

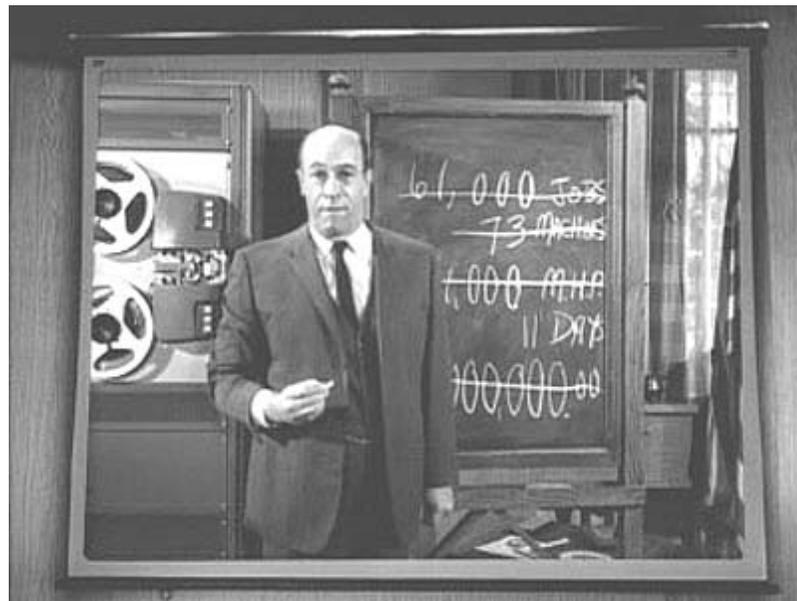
**Alea Iacta Est**  
**The Writing On The Wall**  
**Res Ipsa Loquitur**  
**What Was Once Just Science Fiction**  
**Regarding The Future Of Work Is Reality Today**

*With That Now Comes Our Urgent Need To Establish A  
Universal Global Basic Income PRIOR To The Year 2020*

**A Call For Action**

by Nyc Labretš

*14th Congress of the Basic Income Earth Network,  
Munich, Germany, 14. Sept. to Sept. 16, 2012*



*"Twilight Zone"*  
*"The Brain Center At Whipple's"*  
*Original Air Date: 15 May, 1964*  
<http://bit.ly/TUPbien14Labrets>

## Abstract

### *The Future of Workplace Automation Has Already Arrived*

by Nyc Labretš, Munich, Germany, 2012

In its Conclusion this Paper will present a simple Formula that shows how it will be possible to provide a full 40% of population of any 1st World's country, (be it the United States, Germany, or any or all countries of the European Union), with an Unconditional Basic Income for an investment range of no more than 5% to 10% of Annual Gross Domestic Product.

Today, in the year 2012, a 'Human Worker Free' Amazon/Kiva Systems Automated Warehouse in the USA that is wholly staffed by Kiva Systems Order Fulfillment Warehouse Robots, instead of human workers, is already much more cost-effective for Amazon to operate, (each of these Kiva Systems Robots cost Amazon 2/3rds less a year to operate than what human workers cost to employ, and in the space of year Kiva Robot can work at least 4 times as many hours as a human worker can), as it is to have the lowest paid American Minimum Wage human workers do the same exact work. These same underlying economic dynamic will likely hold just as true for the 1 million of Foxconn's Chinese human workers who Foxconn plans to replace with Robotic Workers between the years 2013 and 2016.

On the very other end of the spectrum, IBM's Watson computer in 2012 is already performing the work of Legal Analysts, MBA's, Doctors and other highly paid Professionals. For a mere fraction of the cost.

Because of these underlying economic factors and the driving force of *Moore's Law*, which operates on a consistent 2 year cycle, (computerized systems that drive the Automated Workplace increase their performance exponentially, with a commensurate reduction in cost over time, i.e., their cost-effectiveness also increases proportionally every 2 years), which also means that these automated systems become significantly cheaper to operate as time passes.

All that taken together will mean that by the year 2022 there will have been a "Cambrian Explosion of Robotics" in our Global Workplace which will have been driven by these twin factors working in tandem with each other.

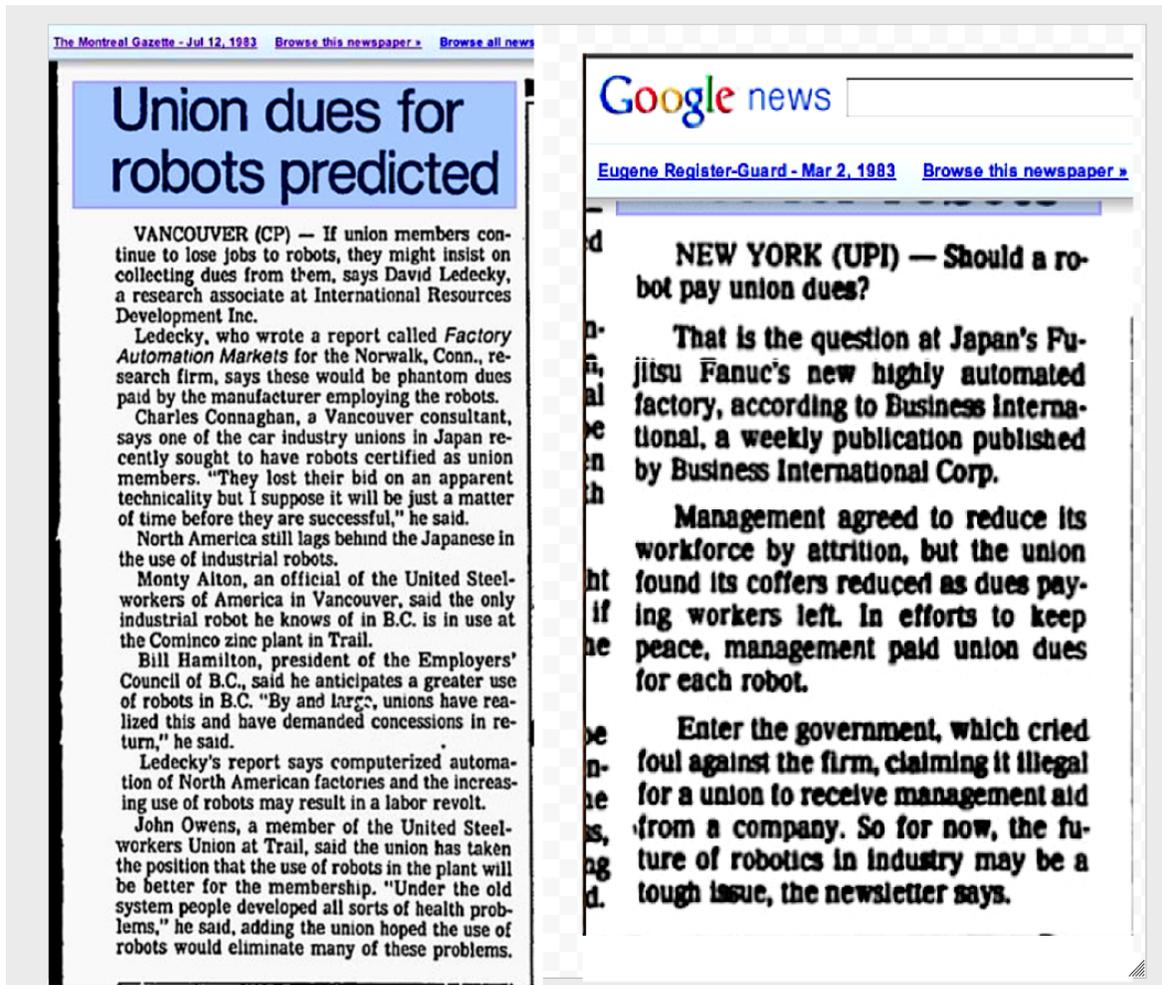
As a result of this, at a minimum, at least 5% to 10% of all jobs that exist today in the year 2012, (both "White" and "Blue" Collar work), which in the year 2012 i currently done primarily by human workers in our 1st and 3rd Worlds, will be performed better, and much more cost effectively, than by we humans.

Worldwide it is conceivable that within this next coming decade that anywhere from 150 million jobs, to up to more than 300 million jobs, that exist now in the year 2012 will be automated away. In a country like the United States those job losses can fall into a range of anywhere from 7 million to 15 million jobs permanently eliminated during this time period; in a Phenomena known as *Technological Unemployment*.

However, on no significant Political/Economic/Social or Cultural current level, are the Nations of our world prepared for this reality.

Drawing from the work of Dr. Martin Luther King's writings on the 'Citizen's Social Dividend' as well as that of the Marshall Brain series of Essays on Workplace Robotics and using the already proven and successful examples of viable Basic Income Programs in place today in both the United States's decades long "Alaska Permanent Fund" and the Brazilian "Bolsa Familia" (Family Grant) Basic Income Program, (which has been incorporated into the Constitution of Brazil for approximately a decade now), this Paper will present the idea that not only is it be necessary to implement a global Universal Unconditional Basic Program, but absolutely IMPERATIVE that we do so.

Or else face the most dire of human consequences the world over.



Left Image from the Montreal Gazette, July 12th, 1983  
 Right image from Eugene Register Guard, March, 2, 1983

These are just 2 of the very few rare mentions I could find *anywhere* in the last 30 years that even remotely presents the idea of coupling Productivity to Worker's Wages by making companies which automate away their workforces have to pay Union dues in order to compensate for the human workers that they displace and get rid of because of Technological unemployment.

Earlier this year I spoke with a Mr. Arnold Brown who had mentioned this subject in passing in a 1986 piece he had co-written with Edie Weiner for The Futurist<sup>1</sup> and he told me that this was more a less a misreported Urban Legend and didn't really happen in Japan but was briefly discussed in some Scandinavian countries, such as Norway and Sweden, in the early 80s, but the talk never got out of the Union's Shops and clearly nothing ever came of it.

Perhaps it is time to finally revisit this idea.

**Terms:**

## **Load Cost**

The cost to a company of having a staff member work for an hour is not that person's hourly rate but also includes the cost of benefits, vacation time, facilities costs (office space, heating and cleaning, computers etc.), and the many other costs associated with having that person employed.

***Commonly, the fully loaded cost of an employee is at least twice his or her salary.***

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## **Average Monthly Social Security Benefit For A Retired Worker**

In 2012, over 56 million Americans will receive \$778 billion in Social Security benefits. The average monthly Social Security benefit for a retired worker was about \$1,234 at the beginning of 2012.

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## **Moore's Law**

Is the observation that over the history of computing hardware, the number of transistors on integrated circuits doubles approximately every two years.

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## **Technological Unemployment**

Is a phrase coined by John Maynard Keynes in the 1930s in a letter he wrote, "Economic Possibilities for our Grandchildren," and is defined as unemployment primarily caused by technological change.

Since the early 1800s, the observation of economists has been that technology has had a positive influence on employment: as technological change increased productivity, prices for commodities fell, resulting in increased demand, thereby increasing demand for labor.

Machines freed workers from simple manual work but created new better paying jobs requiring more specialized skills.

However, some technologists claim that modern capabilities of pattern recognition, machine learning and global networking are steadily eliminating the skilled work of large swathes of the middle income workforce.

***"The warning is that technology is no longer creating jobs at the rate that it is making others obsolete."***

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## **Peak Employment**

Is the theory that due to factors such as efficiency, driven by technological innovation, and demand, developed economies may have already passed beyond the highest point of employment and that from this point onwards employment will continue to fall and unemployment inexorably rise causing increased social tension.

# **Basic Income**

**We must create full employment or we must create incomes.**

*I am now convinced that the simplest approach will prove to be the most effective.*

*The solution to poverty is to abolish it directly by a now widely discussed measure:*

### ***The Guaranteed Income.***

*Two conditions are indispensable if we are to ensure that the guaranteed income operates as a consistently progressive measure.*

*First, it must be pegged to the median income of society, not the lowest levels of income.*

*To guarantee an income at the floor would simply perpetuate welfare standards and freeze into the society poverty conditions.*

*Second, the guaranteed income must be dynamic; it must automatically increase as the total social income grows.*

*Were it permitted to remain static under growth conditions, the recipients would suffer a relative decline.*

*If periodic reviews disclose that the whole national income has risen, then the guaranteed income would have to be adjusted upward by the same percentage.*

*Without these safeguards a creeping retrogression would occur, nullifying the gains of security and stability.*

*Reverend Dr. Martin Luther King, 1967*

*Where Do We Go From Here: Chaos or Community?*

## **A Preface, History, Qualifications And A Dedication**



*[You know, one of our investors always tells me that humans are really bad at understanding Exponential Growth](#)*

*Mark Zuckerberg, Facebook Founder and CEO*

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***“Our ability to process information in this Lab doubles every 2 years.”***

*Jeremy Wheeler, speaking to me 2 weeks after the completion of the  
First Draft of the Human Genome was announced at the  
Stanford Genome Technology Center  
975 S. California Avenue  
Palo Alto, CA, July 2000*

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***“Ein Geist geht um die ganze Welt. Das ist der Geist in der Maschine.”***

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***A Declaration***

*“When in the Course of the Events of our Shared Humanity, it becomes a Thing of Necessity for all of We Sovereign Peoples of the World to Cleanly Break With and away from our prior Economic and Political Working Relationships with those with which whom We have formerly Contracted with, in the Trade of the Daily Labor of our Sacred Lives to, and for all We Sovereign Peoples of the world to Assert, and take on for ourselves our Distinct, Inalienable, and Inviolable Birthright as Human Beings, that these Rights are that of being to our inherent Freedom to live our lives for ourselves as each of We Sovereign Persons sees fit, and it’s only Polite, Reasonable, and just Plain Good Manners for us to clearly Declare to the World at Large our reasons as to why we are thus so Affirming our Natural Right of Birth.”*

A new Cambrian Explosion, (one rivaling, if not surpassing, that of the original of a half a billion years ago,) is afoot.

