some glaring exceptions (such as the USA), the majority of countries now provide free universal health care.
- **Transport.** There are now well over 100 cities where transportation is free, and the movement is growing. Tallinn became the first EU capital to provide free transport in 2013, and in 2020, Luxembourg became the first country with entirely free transport. But things could become even better when self-driving electric vehicles become a reality. Governments could decide to provide a Uber-like service so that anyone with a smartphone could simply request transport to go anywhere. The reduction in congestion and the number of vehicles required could easily justify the expense.

So, it seems clear that people could have many of the requirements for a modest lifestyle without changing the system completely. And while this is not Fully Automated Luxury Capitalism, this tendency is likely to accelerate. Other vital components needed to live a decent life may be somewhat harder to provide at zero cost because requirements vary so much between individuals. Food, clothing and housing can all be expensive items, even though you can reduce costs a lot by choosing to live a more frugal lifestyle. People could opt to eat less meat and dairy produce, recycle clothes and ignore the need to have the latest fashions and choose to live away from expensive and overcrowded cities.

But could people really live decently when advances in AI and robotics have restricted their ability to earn money? Before discussing the potential role for UBI, let us examine how the current systems would cope with a rise in technological unemployment. In many countries, the state would step in to help people with little or no resources using a whole range of means-tested schemes that often oblige people to prove that they are actively looking for paid work. But such schemes have many serious problems. Many people who are eligible for aid fail to take advantage of the schemes either because they are often overly complicated or because of the shame of living on welfare. And in many cases, the assistance is removed as soon as the person starts to earn any additional income, meaning that the effective marginal tax rate can be very high – 80% or more. The resulting poverty traps can mean that people get stuck in poverty, even if they would like to work.

Poverty traps can be avoided if, instead of providing support in the form of means-tested benefits, the state simply provides support to everyone, using regular monthly payments with no strings attached – the very definition of a Universal Basic Income (UBI). In this article, I will look at the fundamental issue of how such a mechanism could be implemented and how it could change the nature of society. In particular, I will argue that a Universal Basic Income (UBI) will be a vital feature of any future solution to the economic singularity.

The main problem – financing a UBI

One of the objections to a Universal Basic Income is the claim that is would simply cost too much. If you simply multiply the amount of the UBI payments by the number of people, you certainly get huge numbers. But, as we will see, a radical change in the entire tax and welfare system can easily cover the costs.

Suppose that every adult receives a standard sum of money every month, with no strings attached, but then paid tax at a fixed rate on any additional income, whatever the source. Interestingly, it turns out that the resulting scheme could be very close to the current system, but without the administrative overhead. Consider the situation in France where less than half the working-age population pays income tax. You could provide €600 a month to every adult, and tax all earnings at a flat rate of 30%. 61% of the French population earns less than €2000 a month, which is the point where their tax payments (30% of €2000, or €600) cancel out the basic income. All such people would effectively get a form of negative income tax, an idea already proposed by Milton Friedman in the 1960s. Remarkably, the amount of income tax revenue paid by the 39% who earn more than €2000 a month is enough to finance the entire system. In such a case, the UBI coupled with a flat rate 30% tax on all earnings would be a purely redistributive system – taking money from the high earners and using it to pay those earning less than €2000.

Interestingly, a 30% flat-rate tax rate has already been imposed by the French government on all income from financial sources (dividends, rents, etc.). The reform would thus be a simple extension of this same flat-rate tax to all forms of income, including salaries, pensions etc. It is also worth noting that it is easy to scale the amount of the Basic Income even in this self-financing system. Essentially, increasing the flat-rate tax by an additional 10% adds an extra €200 to the UBI. You can therefore choose between €600 a month with a 30% flat-rate tax, €800 with a 40% tax or even €1000 a month at 50%.

