LAWYERS AND SELF-DRIVING CARS: AN EXAMPLE OF JOB LOSS FROM AI/ROBOTICS

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To try to demonstrate the employment effects of AI/robotics technology I am going to offer an example of a technological development--self-driving cars and other vehicles--that has seemingly “come out of left field” only during the past year or so but that will eliminate millions of jobs across a large and diverse spectrum. As I lay out below the job loss will affect lawyers, doctors and other medical personnel, therapists, pharmaceutical and insurance workers and much more.

In outlining some of the employment consequences resulting from a shift to self-driving safer cars and other vehicles I want to mention lawyers because lawyers are easy targets. No one likes lawyers unless and until they are in need of legal representation. I’m a lawyer and law professor and I don’t even like lawyers all that much because they are always contentious or talking about bad things. The real reason for bringing lawyers up at this point in the discussion, however, is that it seems like many people teaching in law schools are still suffering under the delusion that the legal job market—and therefore the demand for a continuing stream of new law school graduates—is going to rebound and “happy days” will be here again. That’s not going to happen for a variety of reasons, one of which will be the shift over a relatively brief period to self-driving motor vehicles.

The employment impact resulting from Artificial Intelligence and robotics systems is not simply because they are or will be capable of doing the same job as well or better and at a lower cost than the human workers they displace. Job elimination will also take place due to the removal of the underlying “environment” on which the human workers currently employ their labor. This is what I see as occurring as an inevitable result of the shift to self driving cars, trucks and other vehicles, assuming the claims to the vastly enhanced accident avoidance and safety features of such vehicles are even close to accurate.

It is pretty amazing how stealthily self-driving cars, semi-trucks and buses have popped out of nowhere (after billions of dollars in investment) to be touted as the automobile and transport option of the future, and not the distant future but 2020 or so. The research is found in a wide variety of automobile companies. In an October 2016 report Business Insider indicates that “19 companies racing to put self-driving cars on the road by 2021”.¹ The 19 companies include: Ford, GM, Toyota, Nissan, Honda, Hyundai, Audi, Tesla, Daimler Benz (trucks), Volvo, Audi, BMW, Rolls Royce, Google, Baidu (China), LeEco (China), Uber, Lyft, and PSA Groupe (Europe). Volvo claims it will have “deathproof” self-driving cars by 2020. Uber has developed a partnership with Ford and Volvo and Lyft is working with GM.

The self-driving cars are not confined to the companies’ drawing boards. We already have driverless taxis in Singapore, automated commuter buses in Finland, self-driving cars being tested in Pittsburgh, Michigan and San Francisco. Think about how stunning that fact actually is and how fast the systems are developing. Then consider how many jobs these developments will potentially eliminate along with the types of employment affected.

As with Volvo’s “deathproof” pledge, accident avoidance is a key consideration. Among the reasons being offered for the development of self-driving cars is that once perfected, and with the automotive, public transportation and trucking fleets converted to such autonomous vehicles, accidents will be eliminated and tens of thousands of lives saved along with millions of people not incurring serious debilitating injury. This is not a “one off” event but an every year avoidance of a massive number of injuries, damage and death. Some estimates indicate as much as 90 percent of vehicular accidents would be avoided once the transition to a fully self-driving vehicular fleet is achieved. This elimination of death, injury and property damage as well as lost time from work or family is clearly a desirable goal but it is one that also carries with it significant job destruction across a surprisingly wide and diverse zone of employment activity.

Think about the employment and job destruction implications of such things as the driverless cars that are already running tourists around London, or the robot couriers that are delivering messages, pizzas, fast food, packages and materials. A new start-up company even wants to put self-driving semi-trucks on the roads. Its stated goal: “For now, the robot truckers would only take control on the highways, leaving humans to handle the tougher task of wending through city streets. The idea is similar to the automated pilots that fly jets at high altitudes while leaving the takeoffs and landings to humans.” But note that “for now” a human driver would provide operational skills in denser and more intricate urban driving. As a cost saving strategy this only makes sense if the intent is akin to a harbor master pilot operation in which the human driver completes the trip after the automated system does the long distance hauling work.

An Admittedly “Inhumane” Analysis

In teaching law school courses on Toxic Torts and Environmental Law I would typically have students perform an analysis based on the economic effects of eliminating smoking from our society, examining the consequences resulting from eliminating health issues related to smoking. Part of the analysis asked what the effects would be for the medical industry if people no longer smoked cigarettes and stopped experiencing things such as lung cancer and heart disease caused by long term smoking. The results were always startling because we tend to avoid thinking about how much of our economic activity is based on dealing with “bad things” that could be avoided if we opted to do so. Cigarettes,

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3 http://bigstory.ap.org/article/81b31f2909c943b1a824a3ecb80fa40d/startup-wants-put-self-driving-big-rigs-us-highways.
alcohol and drug abuse, poor health habits and negligent and reckless driving head the list of things that could be avoided if we cared enough, but we don’t. They are also behaviors that stimulate a significant portion of the American economy.