This one has the potential to reshape the Earth on an even greater scale; in a significantly much shorter time frame than the Cambrian one did.

With the difference between the two events being that the Cambrian Explosion from eons past was a many millions year long natural evolving process.

Whereas this one is entirely man-made technological one.

That can, and likely will, happen in a matter of decades.

Barring an Act of God, and/or a simultaneous and years long sustained electrical blackout upon all of seven of the Earth’s continents, (both of which events have an incredibly low and rather remote possibility of happening), as of this very moment in time, we are now at the threshold of the most revolutionary, sweeping, transformative and sudden set of abrupt technological change that we humans have yet seen in our entire 5,000 year old recorded history.

There is very little in our prior history, practically nothing at all really, in the grand sweep of all of our prehistoric and 5,000 years worth of written human experience to date, to compare to what is about to happen to all of us in our world of humanity.

Because there simply is no prior precedent, (not even with the two of the Victorian Era 19th century Industrial Revolutions that were Pre-and-Post to the American's Civil War of the early 1860s), for this level of change that will happen throughout all of the entire strata of our society and culture.

This is due now to the now rapidly increasing rate of unstoppable speed and force that our oncoming Technological Revolution has to it.

This change will not be measured in long off centuries or millennia.

But in years.

It will happen in the scant blink of an eye.

The far reaching effects that it will be those of the greatest of upheavals.

In the face of this, there is both Bad News, and Good News, to report.

For both the majorities of workers and peoples of the world today who primarily rely on having their jobs and work to provide the daily and annual income that they need to live on this is going to directly impact them the most.

The Bad News is that, (thanks to this growing and irreversible trend of *Exponentially Accelerating Technology*, it is an inevitable and foregone conclusion that within the next 7 years, (before the end of the rest of *this* current decade), that out of the current pool of estimated 3.27 billion jobs that exist now in our global Labor Force in the year 2011<sup>1</sup> there will be, (at the *barest* of minimums), many 10s of millions of current worker's jobs that still exist today, the world over, that will be forever lost to Computerized Automation in the Workplace due to this inexorable phenomena of *Technological Unemployment*.

If only a mere 5% of the world's current 3.3 billion jobs, (half of 1% a year, over the course of the next 10 years), that exist today in the year 2012 get permanently automated away from our global Labor Force, then that will be 150 million jobs that will be *forever lost to automation*.

That is a conservative figure.

(Especially if there is some significant and unanticipated technological breakthrough in any single one of several areas, such as vision technology i.e., as Marshall Brain describes in his "Manna"<sup>2</sup> story the possibility our computers learning to "see" as well, or better, than we humans do), which will greatly speed this transition away from us costly human workers).

To put it into perspective, this 150 million jobs lost figure is the equivalent of over triple the entire current +43 million person Labor Force of Germany<sup>3</sup> today.

And it is almost equal to the entire currently estimated +140 million to +150 million person pool that is the current Labor Force of the United States.<sup>4</sup>

Because the underlying economics to make this transition away from costly human labor are so compelling the attendant massive transition to automated labor will happen at a very high rate of speed.

With the end result being that these many millions upon millions of job losses will be permanent in nature.

And there will not be enough new jobs created, (in any, and every, job sector), to make any sort of tangible difference whatsoever.

Once those jobs are lost to our machines, in much the same way, (as Martin Ford repeatedly points out), that they have been lost to Outsourcing,<sup>5</sup> they will never come back.

We are in no way prepared, or ready, for any of this.

The Good News, (as this Paper will outline), is that this will present an hitherto unprecedented and tremendous political opportunity for our Basic Income Movement to gain traction and hold in our Modern World of the 21st Century.

To include the whole of the Asia, the Indian subcontinent, Europe and the Americas, i.e., throughout the entirety of earth.

This is because, as this rapid transition away from human labor towards Automation picks up and gathers steam, this abrupt and seemingly sudden transformative transition will also provide to us the real world impetus needed by our Unconditional Basic Income Movement to create the first real chance for itself in well over the last 40 years, (since the time of the first term of the Presidential Administration of Richard Nixon, who in the year 1970 almost got passed by the American US Congress his proposed Family Assistance Plan, (FAP), which, (had it made it out of the US Senate), essentially would have become a baseline national Unconditional Basic Income Law<sup>6</sup> in the United States), that the idea of establishing and implementing Basic Income, will once again begin to look like a reasonable and feasible idea in the mind of the General Public.

Especially to the large swathes of first 10s of millions to the then 100s of millions of workers who will no longer have any jobs available to them that are commensurate with, (or below), their skill level at this point in time in the year of 2022.

Nor, once this transition away from human labor is fully underway, will these displaced workers have any means left to them to find any other gainful employment for themselves.

Because, quite simply the alternative work that they once may have been able to secure for themselves will also have been permanently automated away from the global workplace at roughly the same point in time that the jobs that they used to have will be gone.

There will literally be no place left for these workers to turn to.

Like the prey of a python they will have been squeezed out of work, and with that the most rudimentary ability to feed themselves and their families, even at the most basic of subsistence levels.

Now this is not to say that the very idea of establishing a global Basic Income won't meet with the most fiercest of opposition and resistance in many quarters.

It will.

That is to be both expected, and planned for.

In anticipation of that probable scenario occurring a viable strategy to adopt by our Unconditional Basic Income Movement from this point on is to have as our mental starting point is to have the end result already firmly set in the minds of those of us who are now working towards making Basic Income a reality.

This end point result that we now need to keep in mind amongst those of us who are working together today towards establishing a global Unconditional Basic Income is that in meeting the criticisms of those individual peoples, Organized Governments, and Corporate Entities, (all who would choose to take the path of opposing establishing a global Unconditional Basic Income for the peoples of the world), is what we already know to know true amongst ourselves.

That it is to say that those people and entities, like every other preceding form of a fundamentally flawed and unsustainable form of Governance and Economic System of the sort which went in diametrical opposition towards meeting the needs of the people unfortunate enough to be caught living under it, (the Ukrainian Holodomor Famine<sup>7</sup> of the 1930s comes readily to mind), those sets of peoples and organizations will ultimately find themselves to be on the wrong side of history.

This Paper will focus primarily on this phenomena of *Technological Unemployment* and not so much on the idea of, or promoting, the concept of Unconditional Basic Income.

For the reason that it is that is the considered opinion of this author of this Paper, (who, while I am not a trained economist, I did work for several years in the early mid 1990s as a NASD Licensed Stock Broker, both on Wall Street in New York City and in the Financial District of San Francisco), of this piece that of all the options available to provide the means of support for the peoples of the world, (once the availability of daily, 5 days a week, wage earning work and labor for human workers to earn a 'livelihood' ceases to exist, and no longer meets that need), the idea of establishing a global, Unconditional Basic Income is by far superior to any other proposed economic plan.

That discussion and debate has already been had.

The results are in, and they do speak for themselves, as the body of the Abstracts on this year's BIEN Congress website for this Conference can attest to.

In fact one would be very hard pressed to find a better example of anything that is more "Res Ipsa Loquitur" Self Evident than the known, time tested, and time *proven* efficacy of Unconditional Basic Income as a viable economic plan that is capable of:

*'Providing The Greatest Good for the Greatest Number.'*

Simply put, in terms of viability and practicality nothing else even comes close to comparing to Unconditional Basic Income.

The reality of it is that Unconditional Basic Income already has a long established Track Record and it has been proven to work, whenever, or wherever, a version of it has been implemented.

In fact, so far, be it the various manifestations of Basic Income Programs, (whether they be full annual Stipends for adults, or a monthly Child Benefit Allowance), that we have seen begun to take place in countries like Brazil, (where in less than 10 years their National Poverty Rate declined by over 3/4rds, from 22% of the Brazilian population living under the direst of human circumstances to 7% of the population<sup>8</sup>), Qatar,<sup>9</sup> Mexico,<sup>10</sup> Portugal,<sup>11</sup> the Kindergeld Programs of The Netherlands<sup>12</sup> and Germany,<sup>13</sup> The Alaska Permanent Fund,<sup>14</sup> and of course the largest working Model of Basic Income, the United States's 75 year old Social Security<sup>15</sup> Program.

All of these implementations of the Basic Income concept have all been unrivaled successes.

And so I consider the question of Unconditional Basic Income to be that of a long "settled" one.

The only real question left to me concerning Unconditional Basic Income is just how soon we can establish it in as many places as possible.

With that, the focus here then is on *Technological Unemployment* instead of going back over and covering old ground i.e., 'Preaching to the Choir' in order to provide a clear cut set of readily understood reasons to people as to why an Unconditional Basic Income will be a vital and necessary component of the new world of humanity of ours that is approaching us.

When I first set out to write this Paper just this past April my original intent was to give as dry, impartial and neutral an overview of the rates of technological change and what the impact of those changes would be as I possibly could.

However I now find myself compelled to take a much stronger stance in this presentation.

The reason why for this shift in tone in my part and why I am opting for this much more full throated approach of "Sounding The Alarm" is two fold.

Firstly because there is simply no way, given our current Political/Social/Cultural, and, (most importantly), Economic Climate, to overstate just how quickly things will be moving and happening now because of this aforementioned *Cambrian Explosion* of Robotics/Automation Technology that is well underway and gaining momentum on a daily, almost hourly basis, as I write this in the midst of the year of 2012 and that...

We are simply just not ready for what is about to happen to all of us.

The second reason I have decided to opt for a more vocal approach is because just in the handful of months since this April I have seen a flood, (one piece, after another piece, of compelling evidence, after yet another piece of compelling evidence), of the pieces of the technological puzzle that will make massive "Technological Unemployment" a swift, sudden and sure reality.

And, if I am correct in my observations, then all of this will fall into place much quicker than I have been anticipating for the last several years now.

So I find myself moving away from a much discussed potentiality of an available 15 to 20 year window to establish a global Basic Income plan.

To a considerably dramatically, and significantly, much, much shorter schedule.

In a nutshell, the reason for my thinking this way is this:

*Either all human life is precious.*

*Or it isn't.*

If all human life isn't precious.

Then so be it.

And with that line of thinking we can then also allow the things of our current and accepted Status Quo to continue to flow along and follow their present course.

With the inevitable and catastrophic, results that will follow.

However...

If indeed we do hold that it is Self Evident that *all human life is indeed precious...*

Then it is incumbent upon us to muster and gather up our energies for the battles that will lie ahead of us on many fronts.

Before I get into the body of this exposition I would first like to thank the Members of this year's BIEN Congress for considering and presenting my work; my being a relatively unheard of and unknown newcomer in the field of discussion of Unconditional Basic Income, and I must also clearly state that the ideas expressed in this Paper of mine are in no way a 100% original work of mine.

Many others have already preceded me, (and there are also many of those who are concurrent with me today), in stating the exact same points which are in this Paper.

Most recently, I like to present the work of a Mister Frank Rieger of the Berlin Chapter of the Chaos Computer Club as a vivid example of how another person writing in this field managed to arrive at the same place I did.

Herr Rieger, who, on the 18th of May of this year, (just a little over a month *after* I submitted my Abstract for this Paper to the BIEN Congress Academic Committee ), had published in the Frankfurter Allgemeine Zeitung his piece that covers much of the very same ground that I do:

***“Roboter müssen unsere Rente sichern, Automatisierungsdividende für alle”***<sup>16</sup>

Which is striking to me, (for more than one reason, which I will elaborate on further below), but for now, in this Preface, I need to mention that both Herr Rieger and I, (*working completely independently of each other*), have reached an *identical conclusion* about this rapidly accelerating phenomena of *Technological Unemployment* driving the now imperative need to establish a universal Basic Income as quickly as possible.

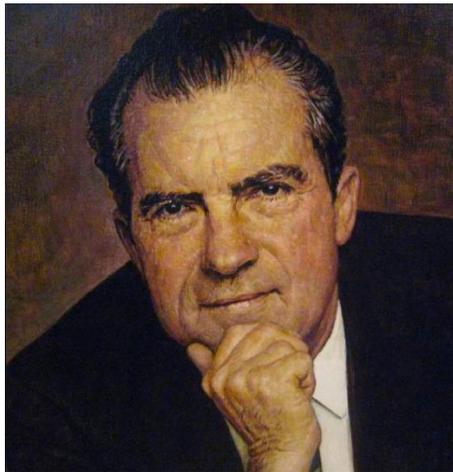
I also need to briefly mention and acknowledge this partial list of works that have informed much of what is written in this Paper , (as well as the invaluable and incalculable help that I have received from many people over the years), that I will draw on in here which have come from a wide range of sources.