Further evidence that a UBI can indeed be affordable comes from a website, developed by a team based in Bordeaux, where you can simulate different ways to finance a UBI. I found that it was possible to provide a UBI of €920 per month for all adults, coupled with half that amount for those under 18 (€460). Total cost would be €645 billion, but the simulator shows that this could be fully financed. There would even be a surplus of €9 million. Much could be achieved by fusing many of the existing benefit schemes into the Basic Income payments. They include the equivalent of the job seekers allowance (€15.4 bn), housing aid (€17.4 bn), tax exemptions for low salaries (€38.7 bn), family benefits (€36 bn), state pensions (€219 bn) and unemployment benefits (38.1 MD€). But it also requires the elimination of tax niches (€34 bn) and the effects of tax individualisation (€37 bn). I also set the rate for Income Tax at 0% but replaced it by something called the CSG (General Solidarity Contribution) which is a flat-rate tax with no loopholes that applies to all forms of income. I increased it from the current rate of 7.9% to 30%. I even managed to abolish VAT altogether, but increased the existing tax on wealth from 1.18% to 2% and set a carbon tax at €100 per ton. I chose the option of taxing financial transactions which would raise a further €50 billion based on a rate of just 0.012%, but this could be easily increased. In conclusion, this official government simulator, using official figures, demonstrates that financing a UBI is perfectly doable – if there is the political will.

Later on, we will look at two additional ways of financing a UBI at a global level. But these can be combined with the proposals mentioned here. So, if we can agree that implementing a UBI is possible, what would be the advantages?

Advantages 1 - Simplification

Implementing a UBI provides a vast simplification of existing schemes for people on low incomes, or who risk losing their livelihoods because of advances in AI and robotics. Some argue that it is better to target such support to avoid making payments to people who don't

need the money – why pay a basic income to millionaires? But fundamentally, providing a basic income of €600 (or whatever) to someone earning €100,000 a month is functionally the same thing as giving them a tax break of €2000 a month.

Another thing comes for free with such a system. Switching to a Basic Income & flat-rate tax system would allow the suppression of hundreds of tax breaks and loopholes that make many tax systems impossible to navigate without professional help. In the US, the complexity of the tax system forces even people with relatively modest positions (such as university professors) to pay professionals to fill in their tax returns. While the claim that the tax code in the US now runs to around 70,000 pages is apparently not valid, the system is very complex. It could be that the UK wins the title for the most complex system, with 17,000 pages of tax code. Much of this complexity results from lobbying by pressure groups who argue that their sector merits specific reductions in taxation. Trying to eliminate all those loopholes one by one could be extremely arduous, so entirely scrapping income tax would be a simple way to clear the system. But bear in mind that a direct subsidy can replace any tax break – they are functionally equivalent. Of course, it is relatively easy to defend a tax break (since no-one likes paying taxes and lobbying for tax breaks is considered a fair game). In contrast, it is much harder to justify receiving taxpayers' money.

France provides a good illustration. The government is currently offering €6000 in aid to anyone buying an electric vehicle, and a further €6000 for switching from oil-fired heating to Solar panels and a heat pump. The government could have implemented such aid via tax breaks, but this would only affect people who pay tax - less than half the population. Direct subsidies are thus a much fairer way to distribute state aid because everyone can benefit. And, since they are available to all citizens, they resemble an Unconditional Basic Income. The only real difference is that the help comes as one-off payments – not regular monthly payments.

Advantage 2 – Choice of lifestyle

A second significant advantage of having a UBI is that it enables people to choose their lifestyle without the need to spend a large proportion of their time earning money. Our current system obliges many people to work 9 to 5, five days a week from the day they quit education to the day they retire forty or so years later. Those who fail to fit the pattern and currently depend on welfare payments are often treated as second-class citizens, "scroungers", or worse. And that is true even if they spend all their free time doing valuable, yet unpaid work.

There are already groups of people who can avoid paid work entirely, without being labelled scroungers for living on benefits. Retired people with comfortable pensions, people with inherited wealth, and a few people who have earned enough to retire early can all live without working for money. Another very significant group, especially historically, are "housewives" or "stay-at-home moms". At the start of the 20th Century, close to 90% of women were housewives or homemakers. Even as recently as 2011, roughly 20% of French women described themselves as housewives. These days, the status of housewife is only possible for people whose partners are earning enough money to give them that option. Most women are now obliged to out to work to pay the bills.

So there are already several groups within society that already have the liberty to devote their time to a vast range of activities that can be very valuable, even though unpaid. These include

working in the home and caring for children but also charity work and other worthy causes. They can also indulge in a wide range of creative activities that are highly rewarding, even without pay.

