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Ruxandra Pavelchievici

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Technological Progress and Responsibility in the United States

Ruxandra Pavelchievici

Université Côte d'Azur

Document A

Andrew Carnegie, *The Gospel of Wealth*, 1889. New York: Carnegie Corporation of New York, 2017 [1889], p. 3-6.

5 The price which society pays for the law of competition, like
the price it pays for cheap comforts and luxuries, is also great; but the
advantages of this law are also greater still, for it is to this law that we
owe our wonderful material development, which brings improved
10 conditions in its train. But, whether the law be benign or not, we must
say of it, as we say of the change in the conditions of men to which
we have referred: It is here; we cannot evade it; no substitutes for it
have been found; and while the law may be sometimes hard for the
individual, it is best for the race, because it insures the survival of the
15 fittest in every department. We accept and welcome therefore, as
conditions to which we must accommodate ourselves, great inequality
of environment, the concentration of business, industrial and
commercial, in the hands of a few, and the law of competition between
these, as being not only beneficial, but essential for the future progress
20 of the race. Having accepted these, it follows that there must be great
scope for the exercise of special ability in the merchant and in the
manufacturer who has to conduct affairs upon a great scale. That this
talent for organization and management is rare among men is proved
by the fact that it invariably secures for its possessor enormous
25 rewards, no matter where or under what laws or conditions. The
experienced in affairs always rate the MAN whose services can be
obtained as a partner as not only the first consideration, but such as to
render the question of his capital scarcely worth considering, for such
men soon create capital; while, without the special talent required,
capital soon takes wings. Such men become interested in firms or

corporations using millions; and estimating only simple interest to be made upon the capital invested, it is inevitable that their income must exceed their expenditures, and that they must accumulate wealth. Nor is there any middle ground which such men can occupy, because the
30 great manufacturing or commercial concern which does not earn at least interest upon its capital soon becomes bankrupt. It must either go forward or fall behind: to stand still is impossible. It is a condition essential for its successful operation that it should be thus far profitable, and even that, in addition to interest on capital, it should
35 make profit. It is a law, as certain as any of the others named, that men possessed of this peculiar talent for affair, under the free play of economic forces, must, of necessity, soon be in receipt of more revenue than can be judiciously expended upon themselves; and this law is as beneficial for the race as the others.

40 Objections to the foundations upon which society is based are not in order, because the condition of the race is better with these than it has been with any others which have been tried. Of the effect of any new substitutes proposed we cannot be sure. The Socialist or Anarchist who seeks to overturn present conditions is to be regarded
45 as attacking the foundation upon which civilization itself rests, for civilization took its start from the day that the capable, industrious workman said to his incompetent and lazy fellow, "If thou dost not sow, thou shalt not reap," and thus ended primitive Communism by separating the drones from the bees. One who studies this subject will soon be brought face to face with the conclusion that upon the sacredness of property civilization itself depends--the right of the laborer to his hundred dollars in the savings bank, and equally the legal right of the millionaire to his millions. To those who propose to substitute Communism for this intense Individualism the answer,
50 therefore, is: The race has tried that. All progress from that barbarous day to the present time has resulted from its displacement. Not evil, but good, has come to the race from the accumulation of wealth by those who have the ability and energy that produce it. But even if we admit for a moment that it might be better for the race to discard its
55 present foundation, Individualism,—that it is a nobler ideal that man should labor, not for himself alone, but in and for a brotherhood of his fellows, and share with them all in common, realizing Swedenborg's idea of Heaven, where, as he says, the angels derive their happiness, not from laboring for self, but for each other,—even admit all this,
60 and a sufficient answer is, This is not evolution, but revolution. It
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necessitates the changing of human nature itself a work of eons, even if it were good to change it, which we cannot know.

70 It is not practicable in our day or in our age. Even if desirable
theoretically, it belongs to another and long-succeeding sociological
stratum. Our duty is with what is practicable now; with the next step
possible in our day and generation. It is criminal to waste our energies
in endeavoring to uproot, when all we can profitably or possibly
75 accomplish is to bend the universal tree of humanity a little in the
direction most favorable to the production of good fruit under existing
circumstances. We might as well urge the destruction of the highest
existing type of man because he failed to reach our ideal as favor the
destruction of Individualism, Private Property, the Law of
Accumulation of Wealth, and the Law of Competition; for these are
80 the highest results of human experience, the soil in which society so
far has produced the best fruit. Unequally or unjustly, perhaps, as
these laws sometimes operate, and imperfect as they appear to the
Idealist, they are, nevertheless, like the highest type of man, the best
and most valuable of all that humanity has yet accomplished.

Document B

Ad Hoc Committee on the Triple Revolution, publication entitled "The Triple Revolution" in *National Commission on Technology and Automation, and Economic Progress: Hearings Before the Select Subcommittee on Labor, of the Committee on Education and Labor, House of Representatives, Eighty-eighth Congress, Second Session, on H.R. 10310, and Related Bills to Establish a National Commission on Automation and Technological Progress*. Hearings held in Washington, D.C., April 14,15, and 27, 1964. US Government Printing Office, p. 128-9.