To include the Reverend Dr. Martin Luther King Jr., (on whose writings on what Dr. King called the “Social Dividend” in his 1967 book: “Where Do We Go From Here: Chaos or Community?” is the central thrust of this Paper), The Torah, The US Census, E. O. Wilson, The VisLab Autonomous Car Research Center in Italy, DARPA, Pulitzer Prize winning author Chris Hedges, Robert Pirsig, US President Richard Milhouse Nixon, Marshall Brain, *The CIA World Factbook*, Andrea Tosi of *RePeace*, Erik Brynjolfsson and Andrew McAfee's *Race Against The Machine*, Thomas Paine, Debbie Coultis, Todd Akira Morikawa, Hans Moravec, John Maynard Keynes, Bill Joy, Nick Goldman, Martin Ford, Frank Rieger, The Chaos Computer Club, Jason Benlevi, Henry George, Amon Kalkin and the ZERO STATE gang, Khannea Suntzu, Paul Krugman, Andrew Gorospe, David Graebe, Tom Adesko, The US Bureau of Labor Statistics, Alex Lightman, Joseph Stiglitz, Amanda Stoel of the Singularity Network, Peter Rothman, The US Debt Clock, Hank Pellissier of IET, David Brin, Tyler Durden's crew of Space Monkeys who reside over at the Zero Hedge website, Walter Tevis's 1980

book 'Mockingbird,' Daniel Häni, David F. Noble, Wayne Radinsky, (with whom I have been consistently discussing this subject since the late 1990s), Reese Jones of Singularity University, the 1964 episode of the American TV program, *The Twilight Zone* entitled "*The Brain Center at Whipple's*," and many, many others.

As well as the invaluable resource that is the large body of crowdsourced work in the form of an FAQ on Basic Income that the Pirate Party of Germany, has developed and put on their website<sup>17</sup> in the few brief years of the German Pirate Party's existence as a political entity in Germany.

Please do bear in mind that the German Pirate Party has earlier in this year adopted *Bedingungsloses Grundeinkommen* to be a *primary plank* of their Platform<sup>18</sup> in next year's 2013 German Federal Elections, (which, again, as stated above, it will be the first time in over 40 years since America's President Nixon almost passed into Law his Family Assistance Program Basic Income Plan in 1970, a US Law that would have provided an Annual \$1,600 dollar Stipend and \$800 dollars worth of Food Stamps for American families of 4,<sup>19</sup> which would be worth over €10K EU a year adjusted for the value of that sum of money in the year 2012), that any 1st World country will discuss establishing Basic Income on a National level.



*As it turns out not only is it true that "Only Nixon can go to China" but it is also the case that only our Mister President Nixon could have almost gotten a Basic Income Law passed in the United States over 40 years ago. Who knew?*

And lastly both of my parents.

From my father, Silvester, (born in the Stone Age village of Ptuj, in the former Yugoslavia, he went on to become a Nuclear Physicist and Electronics Engineer, (likely I am the only child born in Mt. Sinai Hospital on 5th Avenue in Manhattan in all of the year 1964 whose father listed their 'Usual Business' as 'Electronic'), who in the mid 1970s once held one of the first ever Patents issued for LED light technology by the United States Patent and Technology Office), who was the Founder of the original "Linden Labs".

His electronics firm that he founded in the early 1970s, "Digital Components", was based in in Linden, NJ, long before the online virtual reality community, 'Second Life' was a gleam in anyone's eye.

Since, as of this writing, I am a rather new and unknown entity to the BIEN Community, as part of background, (in addition to my study of the Classics through the "Great Books Program" College that I attended in Annapolis Maryland, in the early/mid 1980s, which oddly enough, while it is as far away from the study of Technology as one can get, seems to have provided me with the kind of broad background to allow me a certain level of generalist insights that I am doubtful that I would have had I focused on a more specific Academic Discipline instead), I need to mention was with my father with whom I first started having these discussions as a child in the mid/late 1970s related to "*Moore's Law*" and the acceleration of technology that it describes that have ultimately led me to embrace the idea of establishing an Unconditional Basic Income for all of the peoples of this world as the single best response to the question of:

"What do we do once *Technological Unemployment* becomes an inescapable reality and clear and present fact of life?"

So, while unlike many of my fellow speakers this year I do not have a primarily Academic background that has been dedicated to this field of study, I do have a rather long ranging and extensive interest in this realm that I have been pursuing for decades.

And, finally, my mother, who, coincidentally enough, met, and married, my father here in München when he was on the Siemens Design Team of the former recently decommissioned Isar Nuclear Power Plant that was closed last year in the wake of the Fukushima catastrophe.

It is also my mother, named after the 10th Century Poetess, Hrosvita of Gandersheim, (whose name means “Strong Voice”), who has also led me to take the stance that I am taking in this paper for several reasons.

One of them being the location of this year’s BIEN Congress being here in the city of Munich.

Just shortly a year after the beginning of WW II my mother was born in the former East German town of Uhyst and grew up there, and then lived in Dresden before she left for the West and ultimately here to München; about a year prior to the raising of the now long gone Berlin Wall.

It was here in Munich, at the very height of the Second World War, that the very first voices to be raised, (from the students of the White Rose Party at the University of München), in resistance and opposition to the war were first heard.



My mother’s near 20 years work, (which took her while she was still pregnant with me from here in Munich to New York City at the time of the Kennedy Assassination), was to secure Restitution Claim Pensions for the Survivors of the Nazi Era Holocaust.

In that time period she handled approximately 5,000 such cases of Death Camp Survivors, many of whom were frequent visitors to my childhood home.

A common question often heard as I was growing up was:

‘Why didn’t people speak up when they had the chance to do so?’

A frequently heard answer, (said by more than one person), to that was:

‘They did, but they did not do it soon enough and they did not loudly enough.’

With all that prior, (and rather historically recent) set of events in mind, that is the reason why I have chosen make this Presentation as loudly, clearly and boldly as I possibly can.

For, knowing what I know, it would be remiss, and an abdication of my duty to my fellow peoples with whom I share our brief time on Earth with, to not speak up now and make my voice heard.

At this moment in time it is highly unlikely that my mother will be able to read this, since as I was first just beginning to sit down and write it a few weeks back she was taken to the hospital after an incident at home and it was there that we first learned that she has very advanced Stage IV cancer that has already reached her brain, making her ability to read

and comprehend this an impossibility.

(Update, in the course of the time that this Paper was being written Roswitha Elisabeth Sterbal, (*nee Hoffmann*), passed in Pittsburgh, Pennsylvania on 19 August, 2012.)

It is to her that I dedicate this paper.

What I will be doing in this Paper is a synthesis and distillation of my survey of the current Extant Literature in the field, as it regards both our coming Era of Technological Unemployment, to bolster my conclusion that it is the establishment of Unconditional Basic Income that is the single best option that we have to meet this oncoming challenge.

I will also be writing this for the average Layperson, as well as for the members of the BIEN Community; which means that whenever and wherever I will keep away from getting too technical in the course of this discussion and aim to keep things as simple as possible.

Since the primary goal is to reach as wide and as broad an audience as humanly possible.

One of the parameters I will adhere to here, so as to keep the discussion as grounded in the reality of the present world that we live in, is to keep as much speculation out of this discussion as is feasible.

That is so as to avoid the common trap prevalent among the Futurist/Singularitarian Transhumanist communities of making wild and wholly unrealistic predictions.

Since it is those sorts of prediction will undermine the sense of urgency that this Paper is trying to instill in the reader, both the experts and the Lay People.

A challenging and daunting task when making extrapolations from the present day to even the very near, not very far off future, which necessitates me avoiding taking Flights of Techno-Optimist Fancy.

In other words, this Paper will, (in the words of the American TV Detective, Sergeant Joe Friday of the show *Dragnet*), aim to stick to:

“Just The Facts, Ma’am.”

That is to say that I will be focusing more on *known, and currently available, Workplace Automation Technology that already exists and is being deployed today* as it applies to the now growing rise of Technological Unemployment rather than on technology that *may, perhaps, just maybe*, come along within the next 10 to 20 years or so.

What will *not* be discussed in this Paper, (even though I am using examples from throughout the genre of Science Fiction to illustrate certain key points), are the now in-vogue topics in the realm of Technology of “The Coming Singularity,” the potential of Artificial Intelligence, the melding with the machine via the uploading of the human mind, mechanical/biological/radical life extension immortality, the SkyNet/Cyberdyne Systems ‘Self-Aware’ Sentient, Thinking Machines as seen in the “Terminator” franchise of films, etc, and other sundry fanciful ‘pie-in-sky’ technology related topics which are at least 20 years away.

If they are even ever to be at all ever possible.

I’ll leave that area of discussion the discussion of the Über-Techno-Optimist-Pessimist Esoterica to the Hollywood movie directors and Fabulist Technology Evangelists who are much better skilled at presenting that sort of thing than I am.

What the body of this Paper will do is go over is as many of these points *using concrete examples of currently existing technology, so as to clearly demonstrate what we can reasonably expect to happen*, as this phenomena of *Technological Unemployment* grows from just a mere glimmer on the horizon to an overwhelming and unavoidable juggernaut.

And, in its Conclusion, how to meet the challenges as how to further organize ourselves in the global Unconditional Basic Income Community as a political, cultural and social force presenting an undeniably clear message to the world at large as to why Unconditional Basic Income needs to and *has to* happen.

And where, and how, to respond to the many-fold criticisms and downright ire and most militant hostility that even so much as daring to raise the subject of Basic Income will inevitably draw.

## **Crossing The Rubicon: Technological Unemployment And Its Discontents An Overview With Examples**

The central Premise of this Paper is that “Peak Employment” as described above in the opening ‘Terms’ section has *already happened* in the world that we live in in the year 2012.

And that it is no longer anymore just a mere “Theory” conjecture, or hypothesis that is best left to the fantasy worlds of Science Fiction.

But that “Peak Employment” is already a clear and present reality in our world today.

That is to say that from this point on, from every day, week, month and year forward, as the costs for employing human workers continue to rise, and the costs to automate labor dramatically drops at a rather precipitous rate; and as that the Productivity Gains to be had from this transition away from human labor will continue to rise at a tremendous and inexorable rate, it is a given mathematical certainty that, with the overwhelmingly compelling economic reasons to make this transition, that year after year we will see significant and ongoing drops in both national and global employment levels; as more and more corporations and firms the world over make the transition away from costly and inefficient human labor to dirt cheap automated labor.

Which will be nothing more than a mere trickle at first.

But, starting in the year 2015, as all of the now disparate, and seemingly unconnected, components snap firmly into place, this small stream of steady job losses will become a veritable and unstoppable tsunami of *Technological Unemployment*.

And that unless a global Basic Income is implemented within a very short span of time, (to no longer be measured in decades, but in mere years from now), then the inevitable result of this transition period away from human labor will be a dire and catastrophic one.

Of an hitherto unforeseen and unimaginable scale.

Not for just 10s of millions of people, but ultimately, (certainly by the end of the 2020s decade), billions of them.

Many of whom, who, despite their abilities as workers, will be left without the means to provide for themselves in any tangible and significant way.

And with that fall into an inescapable poverty.

Out of which many millions upon millions of people, under the economic rules currently in place throughout the whole of the world, will not be able to escape from, and they will quite simply starve to death.

For those that think that I may be slightly over exaggerating this last claim, I say to them that this is not the first time in the last 100 years where a very small and elite cabal of people, (who were able to place themselves into

a position of unchecked and unfettered economic and political power), were able to were able to do unparalleled damage to their greater populations, directly leading to the starvation of well over 100 million people.

The Mass Famines of the Soviet Union under Stalin and of China under Mao, where wholly untenable and unsustainable political and economic systems came into direct conflict with reality, are both cut and dried crystal clear examples of this.

Our modern day 1st World Free Market Capitalist leadership is, (as of this writing), in a much similar position to inflict that same kind of damage upon the peoples of the earth as we have already seen happen in the mid 20th Century.

Only, given the technological tools that they now have at their free disposal, the potential to do such damage is at a much greater and vaster scale than anything that we have previously seen before.

With, at present, no legal, or economic, mechanisms, (not any with any sort of real teeth to them), in place to counter them.

There is all that as well as the specter of losing the control of technology, just as happened less than 100 years ago here on the European Continent during the Great War of 1914 to 1918.

In the entire preceding 19th century there was *not one single battle in any conflict* that had death tolls numbering in the 100s of thousands.

Not one.

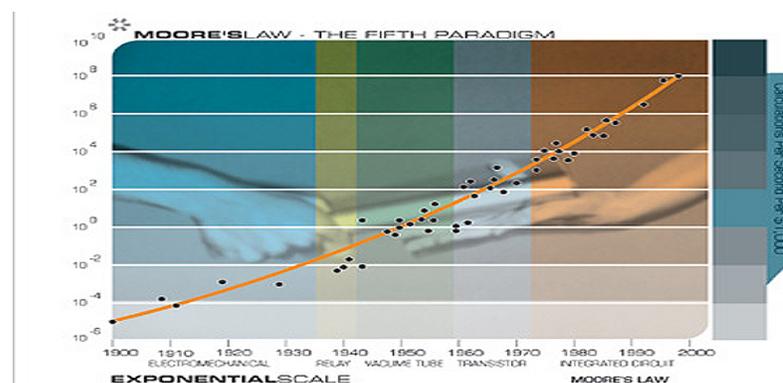
But between the mere 5 years from Henry Ford's introduction of the Moving Assembly Line in December of 1913, to Armistice Day on 11 November of 1918, we saw not just one or two sets of such horrific battlefield losses, but a full score of them.

With at least two of those battles leaving more than a million dead, (the *Battle of the Somme* and the *Brusilov Offensive*, which left a then unparalleled 1.6 million dead), with the average daily loss of life from both civilians and military being over 10,000 dead a day, every day, for that short 4 year period of time that conflict raged on.