I know it is a terrible thing to ask but for one moment let’s try not to think about the positive effects of eliminating a single sector of the stupid driving behavior that consistently leads to death, addiction, injury and other serious damage. The almost total elimination of motor vehicle accidents as a benefit of self-driving AI/robotic vehicles that eliminate the “human factor” from the equation of operating a motor vehicle offers only one example. What I am doing here is suggesting we should consider the effects of such a fundamental development on the parts of our economic system that depend on a regular flow of the injuries, damages, lost opportunities and deaths that are generated by motor vehicle accidents.

The economic system that depends on human driving error is a surprisingly complex system. To gain a sense of the scale of job loss to workers that depend on the existing system it is useful to look at the size of the problem. Vehicular accidents kill thousands of people every year and injure millions of accident victims, many of whom then suffer from the injuries and permanent disabilities. Aside from bodily injuries and death are the extensive financial damages suffered by the people involved in the accident. This includes damage to vehicles and property and loss of income from being unable to work.

In 2015 the U.S. had the highest one-year percentage increase in traffic deaths in fifty years, according to 2015 data provided by the National Safety Council (NSC). Initial estimates indicate 38,300 people were killed on U.S. roads in 2015. Approximately 4.4 million other victims suffered injuries that required medical attention. US data from 2014 and 2015 provide a sense of the potential job loss just in the transportation sector. A recent news story put the possible direct job loss from automated vehicles at 4.1 million in the US alone. The Bureau of Labor Statistics (BLS) reports that there were 826,510 light truck and delivery drivers actively employed with a mean annual wage of $34,080. The BLS reports 1,797,700 Heavy and Tractor Trailer drivers in the US in 2014 with an average wage of $40,260. There were 665,000 school bus drivers earning an average of $30,950. 233,700 taxi drivers and chauffeurs averaging $23,510 annually. Many, if not most of those jobs are likely to be lost to self-driving vehicles.

In the “Gig” economy in which people pull together a mosaic of patched together jobs because that is increasingly what is available it has been reported that Uber has 400,000 “active drivers” in the US and Lyft another 315,000 drivers. As indicated above, Uber and Lyft have developed partnerships with Ford, Volvo and GM to develop fleets of self-driving cars. In the very near future, human drivers in Uber and Lyft cars may only be a memory. Although the above figures represent a mixture of full and part-time driving jobs they

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4 http://www.nsc.org/Connect/NSCNewsReleases/Lists/Posts/Post.aspx?List=1f2e4535-5dc3-45d6-b190-9b49c7229931&Id=103&var=hppress&Web=36d1832e-7bc3-4029-98a1-317c5cd5c625. Motor Vehicle Deaths Increase by Largest Percent in Fifty Years, 2/17/16.
indicate there are at least 4,236,910 people employed in the US as compensated drivers in some form. Given the heavy investment that is being made in self-driving cars, taxis, buses, trucks, delivery “bots” and semi-trailers, in five to ten years a very significant number of the professional and compensated driving jobs in which people are paid for that work will disappear.

The jobs that will be eliminated by autonomous self-driving vehicles are not restricted to the most obvious “victims” such as drivers of trucks, taxis, Uber or Lyft, personal autos, school buses or delivery vehicles. If the claims of self-driving advocates and the car companies are to be believed such vehicles will be operated much more safely because the “human element” involving carelessness, inattention, alcohol and drug abuse, anger and impatience etc. will be eliminated from the driving equation.

Safer driving automated vehicles means far fewer accidents. Far fewer accidents means reductions in medical employment due to fewer injuries, reduced damage claims activities for health and collision insurance companies, and a reduction in lawsuits for damages arising from motor vehicle collisions. All these involve employment areas that will require a dramatically reduced number of people if 90 percent of vehicular accidents are prevented as has been estimated. As morbid as it might seem to look at the situation through such a lens I am simply trying to show that there are consequences that flow from all actions and even positive developments impose costs. Of course we want to reduce or eliminate injuries, deaths and damage but analyzing the effects that will have on employment is something about which we must remain aware.

A Sampling of Possible Job Loss

Self-driving vehicles—if the claims to their safety benefits are to be believed—will destroy millions of jobs beyond the obvious 4.1 million estimated jobs involved in professional driving and transport. The classic “ambulance chasing” personal injury lawyer will be a thing of the past because with no accidents there are no ambulances to pursue. Without 4.4 million injuries to treat each year with their medical expenses paid by insurance companies, the demand for doctors, nurses, hospital services and rooms will plummet. Without debilitating and painful injuries pharmaceutical companies will see a precipitate decline in sales of expensive painkiller drugs, drug treatment needs for addiction will decline dramatically, insurance company premiums will plummet because there will no longer be five million accidents to deal with every year. Insurance company staffing will be reduced significantly and many independent insurance agents will be out of a job.