You might argue that people need to be paid money to motivate them to do things that are vitally important for society. But some of humanity's most impressive achievements have been done without monetary rewards. The entire Wikipedia project involves only about 280 paid staff, with the rest of the work done by unpaid volunteers. Currently, around 70,000 people make five or more edits to the English language Wikipedia per month – all for free. It is worth noting that Wikipedia has practically demolished the market for commercially produced encyclopaedias like the venerable Encyclopaedia Britannica that was probably published in print form for the last time in 2010, after 244 years. Likewise, open-source software projects like Linux produced by armies of unpaid enthusiasts have demonstrated that they can rival products from Microsoft and Apple, despite their phenomenal resources. Indeed, since 2017, Linux is now the only system used on the TOP500 supercomputers.

So, there are clearly several groups in society that can choose what they do with their time. Why not give this option to everyone? Imagine the change if everyone could get involved in unpaid work – including those currently obliged to go out and earn a living 40 hours a week, all year round. Should such people be obliged to give up their valuable weekends and vacation time to do useful things that they would be delighted to do if they only had the choice?

Interestingly, in his 2018 book "Bullshit Jobs: A Theory", anthropologist David Graeber found that around 40% of people in paid work believe their jobs are entirely pointless and serve no useful function whatsoever. It follows that if a UBI allowed all those people to stop wasting their time, and do something useful, we would all benefit. Tragically, David Graeber died on the 2nd September 2020.

Advantage 3 – Ecology

Yet another advantage of UBI would be its ecological impact. Even a modest UBI would allow some people to adopt a low consumption lifestyle, perhaps by moving to rural areas and growing their own food. Around 1000m^2 of land can feed a family of four, but this currently requires about 6 hours of labour per day. However, low-cost intelligent robots could significantly reduce the amount of work needed by picking fruit or removing weeds. Apart from anything else, this would dramatically reduce the need for herbicides and help protect the environment. The more people make this choice, the better our chances of saving our planet, so it should be actively encouraged.

In France, for example, there are around 28 million hectares of agricultural land. If 1% of that land were requisitioned, and distributed to people in the form of allotments that could be used for growing food, it would allow a substantial proportion of the French population (around 11 million people) to become self-sufficient in food. With the average cost of agricultural land in France at around €6000 per hectare, the land needed to feed a family of 4 would only cost about €600 – a very modest investment. At such prices, rural communes in France could simply give land to all residents, enabling them to attract city dwellers to move to the country and revitalise rural communities.

Advantage 4 – Flexibility

UBI would end the current inflexible system where the length of the working day and the times when people have to work are imposed from above. With a UBI, people could freely decide how much time they spend doing paid work. Some might choose to work 100 hours in a week some of the time (it would be their choice). But others might do only 10 hours of paid work per week or even give up paid work entirely. Likewise, there would be no obligation to work all year round. People could easily decide to work just one week every month, or three months every year. With this degree of flexibility, the entire concept of being "unemployed" would cease to exist.

A UBI would also impact the many vital jobs that are currently poorly paid. The recent covid-19 pandemic has highlighted the importance of frontline health staff, including nurses and auxiliary personnel. If such workers were not obliged to work long hours, they might prefer to work part-time – maybe just one or two days a week, or for relatively short periods. To entice them to work, employers could be obliged to increase the level of pay to convince them to continue working long hours. The net effect would be that vital but gruelling jobs that are currently poorly paid would end up being among the best-paid jobs in the economy.

The desire for flexibility has been a factor in the development of the so-called Gig economy and zero-hour contracts, especially in the UK. For a business, this can be a significant advantage – especially when there is a need for seasonal workers in areas like tourism and agriculture. While current zero-hour contracts lead to worker exploitation, in a system with a UBI, such criticisms lose their pertinence.

UBI has other advantages for business by effectively subsidising local production. Imagine that you are in the business of manufacturing cars, trying to decide where to implant a new factory. A country with a UBI would have a natural advantage because some proportion of employees' living expenses are already covered, reducing overall manufacturing costs. A similar argument already applies to health provision. In most developed countries, universal health care provision reduces costs for industry. The glaring exception is the USA, where employers have to cover the full costs of health care for workers and their families. Businesses in the USA are thus seriously disadvantaged relative to practically every other country on the planet. It is odd, even incomprehensible, that the business leaders who currently back Trump's plan to eliminate "Obamacare" have failed to register this point.

Towards a Global UBI?