So, while our technology can bring us unrivaled blessings we must always be aware of its grave potential to inflict the greatest of damage.

In essence the central premise here is this, if we do not establish Unconditional Basic Income throughout the entire world between now and the coming decade of the 2020s then there will not be a single corner or Nation of the earth where the peoples who live there will not be so adversely affected.

Here is a graphical representation of *Moore's Law* over the course of the last century:



While it is a common interpretation of *Moore's Law* to observe that the price remains constant while doubling the amount of transistors on a small defined area on the CPU of a computer chip on a 2 year cycle, which in turn gives us the

ability to double the processing power of computers, like clockwork, every 2 years, yet another way to look at *Moore's Law* is that it is a "*Blind Force*" of Nature.

That is to say that if one takes another look at this 100 years graphing of *Moore's Law* it also becomes clear that no outside events of the last 20th Century, be they times of good, (the times of relative Peace and Prosperity), or times of ill, (World Wars I and II), either accelerates *Moore's Law*, or impedes *Moore's Law*, in any way, whatsoever.

*Moore's Law* overall pattern in expressing the nature exponentially accelerating technology is that of steady, straight and unbroken line.

Not a one of the atomic bombs that were detonated in Wartime Japan 67 year ago in Hiroshima and Nagasaki, nor any of the 2,051 nuclear devices that have been tested since then, have had even the slightest of impacts on *Moore's Law*.



If over 2,00 nuclear bomb explosions can't make that *Moore's Law* line budge so much as a millimeter in either an up or down direction, then it is highly unlikely, and wholly improbable, that anything else will be able to make it happen either.

This is the point at where the technology is as of right now and where it is expected to go before the year 2020.

Just this past July the TOP500 semi-annual list of the world's fastest supercomputers<sup>1</sup> was released and the fastest computer in the world is now running at a speed of over 16 quadrillion calculations a second, or 16 PetaFLOPS.

Which is a 50% leap over the previous record holder of just 6 month prior, the Fujitsu "*K Computer*" supercomputer which clocked in at 10 PetaFLOPS in November 2011.<sup>2</sup>

"Since 1993, performance of the #1 ranked position has steadily grown in agreement with Moore's Law, doubling roughly every 14 months. As of November 2011, the fastest system is over 176,000 times faster (in terms of peak Tflops) than the fastest system in June 1993."<sup>3</sup>

Thanks to *Moore's Law* in just a little over 5 years from today, in the year 2018, it is anticipated that the fastest supercomputer will be an *Exascale*<sup>4</sup> supercomputer.

That exascale supercomputer machine will be running at a speed that is 100 fold times faster than Fujitsu "*K Computer*" was just a scant 7 years earlier.

And it also has proven E. O. Wilson's predictions from his *Consilience* to be absolutely correct:

*"In 1995 an American team using two linked Intel paragon computers set a world speed record of 281 billion calculations per second. The U.S. federal high-performance program has upped the goal to a trillion calculations per second by the end of the century. By the year 2020, petacrunchers, capable of reaching a thousand trillion calculations per second, may be*

possible, although new technologies and programming methods will be needed to reach that level.”<sup>5</sup>

**You Are Here:**  
↓

	1981	2001	2021	2041
Processor	330 thousand ops/sec	1 billion ops/sec	10 trillion ops/sec	10 quadrillion ops/sec
Disk space	10 megabytes	250 gigabytes	1 petabyte	1 exabyte
Memory (RAM)	64 kilobytes	256 megabytes	1 terabyte	1 petabyte

It is these will be the machines that will ultimately running the global workplace of the near future and those human beings who will be in control of them will have near and incomprehensible god like powers.

With such raw computer processing power like that on tap there will be no need for a ‘thinking, self aware, artificially intelligent computer’ because such processing power that these ‘dumb’ number crunching machines will be more than adequate to handle pretty much any task that is currently being done today by human hands and minds.

Before I begin exploring this topic of ‘Peak Employment brought on by *Technological Unemployment* driven by the phenomena of “Accelerating Technology” as it clearly relates to the need of establishing a universal, and worldwide, global Basic Income Plan’ in as short a time frame as is feasible, I do need to preface all that follows here in this Paper by saying that despite what I have to say about potential dire outcome/s arising from all of this by emphatically stating that first off I am no:

*“Techno Luddite”*

With all of that which that phrase implies, and that there is no one on Earth today who could be more enamored of technological advances than I am.

Indeed, Mister H.G. Welles could appear before me at this very second with a Time Machine, give me more money than Croesus and the ability to communicate in any language or tongue, living or dead, and offer to send me back to any prior period in time I would care to choose, and I would most respectfully decline.

I’ve been on my relative's pig farm in Ptuj in the same year, 1975, that they first got indoor electricity, and, thank you, but no thanks, for the entire prior 10,000 year history of that human settlement their idea of late night TV was to cast shadow puppets on the wall by the light of flames and then candles.

That is not what is at issue here.

The problem is not inherently in the rapidly accelerating technology itself, or even in the displacement of a significant percentage of the world’s +3 billion person Global Labor Force who have had their jobs automated away because of Capitalist Market Forces.

Far from it.

To finally be freed from the millenias long onus of ‘having to work’ and the Book of Genesis’s Precept of Work and Toil, (taken from the Garden of Eden’s story of the Fall of Man), which is still the dominant and over-ruling economic fact of life in the world today, that:

“Man must earn his bread by the sweat of his brow...”<sup>6</sup>

With the now impending prospect of our human sweat being completely removed from the equation, for all that to become a thing of the past, why that is a thing to embrace and celebrate.

To the point that we should all be dancing in the streets in jubilant and gleeful joy.

And it should not be a thing to face with uncertain dread.

That is not at issue here.

The root problem is not in the technology itself.

It is primarily in the inherent logic that is behind our currently prevailing Social, Political, Cultural and, most especially, Economic Climate and Systems of our world today that is what is going to lead to the inevitable clash, collision and crack-up if steps are not taken to avert this looming, foreseeable, *and completely avoidable*, crisis.

That is to say that under the current “Rules of the Game” (that have always up until now, and which still do), which dominate our economic lives at this point in time, all of the real world evidence, (presented every day in every newspaper and television news program on earth), makes it abundantly and compellingly clear, beyond a shadow of a doubt, that we are in no way prepared, (on *any* of these Social, Political, Cultural and Economic levels), for the revolutionary levels of change that that we will be experiencing the world over in an incredibly short period of time as a result of the technological changes that will happen within just the next 5 to 10 years.

As I pointed out in the Preface there are many others have already preceded me in stating the exact same points which are in this Paper.

Most particularly, Marshall Brain, founder of the “HowItWorks”<sup>7</sup> website, and prolific technology author.

Brain is the writer of his aforementioned online science fiction short story “Manna” which details 2 separate scenarios; one a very near future dystopian world ruled by a tiny elite in which most jobs and work for most of United States workforce of people have been automated away.

Which leads to the vast majority of the America’s population living like herded cattle at a subsistence level in Government built Welfare Dormitories being tended to for the whole of their natural lives to by robots.

The other side of the coin that Brain presents in “Manna” is that of a potential Technological Utopia in which the struggle of humanity for its ‘Daily Bread’ has been eliminated, and people are free to live their lives as they see fit, in total freedom, enjoying all the blessings and fruits that our shared technology has to offer all of humanity.

Which is also the ultimate goal, (the freedom of each person to live their lives as they see fit, and have the means to do so), of Unconditional Basic Income, is it not?

In addition to this fictional work of his in the early 2000s Brain has also published a companion online series of non-fiction Essays called ‘Robotic Nation’<sup>8</sup> which in where Brain outlines through extrapolation where accelerating technology is destined to head if things were to stay on their present course at the time of the writing of that series.

Which they more or less have.

Of all the people working in this field I have found Marshall Brain’s prior work to have been the most factually grounded and consistently accurate, which is why I am putting so much emphasis on it here.

Especially since in addition to all of his work on the technology side he is also the single most vocal proponent of the need to establish an annual \$25K a year Stipend for every American citizen.

Of all the authors currently working in this field he stands fairly alone in his Essay that he wrote in the year 2003:

*“True Economic Freedom for every U.S. citizen - The \$25000 per year Stipend”<sup>9</sup>*

In which Brain calls for an American based Basic Income to meet the shortfalls of what *Technological Unemployment* will bring in its wake.

The difference between what I am presenting now, (primarily using publicly available and known information and facts), and what Brain has extensively written about in his extrapolations is that at the time of his writing in the years 2002 to 2003 many of things that he was pointing out were developments which may occur, were the underlying technology he was

discussing in his Essays to stay on its historical track.

But now many of them have indeed occurred in very much the way in which he predicted that path to take.

With many of his other predictions now also being on the cusp of coming to pass in a radical and transformative way.

Where Brain was writing from a position of “based on what we know, unless some form of significant action is taken, there is a very strong possibility that these things may happen,” I find myself in following his work in a spot where I can now point to tangible, real world, examples, of how this predicted world of his and others has become a reality today.

For example there is the natural language processing speech to text voice recognition “*Dictation*” software that now is included in the latest update to Apple Computer’s OS X Macintosh operating system, Mac OS 10.8, (which, as of this writing, was released less than a week ago), which allows me to “*Talk anywhere you can type*” and with “*No setup or training required*” it “*Works with any app*” (that, by the way, *I am using to almost flawlessly write this very sentence*), which I have found to work at a level of accuracy that I estimate to be over 90%.<sup>10</sup>

This level of accuracy for speech to text transcription was not anticipated in many technologically knowledgeable corners for at least another 2 to 3 years from now.

Yet here it is.

And it works *spectacularly* well.

Now with the constant rate of improvement that such software sees it is not inconceivable, improbable, or unlikely, that within the next 2 to 3 years the accuracy rates will rise to a level of 95% or better.

Especially if a company like Google also incorporates this technology into the entirety of their Chrome Browser.

One aspect of ‘machine learning’ is that they get better every and learn something with every with every single use, and if all of a sudden 100s of millions of people begin to use this technology at once companies like Apple and Google will have absolutely massive Data Sets to teach their machines with, which will greatly accelerate the development of this particular technology.

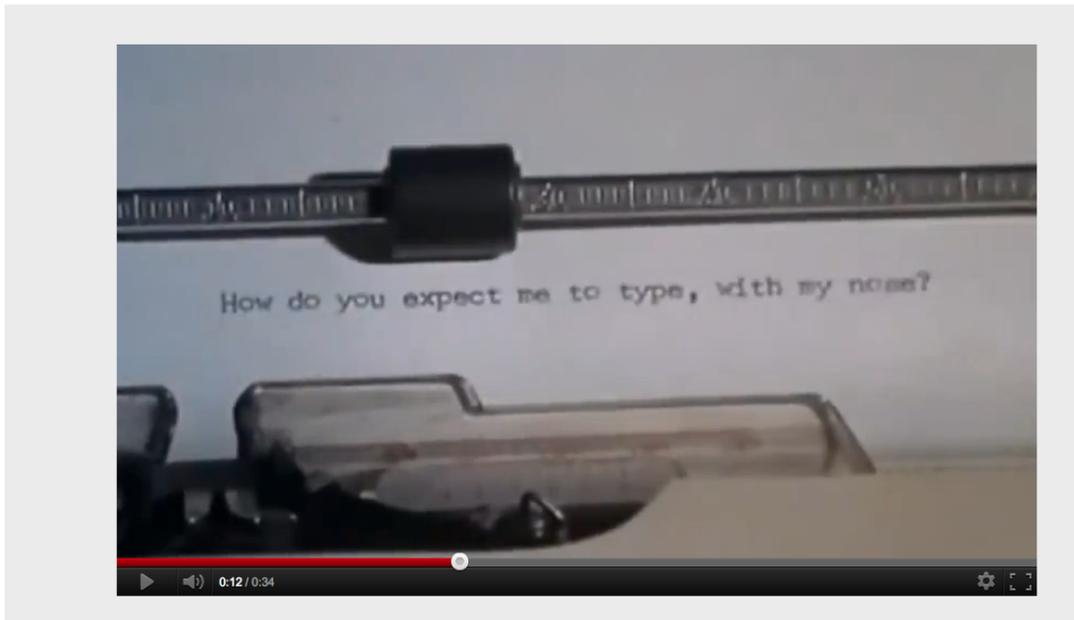
Within 5 years it is a mathematical certainty that it will reach and cross that 95% level of accuracy.

At which point this particular technology will equal and/or supercede current human skill levels.

And not only will it do a better job than an American Administrative Assistant.

But it will do it for a much more significantly and dramatically lower cost than the average \$36K a year Median Base Pay an Administrative Assistant earned in the US in the year 2010.<sup>11</sup>

Just that alone leaves 4 million such jobs in just the United States alone which will be immediately, and instantly, susceptible to replacement in between the years 2015 and the year 2020.



[This is “Star Trek” level technology and it exists right now.](#)<sup>12</sup>

Worldwide, if the USA’s 150 million person Labor Force is 5% of the world’s +3.2 billion person Labor Force, then that figure is 20 times greater.

Globally 80 million such secretarial jobs currently exist.

If only 1 out of 3 of them are automated away, (a most conservative metric), then that is over 25 million jobs worldwide that will be susceptible and utterly vulnerable to being completely gone by the beginning of the 2020s.

And that number can conceivably easily double by the year 2025.

This is one of many sectors that are seeing these blindingly fast levels of improvement.