Think about what 38,000 deaths and 4.4 million injuries occurring annually mean to a wide variety of economic activities. Over only five years that means almost 200,000 deaths and over twenty million injuries—many of them serious and some resulting in premature death because bodies have been weakened. Those who will suffer from the elimination of vehicular accidents due to the shift from human operated vehicles to AI/robotic driving systems include: personal injury lawyers, specialist lawyers in insurance defense, litigation support companies and consultants, expert witnesses and claims investigators, doctors, nurses, emergency room staff, hospitals, physical and emotional therapists and counselors,
medical equipment suppliers, pharmaceutical companies, mortuaries, mechanics and body shops, new and used car sales, tow truck operators, casualty insurance companies, ambulance drivers, emergency medical technicians, and much more.

Without collisions there will be no need for repair or replacement services. This means that mechanics will be out of work, body shops won't have anything to work on, insurance investigators and adjustors won't be needed at any level close to the present demand, and tow truck companies won't have much to do. Morbidly, if 38,000 people do not die every year from vehicle collisions, then mortuaries lose a great deal of business, florists and coffin manufacturers lose out on one of their most lucrative markets. At an average of $5,000 per funeral service that means mortuaries would see $190 million in revenue disappear from their books. I am not trying to be absurd but this could cost greeting card companies and florists tens of millions in revenues. Death and injury from vehicle accidents is big business. All-in-all the development of self-driving vehicles promises to be a disaster from the perspective of the destruction of employment in a wide range of economic activities.

"First, Let’s Kill All the Lawyers"

After waiting centuries Shakespeare’s “Dick the Butcher” may finally get at least part of his wish voiced in Henry VI regarding elimination of lawyers. Let’s try to gain a sense of how our economic and employment dilemma gets worse as cars and trucks get better and are operated far more safely. Although it is not entirely precise, estimates indicate that as of 2015 there were 93,000 personal injury lawyers in the United States. This is likely understated in the sense that the 93,000 PI lawyers are not the total number of lawyers who handle the universe of cases involving death and personal injury or that benefit from the existence of such disputes. While the 93,000 lawyers mentioned above specialize in personal injury cases, even if it is not their full time activity many other lawyers occasionally represent clients with injury claims. There are also numerous lawyers on retainers who are paid by insurance companies to provide representation for the insurer or the insured in addition to large numbers of insurance claims adjusters who typically try to settle a claim early if possible. This doesn’t begin to include the probate and estate lawyers who will lose out on tens of thousands of lucrative cases each year or tax lawyers and CPAs. We are obviously looking at a very important source of revenue for all these categories at a time when many lawyers are already under financial pressure and seeing their earnings declining.

Even if we just considered the 93,000 personal injury specialists who represent injured accident victims or the estates of those killed in vehicle accidents, the “economic engine” we are talking about provides the resources those lawyers need to employ large numbers of support staff, paralegals and investigators whose livelihoods depend on the continued welfare of the PI lawyers. Even the defense lawyers paid by insurance companies to go up against liability lawyers need the PI plaintiffs’ bar in order to keep the disputes going and revenues flowing. Those defense lawyers also have staff that must be paid as well as cadres

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5 I know the quote is often misused and that Dick really meant to do away with ethical lawyers committed to the Rule of Law and stability but it just “feels” good.
of experts who provide reports and testimony in the cases if they aren’t settled early. This doesn’t even begin to count the court reporting and staffing personnel who handle the schedules, official sessions and procedures required for the litigation associated with the vehicular injury and death cases.

Taken together we are talking about well up into the hundreds of thousands of people and perhaps considerably over a million individuals whose jobs depend either completely or in some significant way on continuation of the disputes and litigation involved in resolving motor vehicle accident cases or the estate, tax and probate matters resulting from the unfortunate demise of almost 40,000 people each year. Who would have figured something claimed to be so good such as much safer “deathproof” self-driving vehicles could have a destructive dimension to it that could cost so many people their jobs? But I am not offering this example as a statement that we should not seek to avoid needless death and injury to keep a segment of a complex industry going. Instead we need to be aware that such impacts on employment are coming our way and will continue to emerge from surprising developments. Realistic strategies for adapting to the changes are required and the first step in doing this is to understand what the problems are that we need to deal with.

The problem with what is occurring is that as I try to explain in a subsequent chapter discussing Joseph Schumpeter’s concept of “creative destruction” within economic systems, unlike his conclusion that new forms of work will be created to replace those that are being destroyed, with AI/robotics we are entering an entirely different kind of economic and political milieu. There is a strong likelihood that the job replacement the lawyers and others who lose their employment because the underlying source that produced the sustaining revenues has withered or disappeared does not occur and, as with other effects of AI/robotics systems a very large proportion of our population is chronically and permanently unemployed with significant harms to our society.