So far in the essay, I have talked about implementing a UBI at a local level – national or regional. Replacing the current complex benefits and taxation system by a UBI coupled with a flat-rate tax on all revenues could indeed work locally. But the challenge imposed by advances in AI and automation are ones that will affect just about everyone on the planet. Can we imagine a scenario to introduce a UBI at a global level?

Suppose that we decided to provide a UBI at 50% of the Median Per Capita Income. How much would it cost? Using data from the World Population Review produces a total of just under $10.6 trillion. That may seem a huge number. But choosing to provide a UBI at 50% of the median per capita income is quite generous. For example, in the UK it would correspond to nearly £400 a month for every man, women and child – up to £1600 for a family of four. The figures for France would be similar – around €440 a month. The costs would be much higher in Scandinavian countries where the cost of living is much higher, and where median

incomes are about 50% higher. But the cost of the equivalent deal in African countries where median income is typically well below $35 a month would be almost trivial.

In my contribution to ESC's book on "Stories from 2045", I made the radical suggestion that a very modest 0.1% tax on all financial transactions could entirely fund the $10.6 trillion needed for a universal UBI. Data compiled from the Bank for International Settlements (BIS) shows that in 2018, these transactions totalled at least $14.9 quadrillion – over one thousand times more than the sum needed to provide a universal UBI. And that sum is almost certainly massively underestimated because the BIS figures fail to include major players like the Chicago-based Options Clearing Corporation (OCC) that describes itself as "the world's largest equity derivatives clearing organisation", clearing 5 billion contracts a year. Likewise, according to BIS, foreign exchange transactions total $6.6 trillion a day so that with 250 trading days a year, this totals around $1.6 quadrillion. Daily volumes of interest rate swaps are also around the same value, so the $14.9 quadrillion figure is entirely plausible. Of course, some in the financial sector may claim that even a 0.1% financial transaction tax would have catastrophic consequences. But the fact is that the 0.1% rate is similar to the transaction charges imposed by the industry itself, so this argument is bogus. If 0.1% of the value of transactions was indeed funneled into the general world economy by simply giving it to the worlds' citizens, the boost to the entire system could be extremely beneficial.

There is another relatively simple, yet currently, unexplored way to move towards a genuinely universal UBI. I have recently proposed the idea of a universal 1% annual tax on all assets – payable wherever they are held. In jurisdictions where no asset tax was present (as is the case in tax havens like the Cayman Islands), the tax would need to be paid to a global organisation such as the United Nations. If international agreement for such a scheme was possible (admittedly a tall order), it could eliminate tax havens at a stroke because it would no longer be possible to avoid the tax by relocating assets.

How much revenue would such a tax generate? The companies in the Forbes Global 2000 list have combined assets of over $200 trillion. Clearly, the total would be a lot higher if we included assets for all the roughly 43,000 publicly traded companies in the world, rather than just the top 2000. We should also include the many privately-owned companies that are also required to declare their assets every year. While those numbers are harder to find, the annual revenue for just the top 50 exceeds $2.5 trillion, suggesting that the accumulated assets of privately-owned companies could also be enormous. We can also add in the global value of real-estate that Savill's estimates at around $280 trillion and currently increasing at over 6% a year. We should also be able to include the value of other assets such as yachts, aircraft, jewellery and works of art. A simple way to determine the value of such assets for the asset tax would involve using the insured value of the goods. Adding together the values of all these assets, whether owned by individuals, trusts or corporations could easily reach the eye-watering figure of $1 quadrillion. With a 1% annual asset tax, this would be yet another way to finance a universal UBI set at 50% of median income for the entire population of the planet.

We have thus seen that there are various options for financing a UBI. Locally, governments could reform their tax and benefits system to provide a basic income. But with international cooperation, a universal financial transaction tax of around 0.1%, or a universal asset tax of 1% per annum, would be enough to provide a UBI for everyone. By using both taxes, it would be possible to use even lower rates. It is therefore hopefully abundantly clear that providing a UBI is perfectly doable – if there is the political will.

The suggestion that a global organisation such as the United Nations could organise the distribution of a basic income to everyone on the planet is undoubtedly very bold – and perhaps not very realistic. But the advantages could be enormous. Nearly every nation on earth has signed up for the United Nations list of 17 Sustainable Development Goals. While everyone agrees on these objectives, there is little agreement about how to finance them. But it is worth noting that a global UBI could help many of them. The obvious ones are Goals 1 (No Poverty), 2 (Zero Hunger) and 3 (Good Health and Well-being) that would be directly affected, but a global UBI would help just about every one of them. Furthermore, allowing the United Nations to implement the scheme would give it enormous negotiating power, because the provision of the basic income payments could be made conditional on the governments in particularly countries respecting basic civil rights including freedom of speech.