Another is that of sales and teaching.

Leaving aside the recent mushrooming growth of Online Educational websites such as the Khan Academy, MIT’s OpenCourseWare, iTunes U, Coursera, and Udacity, my sister-in-law is a 3rd Grade Elementary School Teacher in an Eastern American city

She’s very, very, good at her job, I understand that her students and their parents just adore her, and after 15 years on the job in return for work she’s decently compensated for her time.

Between her actual take home pay, (which is right on the current United States Annual Income Median<sup>13</sup> for her teaching position), a Benefits and Retirement Package in line what the prevailing Pensions are for such a position as hers, with all that she sees about \$70K a year in overall take-home recompense.

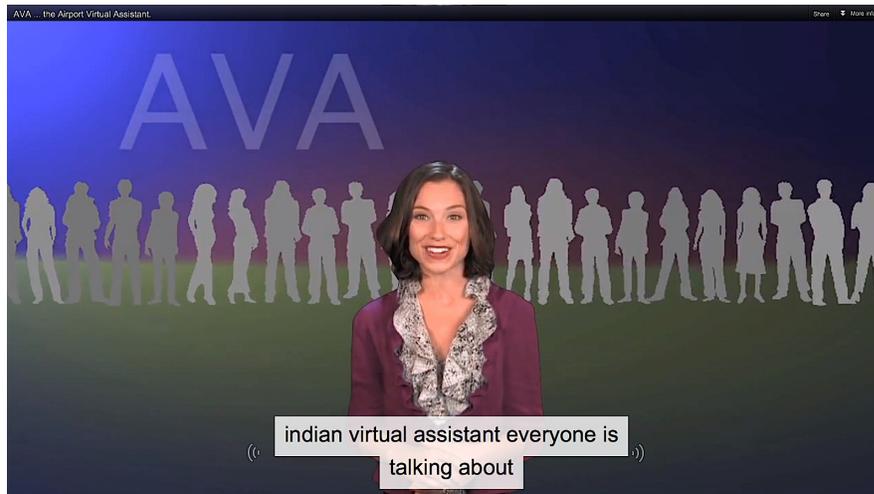
And she’s worth more than every single last penny of it.

However, between what she takes home every year, and what it costs to employ her there is a difference, which is known as a ‘Load Cost’, i.e., to restate it from the ‘Terms’ section:

*“The fully loaded cost of an employee is at least twice his or her annual salary.”<sup>14</sup>*

This is true, not just for her, but pretty much for every employee in every work situation that there is.

[Now meet AVA, the Airport Virtual Assistant.](#)



Starting in this July of 2012 this holographic Customer Service avatar, and 2 others just like it, are a brand New Hire at NYC's LaGuardia, JFK and Newark Airports.

This is a “holographic, computer-generated “person” that will look, talk and even dress just like the airports’ live customer service agents.”

All 3 units cost the airports \$60K each.<sup>15</sup>

These are just Proof of Concept Prototypes with very limited abilities at this point, which the company lists in its brochure as such:

***“Delivers a clear and consistent message under most environments.  
Works 24 hours, 7 days a week and never takes a break!  
No background check required!***

***Advanced options include multilingual, motion sensors, voice recognition, remote control, acoustic automation, and others.  
Completely customizable solution –multiple message choices, multiple style choices, multiple attire choices.”<sup>16</sup>***

All ideal qualifications for a teacher of 3rd graders, are they not?

And so 5 years from now it's not inconceivable or far fetched that those models coming to market in the year 2017 will have much more to offer the US's school systems in terms of costs savings and efficiency and, in these uncertain economic times for many Municipalities throughout the United States, they will likely be readily embraced and swiftly adopted.

If only 1 out of 3 teachers are so replaced that is over 500,000 teachers jobs that will no longer exist.

Couple natural language processing voice recognition technology with an ‘always on’ wi-fi connection to the databases in ‘the cloud’ with sensors for vision and all of a sudden you've got a school teacher that can not only instantaneously know everything there is to teach, and keep second by second track of the progress of every single pupil in a classroom of 50 kids, but this teacher will quite literally have “eyes in the back of her head” which should do wonders for maintaining a productive and disciplined classroom environment.

At a fraction of the cost that any human teacher can do the same job.

Doubtful that my sister-in-law will be adversely impacted, her job is safe for at least the next 5 years, at which time her Retirement Pension should fully vest, but, given this kind of competition coming up on the horizon it is doubtful that anyone pursuing a career in teaching after that point in time will find it to be worth their while.

At least they won't be able to financially support themselves on the starting salary of what an American school teacher will be offered after AVA makes her classroom debut, since any offers made to humans will be less than what AVA will cost to operate for a year.

It's not just school teachers that will be vulnerable to AVA's arrival in the workplace.

In the above video in the 'Applications' section the company lists other occupations that AVA will be ideally suited for, to include Transportation, Stadium, Retail, and Theme Parks.<sup>17</sup>

Just in the category of "Retail Sales Workers" alone the US Bureau of Labor Statistics lists just under 4.5 million American jobs<sup>15</sup> and if only 1/3rd of those jobs get replaced, that's nearly 1.5 million jobs, or roughly 1% of the entire current US Labor Force of the year 2012.<sup>18</sup>

This is not the only approach to Retail Sales that is now being implemented and deployed.

Here is a Prototype McDonald's Touch Screen Ordering Kiosk, (a bit more advanced and sophisticated than the one that Marshall Brain describes seeing in a North Carolina McDonalds almost 10 years ago in the opening of his online Robotic Nation Essays), that was being Field Tested here in the Munich Tal Straße location in the spring of the year 2009:



[And here is a video demonstration of it in action:](#)



As you can see in this video the entire process of placing an order took me all of less than 3 minutes to complete from beginning to end, (roughly the same amount of time that transaction would have taken with a human cashier), and one side benefit is that the order that I placed was 100% correct with no errors, other than the ones that I myself may have made, which in turn leads to reducing customer complaints.

This 2009 Field Test must have been successful for McDonalds since 2 years later in the year 2011 they announced that they were installing these Kiosks in 7,000 locations throughout the EU.<sup>19</sup>

Figure an average of 3 Kiosks per location and that each Kiosk can do the work of 2 full time Cashiers and that is over 40,000 jobs that these Kiosks can now assume in McDonald's EU region; which approximately 10% of McDonald's entire 420,000 person worldwide workforce.<sup>20</sup>

McDonald's has almost twice as many locations in the US as it does in the EU.<sup>21</sup>

Were they to deploy these Kiosks in the US and displace an equivalent amount of their US workforce that works as cashiers, that would be another 80,000 jobs, or approximately just under a 1/3rd of its entire workforce.

As I will demonstrate in the following section on the underlying economics this can lead to McDonalds saving themselves about \$2.5 billion dollars a year in annual Labor Costs.

Lastly just to round this section out another example that has gotten much recent attention is the Google Driverless Car, which Google is claiming that they are on track with for the technology to be commercially available for mass adoption as early as the year 2018.<sup>22</sup>

But they are not the only ones working in this field.

One item that didn't receive anywhere near the same public attention as the Google Car has gotten is the VIAC, the VisLab Intercontinental Autonomous Challenge of two years ago in the summer of 2010.

Where in just 100 days 2 fully automated driverless vehicles made a nearly 15,000 kilometer trip on open roads from Parma, Italy to Shanghai, China.<sup>23</sup>

What makes this even more remarkable is the amount of 'leaps and bounds' progress that this trip demonstrated.

Just 6 years prior during DARPA's very first 'Grand Challenge' not a single team's driverless car was able to go more than 7 miles on a closed 150 mile course out in the American Mojave Desert.<sup>24</sup>

The VisLab Team states on their website that:

*As a driver you might benefit from this effort in the next 10 to 15 years.*

*So: no direct benefit now, but the research carried out in this field might be of a great help to car drivers when cars will be equipped with these technologies.*

*A car that can warn you when drifting off the lane, when approaching a curve too fast, when driving unsafely in an urban area, ... will become a reality thanks to these studies.*

*Remember that more than 90% of road accidents are due to human errors! A system able to help the driver might be very useful to avoid some of these accidents!<sup>25</sup>*

So to take Google's estimate of a target date of 2018 and the VisLab's longest projection of the year 2025 and split the difference that brings it to becoming a viable technology by the year 2020.

In the US alone, between Transportation jobs in Heavy and Tractor-trailer Truck Driving, (1,604,800 jobs, 2010 Median Income: \$37,770 per year /\$18.16 per hour),<sup>26</sup> Bus Drivers, (647,200 jobs, 2010 Median Income: \$29,160 per year/\$14.02 per hour),<sup>27</sup> Delivery Truck Drivers and Driver/Sales Workers, (1,262,600 jobs, 2010 Median Income: \$27,050 per year/\$13.00 per hour),<sup>28</sup> Taxi Drivers and Chauffeurs, (239,900 jobs, 2010 Median Income: \$22,440 per year/\$10.79 per hour),<sup>29</sup> there are currently 3.75 million such jobs.

Once the superiority of automated driving proves itself primarily via improved safety, (there are about 40,000 vehicular deaths a year in the US, and it is projected at a minimum driverless cars can cut that in half, if not significantly more), and increased fuel efficiency savings it is more than likely that the vast majority of these jobs will promptly be taken over by machines.

On the altogether, if we add up just all of the fields talked about in this section, driving, teaching, retail sales and cashiering, office administration, that is well over 15 million jobs, 10% of the total current US Labor Force, whose jobs are susceptible to being eliminated by automation.

This does not take into account ancillary job losses that will stem from this, i.e., with automated cars there will be a much lesser need for Traffic Police to give out speeding tickets and the Court System to levy and collect fines, so these overall general estimates could be as much as a third lower from what they may end up being.

Were that to happen overnight that would more than double the current officially reported national Unemployment figure in the US, and if we can't handle the level of Unemployment that we have today there is no way that the American or world economies will be able to sustain this kind of massive shock to the system.

In this section I have only mentioned just a few work areas that face the near term prospect of automated job replacement, (without so much as even mentioning the now emerging and rapidly evolving technologies associated with 3-D Printing; which have the potential to completely up-end and disrupt the entire Manufacturing Sector throughout the entire world), and I have only discussed Lower Income and Blue Collar/Middle Level Income Work, in the Conclusions section I will briefly touch on the omission in this section the vulnerability that Professional White Collar Work is also facing, because it is just as susceptible to being automated away.

It worth keeping in mind that right now in addition to all the examples listed in this section there is also massive amounts of Capital Resources, numbering into the \$100s of millions to billions of dollars, that are being allocated towards Research and Development which is aimed almost every other Service Sector job in the American Economy and that the examples listed here are just the tip of the proverbial iceberg.

This passage from the Robotic Nation Essay, (first published on July 22, 2003), by Marshall Brain, (where he describes where things may be by the decades of the 2040s to 2050s), is worth citing at length here to illustrate the key points in this section.

With the caveat that given the rate of increase that we are seeing today that all that Brain describes here will likely be very much like the world of work that we will be experiencing within the next 10 to 15 years, versus 20 to 30 years from now:

*"It is easy to understand that there will be huge job losses by 2040 or 2050 as robots move into the workplace.*

*For example:*

*Nearly every construction job will go to a robot.*

***That's about 6 million jobs lost.***

*Nearly every manufacturing job will go to a robot.  
That's 16 million jobs lost.*

*Nearly every transportation job will go to a robot.  
That's 3 million jobs lost.*

*Many wholesale and retail jobs will go to robots.  
That's at least 15 million lost jobs.*

*Nearly every hotel and restaurant job will go to a robot.  
That's 10 million jobs lost.*

*If you add that all up, it's over 50 million jobs lost to robots.*

***That is a conservative estimate.***

*By 2050 or so, it is very likely that over half the jobs in the United States will be held by robots.*

*All the people who are holding jobs like those today will be unemployed.*

***American society has no way to deal with a situation where half of the workers are unemployed.***

*During the Great Depression at its very worst, 25% of the population was unemployed.*

*In the robotic future, where 50 million jobs are lost, there is the potential for 50% unemployment.*

*The conventional wisdom says that the economy will create 50 million new jobs to absorb all the unemployed people, but that raises two important questions:*

***What will those new jobs be?***

*They won't be in manufacturing -- robots will hold all the manufacturing jobs.*

*They won't be in the service sector (where most new jobs are now) -- robots will work in all the restaurants and retail stores.*

*They won't be in transportation -- robots will be driving everything.*

*They won't be in security (robotic police, robotic firefighters), the military (robotic soldiers), entertainment (robotic actors), medicine (robotic doctors, nurses, pharmacists, counselors), construction (robotic construction workers), aviation (robotic pilots, robotic air traffic controllers), office work (robotic receptionists, call centers and managers), research (robotic scientists), education (robotic teachers and computer-based training), programming or engineering (outsourced to India at one-tenth the cost), farming (robotic agricultural machinery), etc.*

***We are assuming that the economy is going to invent an entirely new category of employment that will absorb half of the working population.***

***Why isn't the economy creating those new jobs now?***

*Today there are millions of unemployed people.*

*There are also tens of millions of people who would gladly abandon their minimum wage jobs scrubbing toilets, flipping burgers, driving trucks and shelving inventory for something better.*

*This imaginary new category of employment does not hinge on technology -- it is going to employ people, after all, in massive numbers -- it is going to employ half of today's working population.*

***Why don't we see any evidence of this new category of jobs today?***<sup>30</sup>

I will further discuss the underlying economics that are behind this, and how it will also *directly lead to the greatest single concentration of wealth in all of our 5,000 year long written Human History*, in greater detail in the following section.

Before moving onto that section on the underlying economics that is the engine that will drive the train of Technological Unemployment, I do want to briefly return to the Frank Rieger *Frankfurt Allgemeine Zeitung* article that I mentioned above in the Preface.

I said that it was striking to me in that Herr Rieger also reached the same conclusions as I did about the consequences about the rise of accelerating technology and the path towards Basic Income that we should take in adapting to it.

For the last several years I have been watching marked improvements occur in all sectors of technology, most of them happening behind the scenes, transparently and invisibly to us, the average end users.

But if you know what to look for, then these major, across the board advances, won't be invisible or imperceptible to you.

Nor will it take very long to see these many continual background improvements that have happened underneath the hood of the car quite clearly for yourselves.

Online telephone video communications have gotten much smoother, stable and robust, with the time lag "latency" issues between callers that used to plague the service having been eliminated to the point where it is not uncommon to see journalists in the field use video telephony to report live on the Evening News, high definition 1080p YouTube videos have gone from taking blocks of 10s of minutes to process and play as intended to mere minutes, the accuracy rate for Automated Machine Transcribed "Closed Captioning" for 'Spoken Word' videos on YouTube have gone from being laughable to being usable in the High School and College classroom, Operating Systems in general now work solidly, are significantly less 'buggy' and prone to frequent crashes that were a regular part of the average end-user's experience less than 10 years ago.

In short everything has gotten a whole lot better in a very brief span of time.

With the exception of online translating.

Across multiple languages, across the board, they've all failed even the most rudimentary of *Turing Tests*.<sup>31</sup>

When I came across Herr Rieger's article, more for amusement than anything else, I plugged it into Google Translate just to see what it would return.

Thinking that what I would get back from it would be a mangled mess of unreadable and incohesive text that would make the American politician, Sarah Palin, (who became famously notorious for her ability to destroy spoken English as a "word salad tosser"), green with envy.

Instead what I got back was a level of translation from German into English that was nothing less than astonishing.

Had I as little as a year ago plugged this very same article into Google Translate I know that what I would have gotten back would have been a completely mangled mess.

Please have a look at it yourselves here:

***"Automation Dividend For All"***<sup>32</sup>

Direct link in the 'Citation' Section

While it is far from perfect, it is absolutely light years away from where it was not very long ago.

At this particular point in time, (all of just a single year ago), it simply would not have been able to get this caliber of translation.

Not for all the love and money in the world.

And it is now to the subject of money and the underlying economics of *Technological Unemployment*, (which is very the heart of this disposition), that this Paper will now turn to.

**Capitalism**  
**It's About The Money**  
**It's ALWAYS Been About The Money**  
**The New Victorians Of The 21st Century**

*“He remembered his graduate school advisor, white-haired Professor Alice Tyler, at the beginning of her first lecture on the Victorians saying:*

*'This is the period of American history I just hate to teach.'*

*When asked why, she said, 'It's so depressing.'*

*Victorians in America, she explained, were Nouveaux Riches who had no guidelines for what to do with all their sudden wealth and growth.*

*What was depressing about them was their ugly gracelessness:  
The gracelessness of someone who has outgrown his own codes of self-regulation.*

***They didn't know how to relate to money.***  
*That was the problem.*

*It was partly the new post-Civil War Industrial Revolution.  
Fortunes were being made in steel, lumber, cattle, machinery, railroads and land.*

*Everywhere one looked new innovations were creating fortunes where there was nothing before.*

***Cheap labor was pouring in from Europe.***

***No income taxes and no social codes really forced a sharing of the wealth.  
After scrambling for their lives to get it, they couldn't just give it away.***

*And so the whole thing became involuted...”*

***Robert Pirsig***  
***“Lila: An Inquiry into Morals” 1991<sup>1</sup>***

This revolutionary change in our global Workplace being brought on today by the transition away from Human Labor to the full embrace of Automation in the Workplace is happening at the rapid rate of adoption that it is:

*Primarily because of the inherent underlying economic and cost cutting reasons behind it.*

***Much more so than any one single other factor.***

This is because of the inherent economic nature of Capitalism itself.

For the last several years a Great Fallacy has been presented over and over again, so much so that it has become unquestioned and unquestionable “Received Wisdom” to the World at Large.

This misrepresentation, of what is truly reality, is that Capitalism is:

***“The Engine of Job Creation”***

When nothing at all could be further from the truth.

Our modern day economic system of Capitalism has never ever been about:

*“Job Creation”*

In fact the very opposite of is true.

The whole, and utterly, entire point of the modern day Capitalist Philosophy, beginning with the writings of Adam Smith, has been that of..

**Job ELIMINATION.**

*“By whatever means necessary.”<sup>2</sup>*

Indeed there is just one overriding fact of the True Nature of Capitalism throughout its entire history.

A visible and demonstrable fact that supersedes all others.

That indisputable fact is that as soon as more efficient and cheaper methods of delivering a Good or Service to The Market emerges, then the older, costlier and less efficient method of delivering Goods and Services to The Market are then promptly and immediately abandoned.

Historically speaking cutting Labor Costs has *always* been the most reliable way to boost Profit Margins.

In this following section I will demonstrate just how radical the difference is in annual Labor Costs are to companies such as Amazon.com and Walmart between what their Annual Costs are to employ American Minimum Wage workers vs. what an Automated Amazon Warehouse staffed by their Kiva Systems Order Fulfillment Warehouse Robotic Systems..

It is these dramatically lower Annual Labor Costs savings that Workplace Automation will bring over the current costs of Human Labor that will be *the main driver and engine of this coming and inevitable transition away from Human Labor.*

Given this Primary Law of Capitalism to boost Profit Margins by cutting costs whenever, and wherever, possible it is already a foregone conclusion that this is an inevitable reality.

And that will also lead to, and this point can not be stressed enough, the single greatest Concentration of Wealth in all of our Human History

By the end of this decade never will so few have had so much.

And never will have so many had so little.

It need not be that way.

But before we drill down into the relevant numbers it, is helpful to understand what the science fiction regarding Technological Unemployment used to be.

So as to give some perspective and get a very clear sense of where it is today.

With that here is a brief scene from the May 15th, 1964 episode of the Twilight Zone TV show:

*“The Brain Center At Whipple’s”<sup>3</sup>*

Which incidentally first ran, (just a 2 short months after my birth, in the preceding month of March, which literally means that I was still in diapers when it came on), nearly 50 years ago:



[Please click on this link to play this video file it will open in a separate window](#)

That was then.

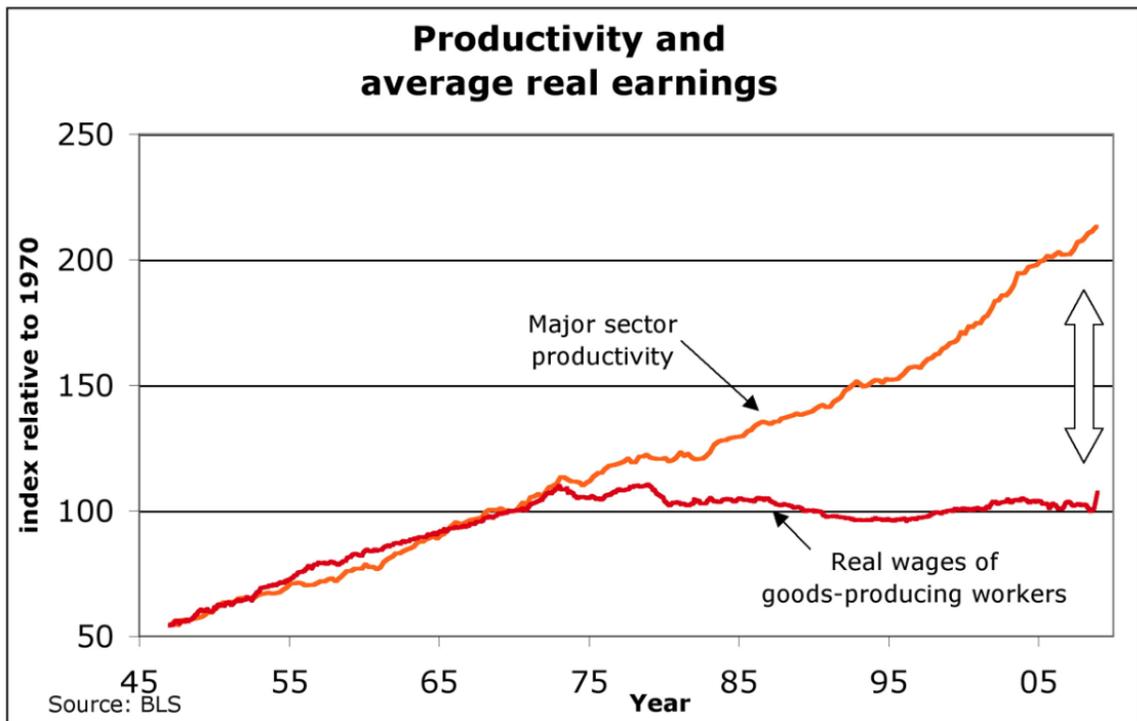
This is now.

What is absolutely stunning and astonishing is the total quantum leap between that near 50 year old piece of science fiction and what our present reality today now is.

Our level of technology has superseded and already far surpassed what is in seen in this little television fictional dramatization.

*By several Orders of Magnitude.*

With that in mind, there is no better way to illustrate what has happened to worker’s wages, and how they have gone stagnant, than as seen in this chart that shows the decoupling of worker’s wages away from Productivity that began 40 years ago in the US.



**Growth Of Real Hourly Compensation For Production/Non-Supervisory Workers And Productivity From 1945 to 2011**

With the advent of Workplace Automation if the following breakdown of the math is correct then what will begin to happen starting in the year 2015 is that we will see the “Major Sector Productivity” line on this chart not only just spike sharply, while the Wage line begins to plunge, but this “Productivity” line, which reflects the flow of money directly to the Owners and Shareholders, will likely point straight up.

Here are the reasons why.

Last year Apple Computer’s largest Supplier and Manufacturer, Foxconn, (with over 2 million workers Foxconn is the single largest employer in Mainland China), announced their plans to transition away from a human Labo to a 1,000,000 robot workforce beginning in the year 2013 and they expect this switch-over to be fully Operational by the year 2016, less than 4 years from now.<sup>4</sup>

In just the last several months Foxconn announced that it was raising their worker’s annual Wages to \$7,500 US Dollars a year.<sup>5</sup>

So the question becomes does this transition make economic sense for Foxconn?

That is, not counting what Foxconn’s added “Load Cost” is that was described in the ‘Terms’ section, will these robots cost Foxconn less than \$7.5 billion dollars a year to operate?

In my research I have not been able to find any reliable figures from Foxconn, so by way of example, with figures that I do know to be reliable, I will attempt to come up with answers to those questions by giving an overview of another automated system that is already currently in operation in the US in the year 2012.

That is of the Amazon.com Kiva Systems Warehouse Order Fulfillment system that Amazon plans to have completely running in all of the 69 warehouses that it has in the USA today.<sup>6</sup>

Today, in the year 2012, on an annual basis, a ‘Human Worker Free’ Amazon.com Kiva Systems Automated Warehouse in the USA, employing 1,000 Order Fulfillment Kiva Systems Robots, instead of 1,000 American Minimum Wage human workers, is already 2/3rds more cost-effective for Amazon to operate than it is for Amazon to employ the lowest

*paid US Minimum Wage Workers.*

The Mathematics of it break down like this:

An American laborer, now earning the American Federally Mandated Minimum Wage earns \$7.25 an hour.<sup>7</sup>

For the approximate 2,000 hours of the American work year.

Which gives them a 'Take-Home' Annual Income of approximately:

\$15 thousand US Dollars each year.

However this \$7.25 US Dollar an hour wage is not the 'True Cost' for the Employer.

The reality of the situation is that for an American Labor Employer the annual cost to them to use a Minimum Wage worker as mentioned above in the description of Employer "Load Costs" is about double that \$7.25 dollar an hour figure.

Which brings it to \$15 dollars an hour.

Or \$30 thousand US dollars a year.

*"The cost to Amazon to set up a warehouse of 1,000 Kiva System Robots is between \$15 million dollars to \$20 million dollars."*<sup>9</sup>

Which, (on the high end of that figure), makes the average cost of each Kiva Systems Robot \$20 thousand US Dollars.

Assume that each Kiva Systems Robot has follow this rule of thumb, "Typically the rule is that if a robot costs more than two years salary, it's more cost effective to just hire a human worker," and has a "Life Expectancy" of 2 years.<sup>9a</sup>

Which then translates to \$10 thousand US Dollars, a year, per each Kiva Systems Robot.

Or, expressed another way, for each human worker that these robots will replace in Amazon's 69 Warehouses in the US, that is an annual Labor Cost savings to Amazon of \$20 thousand dollars a year.

Were Amazon to replace just half of its near 70,000 person Warehouse workforce, (assuming that there are at least 1,000 workers per warehouse), in the US, (which are its current plans), that alone is an annual Labor Cost savings to Amazon of nearly three quarters of a billion dollars a year.

Which means that in just the first year alone Amazon will have completely recouped their entire \$775 million dollars in cash investment that they made when they bought Kiva Systems outright in February of 2012.<sup>10</sup>

I have left out one important factor to consider in these calculations.