Final comments on UBI and ESC

My final point returns to the fundamental question of how we could cope with the consequences of the AI revolution and increasing automation on the amount of paid work in the economy. I would like to argue that by introducing a modest UBI now, or in the near future, governments could easily cope with any future changes in the job market.

To make this point clear, suppose we start from the "ideal" situation of full employment with 100% of the working age population working full time – five days a week. Imagine that over some period, the amount of paid work drops by 50%. There are clearly a range of strategies. One would be to lay-off 50% of the population, and keep those that still have jobs working full time. Another would be to reduce the working week from 5 days to 2.5 days. But who is to say that everyone would want that solution?

With a UBI in place, and set at a level where it was possible to get by with just the UBI (if someone was happy to live a low consumption lifestyle, growing their own food), you might have a situation where equal numbers of people decide to work full time (5 days a week), part time (4 days a week, 3 days week, 2 days a week and 1 day a week), or to do no paid work at all. With one-sixth of the population in each group, you would also have enough people to do all the paid work that was available. But critically, no one would have to impose this in a top-down way. And market forces would naturally adapt to ensure that all the essential paid work was done by increasing pay levels when necessary.

Suppose that, a few years later, the amount of paid work had dropped to just 20% of the original value. There would again be a wide range of possibilities without having to decree that everyone has to work a one-day week. The obvious option would have 20% of the population working full time, and 80% doing no paid work at all. But you could just as easily have two-thirds of the population opting to do no paid work, and the remaining third being divided equally between 1-, 2-, 3-, 4- and 5-day working weeks – with one in 15 still opting to continue working full time.

Of course, the two-thirds of the population doing no paid work would not necessarily be sat watching endless television series or playing video games (even though they would certainly have that option). They could also indulge in all the enjoyable activities currently reserved for the retired, for those who have inherited wealth, those lucky enough to have earned enough to retire early, or married to someone wealthy. They could also devote themselves to the myriad options for rewarding and valuable unpaid work that would improve our world.

The beauty of having a modest UBI as a baseline is that everyone would be able to choose precisely how they divide their time between paid work, recreational activities, and valuable but unpaid work.

It is also important to realise that in such a scenario, market forces will still be able to play their role. If the level of the UBI is set a level sufficient to live modestly without paid work, but not enough to provide a lavish lifestyle, money will still be effective at motivating people whose hard work is considered particularly valuable, such as chefs in Michelin-starred restaurants, skilled musicians, actors, sports stars and entrepreneurs. You could even decide the level of the optimal amount for the UBI by fixing it such that a given number of people (say 10%) choose to opt out of paid work.

A final point to make is that this future world where everyone chooses freely how they divide their time may be as close as we can get to a real utopia. It would ensure what Jeremy Bentham called "the greatest good for the greatest number". The simple fact is that people differ and there is no point in seeking a "one-size fits all" solution where everyone has to do what some bureaucrat has decided is the optimal amount of paid work. Not only will people be free to choose their particular mix, but that mix can also change continuously from day to day, from week to week, from month to month and from year to year. There would be no such thing as being "unemployed" since not doing paid work would be a question of choice, and there would be no shame in choosing such a lifestyle. Indeed, if we are serious about saving the planet, we should be actively encouraging such behaviour. Likewise, the very notion of defining an age when you are allowed to retire would be seen to be nonsensical. Effectively, some people might "retire" as soon as they left school – as the children of millionaires can already. Does that mean that they would never do anything of value?

For me, the main reason why we have ended up in the current system stems from the fact that the vast majority of people appear to believe that their "value" can be measured by the amount they earn. Hopefully, most people will be able to see that this is an illusion. The elimination of this misconception could be the most positive impact of advances in AI and automation.

But the final point is that, with a UBI in place, and the development of a situation where everyone chooses their life mix freely, there will be little need to fear the rise of AI and automation. These new technologies can potentially be enormously beneficial for humanity and for all life on our planet. UBI is the mechanism that we need to be able to see that technology progress without threatening our societies.