While a human worker in the course of a year generally is limited to working a 40 hour week, for 50 weeks of the year, for an annual total of just over 2,000 hours, there are no such time limits or constraints put on an automated worker.

Which means that one of these robots can put in at least 4 times as many hours in a year as a human worker can.

Which means to Amazon that it costs them 2/3rds less per year, per robot.

And each robot can work upwards of 8,000 hours a year.

Versus a human worker that will only work 2,000 hours.

Get 4 times the work, for 2/3rds of the money.

Those are some downright compelling economics.

Not just for Amazon, but for every other Big Box Store retailer in the United States.

To include Walmart.

Were Walmart to license these Kiva Systems robots from Amazon and put them to work in their US warehouses, they can easily replace 25% of their current 2 million person workforce.

For Walmart there are \$10 billion US Dollars a year, (*every* year), worth of annual Labor Cost savings reasons to do so.

Were Walmart to replace 500,000 of its American Minimum Wage workers with these Kiva System robots.

With those kind of annual Labor Cost savings to be had, just sitting there on the table for the taking, is there any reason why Walmart, (or any other Big Box firm operating on US soil), would be hesitant to make this transition away from human labor as soon as humanly possible?

I can't think of a single one, can you?

Now back to Foxconn.

Assuming that the average cost per Foxconn worker robot will be equal to the cost of an Amazon/Kiva robot, (that is a \$10K a year robot will cost Foxconn 25% more per year than the \$7,500 US Dollar a year Wage paid to their workers), so on that basis alone, no it does not make any economic sense for them to make this transition.

However if one factors in the fact that each of these robots can work at least double the 12 hours a day that a Chinese Foxconn worker works a day<sup>11</sup> and is prone to make less errors than any human can, then at that point it begins to make perfect sense for Foxconn to make this transition.

And so they will.

Which no doubt will significantly boost their annual Profit Margins as well as Apple Computers, since it is unimaginable that Apple will be dropping the price of their iPads and MacBooks

If one were to add up the \$20 thousand dollar a year in annual Labor Cost savings that replacing *just half of the 4 million of the American workforce that currently earns the US Federal Minimum wage*,<sup>12</sup> then that overall figure is \$80 billion US Dollars a year.

Where do all these annual Labor Costs savings go?

According to Marshall Brain it is going to flow in one direction and one direction only.

Straight up.

Here is his description written almost 10 years ago of this phenomena using the likelihood of Walmart replacing 1 million of their workers with robots.

Which, (given both where the previously discussed AVA holographic 3D avatars and Kiva Systems Robots are today), can now realistically happen within the space of the next 3 to 5 years:

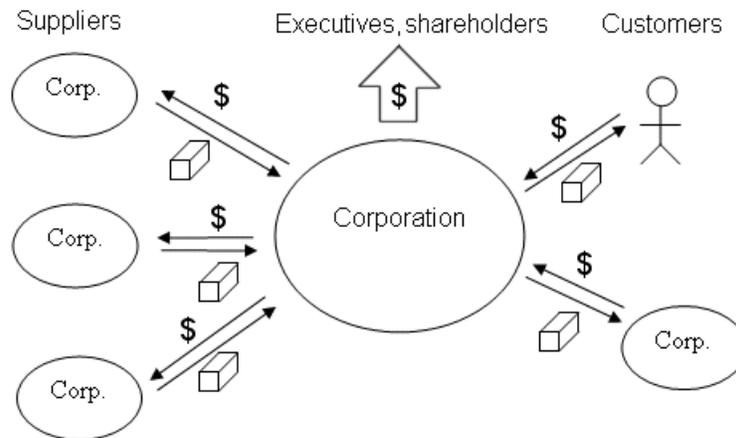
### **Robots will turbocharge the Concentration of Wealth**

*"Let's take America's largest corporation -- Wal-Mart -- as an example.*

*Wal-Mart currently employs over 1.3 million people.*

*Imagine that Wal-Mart is able to deploy robots over a relatively short period of time and eliminate one million of those employees.”*

As seen in this chart which has zero human workers involved in the manufacturing and sales process:



**With most of the rank and file employees replaced by robots and eliminated from the payroll, all of the money flowing into a large corporation has only one place to go -- upward toward the executives and shareholders. The concentration of wealth will be dramatic when robots arrive.**

*“With the rank and file employees gone, all of the money in the corporation flows upward to the executives and shareholders.*

*The concentration of wealth will accelerate dramatically because robots allow real automation in the service sector for the first time in history.*

*The amount of money paid to executives and shareholders will be remarkable.”<sup>13</sup>*

Were Walmart to follow this plan that Brain outlines and eliminate 1 million of its lowest paid workers, saving \$20 thousand US dollars a year per each replaced worker, the annual costs Labor Costs savings to them will be a minimum of \$20 billion US Dollars a year.

Now this is just for the lowest paid workers in the US.

To give an idea of just how much more dramatic this Concentration of Wealth can become by the year 2020, if only 5% of the US’s Labor Force is transitioned into Automation, consider the following.

Today the current Median Income for US Workers is \$45K US Dollars a year.<sup>14</sup>

If Automation displaces 5% of those 150 million US workers, and cuts annual Labor Costs by 2/3rds, (or \$30K a year per worker), then the annual costs savings from just that 5% of the US workforce alone will be:

*\$225 billion dollars a year.*

Every year, from that point forward.

These monies will not flow to anyone else in the American economy but to a very limited pool of people, numbering at most in the 100s of thousands of people, out of a pool of over 320 million American women, children and men.

As more and more workers get displaced, this upward flow will only increase.

And it is not outside of the realm of the possible or at all improbable that by the year 2030, if not even earlier than that, that these Labor Cost savings will pass the \$1 trillion dollar a year threshold.

It is this basic and that simple that this set of profit driven economic realities that will be the *overwhelming force* that will drive this transition away from human labor towards that of fully automated labor, in all areas of human endeavour, and that is the reason why a global Unconditional Basic Income Program must be established before the end of this decade.

## **Conclusions, Recommendations, Proposals And The Human Opportunity Making It All Worthwhile**

***“The curse of poverty has no justification in our age.***

***It is socially as cruel and blind as the practice of cannibalism at the dawn of civilization.***

***When men ate each other because they had not yet learned to take food from the soil or to consume the abundant animal life around them.***

***The time has come for us to civilize ourselves by the total, direct and immediate abolition of poverty.”***

*Reverend Dr. Martin Luther King, 1967*

*Where Do We Go From Here: Chaos or Community?*

**“Those jobs aren’t coming back”**

*Steve Jobs, the late former CEO of Apple Computer, in response to President Obama’s questions to him at a Silicon Valley Summit held on February 17th, 2011:*

*“What would it take to make iPhones in the United States?  
Why can’t that work come home?”*

***The advice I’d give to the 1 percent today is:***

***Harden your hearts.***

*“When invited to consider proposals to reduce inequality—by raising taxes and investing in education, public works, health care, and science—put any latent notions of altruism aside and reduce the idea to one of unadulterated self-interest.*

*Don’t embrace it because it helps other people.*

*Just do it for yourself.”*

***Joseph Stiglitz***

All the money in the world, (\$70 trillion dollars a year),<sup>1</sup> divided by all the people in the world, (7 billion souls), averages out to \$10 thousand dollars.<sup>2</sup>

Per person, per year.

Pretty simple and elegant math, and it works out to an easily understandable round number as well.

Clearly with us having, on one end of the human spectrum, the 1,226 individual women and men who comprise this year's 2012 Forbes List of Billionaires possessing, (*just between themselves*), a cumulative total of \$4.6 trillion dollars in *Personal Net Assets*, (for an average of \$3.7 billion dollars *each*),<sup>3</sup> and, on the other end of this spectrum, we have the approximately 5.5 billion people who live on \$10 US Dollars a day, or less, (and out of that figure there are more than half of those 5.5 billion people, a full 3 billion people alive in the year 2012 for whom that figure is \$2.50 dollars a day, or less),<sup>3</sup> this annual World GDP cash pile is in no way equitably divided between all the peoples of earth.

Hardly.

Not when the 1,000 wealthiest people on earth today have hoarded up just about double the amount liquid cash resources between just themselves alone, than the poorest half of the planet sees in income over the course of a year.

As an aside, coincidentally enough, the 2 to 1 ratio gap between us 1st World rich and our 3rd World poor is also expressed in those 2.3 billion people on earth today who have internet access, and those 4.7 billion people alive today who don't.<sup>4</sup>

It's practically a 1 to 1

### INTERNET USAGE STATISTICS The Internet Big Picture World Internet Users and Population Stats

WORLD INTERNET USAGE AND POPULATION STATISTICS December 31, 2011						
World Regions	Population (2011 Est.)	Internet Users Dec. 31, 2000	Internet Users Latest Data	Penetration (% Population)	Growth 2000-2011	Users % of Table
Africa	1,037,524,058	4,514,400	139,875,242	13.5 %	2,988.4 %	6.2 %
Asia	3,879,740,877	114,304,000	1,016,799,076	26.2 %	789.6 %	44.8 %
Europe	816,426,346	105,096,093	500,723,686	61.3 %	376.4 %	22.1 %
Middle East	216,258,843	3,284,800	77,020,995	35.6 %	2,244.8 %	3.4 %
North America	347,394,870	108,096,800	273,067,546	78.6 %	152.6 %	12.0 %
Latin America / Carib.	597,283,165	18,068,919	235,819,740	39.5 %	1,205.1 %	10.4 %
Oceania / Australia	35,426,995	7,620,480	23,927,457	67.5 %	214.0 %	1.1 %
<b>WORLD TOTAL</b>	<b>6,930,055,154</b>	<b>360,985,492</b>	<b>2,267,233,742</b>	<b>32.7 %</b>	<b>528.1 %</b>	<b>100.0 %</b>

NOTES: (1) Internet Usage and World Population Statistics are for December 31, 2011. (2) CLICK on each world region name for detailed regional usage information. (3) Demographic (Population) numbers are based on data from the [US Census Bureau](#) and local census agencies. (4) Internet usage information comes from data published by [Nielsen Online](#), by the [International Telecommunications Union](#), by [GfK](#), local Regulators and other reliable sources. (5) For definitions, disclaimers, and navigation help, please refer to the [Site Surfing Guide](#). (6) Information in this site may be cited, giving the due credit to [www.internetworldstats.com](#). Copyright © 2001 - 2012, Miniwatts Marketing Group. All rights reserved worldwide.

match:

By way of comparison to the global average of \$10K per person, in the USA today that Income Per Capita number is \$49 thousand dollars a year.

That's the overall 'Big Picture' in the most Macro of forms.

I am raising all this here at the outset of this Conclusions section as the baseline starting point so as to establish the ground in which needs to be set in discussing the feasibility, viability, and overall associated costs, in creating a universal global worldwide Unconditional Basic Income.

But before delving into this 'Big Picture' let's first cover what I left out in the preceding sections where I primarily discussed low wage and middle class job losses that will stem from workplace automation.

Now let's talk about what is going to happen to 6 figure income White Collar Professional work, (and the implications for the college level Higher Educational pipeline that provides the training for such work), because those two areas are not only just as vulnerable to being supplanted but the job losses, (and disruptions to that overall employment ecosystem), may be even more dramatic to those individuals and long-standing institutions who will be so affected.

This process has already begun.

From the New York Times:

*“When five television studios became entangled in a Justice Department antitrust lawsuit against CBS, the cost was immense. As part of the obscure task of “discovery” — providing documents relevant to a lawsuit — the studios examined six million documents at a cost of more than \$2.2 million, much of it to pay for a platoon of lawyers and paralegals who worked for months at high hourly rates.*

*But that was in 1978.*

*Now, thanks to advances in artificial intelligence, “e-discovery” software can analyze documents in a fraction of the time for a fraction of the cost.*

*In January, for example, Blackstone Discovery of Palo Alto, Calif., helped analyze 1.5 million documents for less than \$100,000.*

*Computers are getting better at mimicking human reasoning — as viewers of “Jeopardy!” found out when they saw Watson beat its human opponents — and they are claiming work once done by people in high-paying professions.*

*The number of computer chip designers, for example, has largely stagnated because powerful software programs replace the work once done by legions of logic designers and draftsmen.*

*Software is also making its way into tasks that were the exclusive province of human decision makers, like loan and mortgage officers and tax accountants.*

*“The economic impact will be huge,” said Tom Mitchell, chairman of the machine learning department at Carnegie Mellon University in Pittsburgh.*

*“We’re at the beginning of a 10-year period where we’re going to transition from computers that can’t understand language to a point where computers can understand quite a bit about language.”*

*Nowhere are these advances clearer than in the legal world.*

*Another e-discovery company in Silicon Valley, Clearwell, has developed software that analyzes documents to find concepts rather than specific keywords, shortening the time required to locate relevant material in litigation.*

*Last year, Clearwell software was used by the law firm DLA Piper to search through a half-million documents under a court-imposed deadline of one week. Clearwell’s software analyzed and sorted 570,000 documents (each document can be many pages) in two days.*

*The law firm used just one more day to identify 3,070 documents that were relevant to the court-ordered discovery motion.*

*Clearwell’s software uses language analysis and a visual way of representing general concepts found in documents to make it possible for a single lawyer to do work that might have once required hundreds.*

*Quantifying the employment impact of these new technologies is difficult.*

*Mike Lynch, the founder of Autonomy, is convinced that “legal is a sector that will likely employ fewer, not more, people in the U.S. in the future.”*

*He estimated that the shift from manual document discovery to e-discovery would lead to a manpower reduction in which one lawyer would suffice for work that once required 500 and that the newest generation of software, which can detect duplicates and find clusters of important documents on a particular topic, could cut the head count by another 50 percent.*

*The computers seem to be good at their new jobs.*

*Mr. Herr, the former chemical company lawyer, used e-discovery software to reanalyze work his company's lawyers did in the 1980s and '90s.*

*His human colleagues had been only 60 percent accurate, he found.*

*"Think about how much money had been spent to be slightly better than a coin toss," he said.*"<sup>5</sup>

Couple of thing to bear in mind, this article was written over a year and a half ago, and since then these systems have almost doubled their performance, and within 2 years from the time of this writing they will again be working twice as well over that. On that track these machines will have approximately 15 to 30 times the abilities detailed here.

The other consideration to make is that is just one small subset of all the similar work that is going on in this field; for example IBM has great plans in store for the following versions of its "Watson" machine mentioned in the above story.

And these plans of IBMs are dead centered on Watson doing the work of doctors, it's already doing diagnosis in American hospitals, business analysis, it's already on the job on Wall Street, and lawyers and paralegals, IBM has significant plans on its Drawing Board for Watson to doing the same kind of legal research which is described in the above New York Times article.

When it come to Legal Research this is how IBM's Chief Counsel sees Watson doing its work:

*"At IBM, we're just starting to explore about how Deep QA can be harnessed by lawyers. (We're pretty sure it would do quite well in a multistate bar exam!) But already it's becoming clear that this technology will be useful in a couple of ways:*

*For gathering facts and identifying ideas when building legal arguments. The technology might even come in handy, near real-time, in the courtroom. If a witness says something that doesn't seem credible, you can have an associate check it for accuracy on the spot."*<sup>6</sup>

All of this which, taken together has incredibly broad implications for any 18 year old American starting college in this year of 2012.

The mathematics of it tell the story:

If the average cost for a 4 year college degree at a private school in the United States is \$100K, along with the cost for a Graduate Degree from a Law, Business and Medical School being another additional \$150K above that figure, thus making the cost for Professional Degree \$250K by the year 2020; and the rule is that a newly graduated MBA, Doctor or Lawyer needs to set aside 10% of their Annual Income to pay off their Student Loans, then there is absolutely no way that an 18 year old who starts College in this year of 2012 who borrows \$25K a year to go to school for 8 years and who acquires either a Medical, Business or Legal Degree will be able to pay off their \$250K Student Loan by the year 2030.

Jobs that pay \$250K a year already do not exist in the United States for the vast majority of this year's Medical, Law and Business School graduates and it's certain that even less of those jobs will exist in the year 2020.

That's because by the year 2020 the Watson machine that IBM will be bringing to market will, (again, thanks to *Moore's Law*, have a level of data processing capability that will be in a range of being anywhere from 15-fold to 30-fold more powerful than last year's Prototype Model. And at the time today's 18 year old enters the Job Market of the 2020s there will be thousands upon thousands of these Watson machines in the market doing those 6 figure a year Professional White Collar jobs.

And they will be operating in 'the cloud,' (which means that they need not be physically present at any location, since it will possible to access Watson from any laptop or desktop computer), and networked with each other, making them even more powerful than a single stand alone unit.

There will simply be no way for even the brightest and most well educated person in the world to compete, (not on cost or ability), against such brute force computing power.

This is of a personal concern to me, not so much for myself, I'm about 15 years away from Retirement Age, but for my family. I have a nephew that turns 13 this year and begins High School, as well as his sister my now 2 year old niece. This nephew of mine is due to complete his undergraduate college studies by the year 2020, with my niece finishing High

School by the year 2028.

Even if the futurist Thomas Frey is half right and only one billion jobs worldwide are automated away by the year 2030, instead of the 2 billion jobs that Frey predicts will no longer exist by then, then that translates to there only being about 50 million jobs in the USA at the start of the 2030 decade; when both my nephew and niece will both be entering their Peak Years of their life to generate income.

Given the level of machine competition that they will face in that jobs environment I can't but help to think that they, and 10s upon 10s of millions of other Americans, will have nothing but the dimmest, dimmest and most direst of job prospects in that coming era.

The economy of the United States transitioned away from being a Manufacturing Economy to a Service Economy around 30 odd years ago and now today the US Economy is a +75% Service Economy.

As such at least one third, to half, of all available work to the 150 million person Labor Force in the USA today is susceptible and vulnerable to displacement by the phenomena of Technological Unemployment.

That is with the coming advent of automation in the workplace, we are now looking down the barrel at the very near term prospect, (in just the United States alone), of anywhere from 50 million people, conceivably to up to 75 million people, who will have absolutely no means available left to them to provide for themselves, or their families.

At this point, in order to avert a human catastrophe on a scale never seen before in the US, not even during the deepest depths of our Great Depression of the 1930s, Unconditional Basic Income seems like a much better alternative.

Which begs the question:

Just how much is it going to cost?

Surprisingly, very little, actually.

To get it started, the first phase of it can be done for as little as ¢5 cents to ¢7 cents a year.

On the top end, taking the Reverend Martin Luther King's Proposal and providing every single one of the 220 million Americans adult citizens over the age of in the USA today with a Basic Income pegged the current National Median Income of \$52 thousand dollars a year<sup>x</sup> the price tag for this will cost just just \$11.5 trillion dollars a year.

Or nearly 75% of the US's annual \$15 trillion dollar GDP.

Halving that by taking Marshall Brain's Proposal and providing every single one of the 220 million American adults in the USA today with a \$25 thousand dollar a year Unconditional Basic Income that would cost just over \$5.5 trillion dollars a year.

Which is well over one third of the US's current GDP of \$15 trillion dollars a year.

And both those sets of numbers are inherently too high, so it needs to be parsed back a bit into something more realistic and feasible.

But what, what is the right dollar amount, and who is it best and most fair to give it to?

One set of answers comes from the most unlikely of sources.

President Richard Milhouse Nixon's FAP Proposal from the 8th of August, 1969.

Where Nixon proposed his Family Assistance Plan which would have unconditionally provided every American Family of 4 a \$1,600 a year cash grant and \$800 dollars a year in Food Stamps.

\$2,400 US Dollars in the year 2012 is the equivalent of \$15,000 a year.

Which is also essentially the equivalent of the average Social Security Retirement Benefit that American Pensioner get as of the year 2012,

That seems to be the 'sweet spot' number in order to make this affordable and make it work.

In my whole life I never thought I would ever be typing this following sentence, but if you'll allow me to interject a little levity into this piece I just have to say this....



**NIXON'S THE ONE!**

**NIXON'S THE ONE**

That is, at least when it comes to establishing an Unconditional Basic Income in the USA today.

I think that Nixon had it exactly right with his approach and, in terms of selling it to the General Public, Nixon's idea of starting with families with children is absolutely the right place to start.

For starter, at a cost of €2 cents a year for all children under the age of 18, and all of €5 cents a year for their parents, the price is right.

The numbers work out like this:

Throughout the entirety of the First World, parents of children under the age of 18 are approximately 15% of population and children under the age of 18 are 25% of the population.

This is just as true in Germany as it is in the United States as it throughout the EU.

For the purposes of illustration I will start by outlining how a modification of Nixon's '69 FAP Plan would work in the United States and then using those figures demonstrate how it can be applied to Germany and then the EU.

One of the reasons cited by Daniel Moynihan for the failure of Nixon's '69 FAP Plan was that it just wasn't enough money to start with; "...it wasn't much of an income: \$1,600 for a family of four plus \$800 in food stamps," so instead of giving an annual benefit of \$15K to each household of 4, extend that \$15K a year benefit, (which again is the average annual benefit that American Social Security Retirees currently receive each year), to EACH American parent, (BOTH the mother and father), with a child under the age of 18.

In the USA today there are approximately 47 million such eligible parents, and to give them each a monthly benefit of \$1,234 a month will cost \$700 billion dollars a year.

\$700 billion dollars works out to 5% of the US's current Gross Domestic Product, or ¢5 cents of every dollar in the US economy.

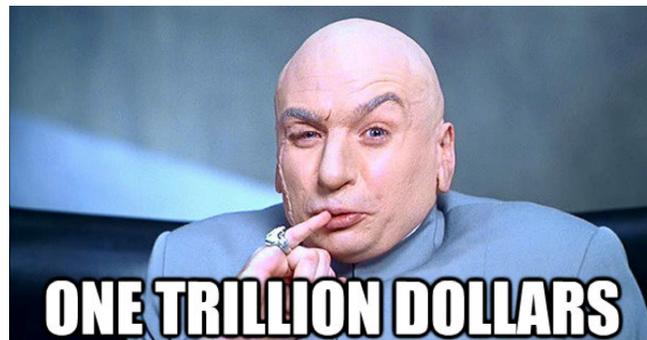
But what about the children?

There are currently approximately 75 million children under the age of 18, (they are roughly just under 25% of the overall United States population), and currently there is no equivalent national 'Child Benefit/ Kindergeld' program of any sort in the USA as there is in Germany.

But what if there were?

Adding a \$300 dollar a month Child Benefit to to equation for each of these American children under the age of 18 will cost just under \$300 billion dollars a year, roughly 2% of annual American GDP, or in simpler terms, ¢2 cents out of every dollar.

Adding together this nickel a year for America's parents, and ¢2 cents a year for all of their children under the age of 18, it is possible, and feasible to cover a full 40% of the entire United States population with an Unconditional Basic Income for the low annual cost of...



Here in Germany, where an established Kindergeld program already exists it is not therefore not necessary to make the case for it.

So in the interests of brevity, a quick thumbnail back of the envelop calculation to show how extending an Unconditional Basic Income to the 12 million German parents would work just as well; for the nearly the same percentage of annual German GDP in the DE as it does in the US.

The Annual GDP of Germany today is €2.4 trillion EU, a €1K a month payment to each of the 12 million German parents will cost €144 billion EU a year, or 6% of annual German GDP.

This number also breaks down to be the same for the whole of the European Union, using the same set of figures.

The annual GDP of the EU is €14 trillion a year, and there are approximately 75 million parents with children under 18 that meet this Eligibility Requirement.

Extending a €1K a month Unconditional Basic Income to them all will cost €900 billion EU a year, which is 6.5% of the EU's annual GDP.

So that is the range across the board, roughly 5% to 6.5% of GDP, whether it is the US, the DE, or the EU.

Joseph Stiglitz has repeatedly been asking the question as to how to make the 1% see that it is in their best interest to give up a little something

# Citations, Notes, And Addenda

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## Inside Cover Illustrations

Union Dues Paying Robots  
Images acquired from Google News Archive Search

Left Image from the  
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## Video

### **FAIR USE NOTICE:**

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## Additional Reading

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### **Japan's robots may pay union dues . . . but will they attend meetings?**

By [Geoffrey Murray](#), Special correspondent of The Christian Science Monitor / December 14, 1982

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By Geoffrey Murray

Special correspondent of The Christian Science Monitor

December 14, 1982 Tokyo

If robots are to replace humans on factory assembly lines, shouldn't they be union members?

One Japanese union thought so and the company management agreed. But they immediately ran into a government ruling that "only humans can belong to a labor union."

The idea cropped up when the Fujitsu Fanuc Company established its much-publicized automated robotmaking factory at the foot of Mount Fuji two years ago.

No worker layoffs were planned, so union leaders assured the management they would not oppose automation - which comes into its own on the night shift when not a single

human is on the premises. As a result, there are some 200 sophisticated robots virtually recreating themselves around the clock.

After their initial acquiescence, however, union leaders began to do some basic arithmetic. They were shocked when the company announced plans to build more unmanned factories.

With the human work force remaining static while productivity has increased rapidly, Fujitsu Fanuc's sales have increased sixfold in the past two years, generating huge profits.

By comparison, however, the company union's finances have gone from bad to worse.

Members pay roughly 1 percent of their net monthly income, without overtime (in some companies it is as high as 1.5 percent) which for an average worker in his 30s would mean a contribution of about \$18 to \$20.

From this money, the union's full-time officials draw their salaries, pay all operating expenses, and make contributions to national union federations.

Union chairman Takatozu Suzuki commented: "We only have about 700 members now, and there seems little chance this number will increase. In fact, with normal wastage the human work force could shrink until very soon we are outnumbered by robots.

"When the management established this unmanned factory, we were not opposed because we could see the rationale of automation. But union finances were in deep trouble, and management readily agreed that the company would pay union fees for Japan's robots may pay union dues . . . but will they attend meetings? / The Christian Science Monitor ... [www.csmonitor.com/1982/1214/121431.html](http://www.csmonitor.com/1982/1214/121431.html) 2/2 every robot to help us survive."

But no money has been paid because of government opposition.

"Robots are not considered human," declared a senior official of the Ministry of Labor. "If fees are paid into union funds on behalf of robots, that would be defined as financial assistance from the management, which is illegal in order to preserve union independence."

Union chairman Suzuki is determined to lobby the Diet (parliament) for a change in the law, especially as more and more small company unions are likely to face the same problem with growing automation.

"One robot should be made equal to at least one human worker as far as union membership is concerned," he said. "In fact, as management always maintains that one robot can do the work of five men, it should pay union dues five times larger. . .

Then we can get out of our financial difficulties."

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<http://bit.ly/TUPbien14Labrets>