[...] HOW THE CYBERNATION REVOLUTION SHAPES UP

5 Cybernation is manifesting the characteristics of a revolution in
production. These include the development of radically different
techniques and the subsequent appearance of novel principles of the
organization of production; a basic reordering of man's relationship to
his environment; and a dramatic increase in total available and
potential energy.

10 The major difference between the agricultural, industrial and
cybernation revolutions is the speed at which they developed. The
agricultural revolution began several thousand years ago in the
Middle East. Centuries passed in the shift from a subsistence base of
hunting and food-gathering to settled agriculture.

15 In contrast, it has been less than 200 years since the emergence
of the industrial revolution, and direct and accurate knowledge of the
new productive techniques has reached most of mankind. This swift
dissemination of information is generally held to be the main factor
leading to widespread industrialization.

20 While the major aspects of the cybernation revolution are for
the moment restricted to the U.S., its effects are observable almost at
once throughout the industrial world and large parts of the non-
industrial world. Observation is rapidly followed by analysis and
criticism. The problems posed by the cybernation revolution are part
of a new era in the history of all mankind but they are first being faced
25 by the people of the U.S. The way Americans cope with cybernation
will influence the course of this phenomenon everywhere. This
country is the stage on which the machines-and-man drama will first
be played for the world to witness.

30 The fundamental problem posed by the cybernation revolution
in the U.S. is that it invalidates the general mechanism so far
employed to undergird people's rights as consumers. Up to this time
economic resources have been distributed on the basis of
contributions to production, with machines and men competing for
employment on somewhat equal terms. In the developing cybernated
35 system, potentially unlimited output can be achieved by systems of
machines which will require little cooperation from human beings. As
machines take over production from men, they absorb an increasing
proportion of resources while the men who are displaced become
dependent on minimal and unrelated government measures—
unemployment insurance, social security, welfare payments. These
40 measures are less and less able to disguise a historic paradox: That a
substantial proportion of the population is subsisting on minimal
incomes, often below the poverty line, at a time when sufficient
productive potential is available to supply the needs of everyone in
the U.S.

45 The existence of this paradox is denied or ignored by
conventional economic analysis. The general economic approach
argues that potential demand, which if filled would raise the number

of jobs and provide incomes to those holding them, is underestimated. Most contemporary economic analysis states that all of the available labor force and industrial capacity is required to meet the needs of consumers and industry and to provide adequate public services: Schools, parks, roads, homes, decent cities, and clean water and air. It is further argued that demand could be increased, by a variety of standard techniques, to any desired extent by providing money and machines to improve the conditions of the billions of impoverished people elsewhere in the world, who need food and shelter, clothes and machinery and everything else the industrial nations take for granted.

There is no question that cybernation does increase the potential for the provision of funds to neglected public sectors. Nor is there any question that cybernation would make possible the abolition of poverty at home and abroad. But the industrial system does not possess any adequate mechanisms to permit these potentials to become realities. The industrial system was designed to produce an ever-increasing quantity of goods as efficiently as possible, and it was assumed that the distribution of the power to purchase these goods would occur almost automatically. The continuance of the income-through jobs link as the only major mechanism for distributing effective demand—for granting the right to consume—now acts as the main brake on the almost unlimited capacity of a cybernated productive system.

Recent administrations have proposed measures aimed at achieving a better distribution of resources, and at reducing unemployment and underemployment. A few of these proposals have been enacted. More often they have failed to secure congressional support. In every case, many members of Congress have criticized the proposed measures as departing from traditional principles for the allocation of resources and the encouragement of production. Abetted by budget-balancing economists and interest groups they have argued for the maintenance of an economic machine based on ideas of scarcity to deal with the facts of abundance produced by cybernation. This time-consuming criticism has slowed the workings of Congress and has thrown out of focus for that body the inter-related effects of the triple revolution.

An adequate distribution of the potential abundance of goods and services will be achieved only when it is understood that the major economic problem is not how to increase production but how to distribute the abundance that is the great potential of cybernation.

There is an urgent need for a fundamental change in the mechanisms employed to insure consumer rights.

Document C

Ryan Avent [senior journalist with *The Economist*], *The Wealth of Humans: Work and its absence in the twenty-first century*. St Martin's Press, 2016, p. 27-29.

5 The social battles of the industrial revolution era mostly focused on the proper role of the state. People organized and fought for a new social order; great new cities and factories arose; and crusading reformers and opportunistic politicians built new institutions in an attempt to round off the sharp edges of the brutal new industrial life. After a long and fitful social negotiation, most rich countries arrived at a social democratic model, in which the state to one degree or another helps to provide education, infrastructure, healthcare and social insurance to the old, poor and unemployed. The state also regulates industries and sets standards, and it enacts laws laying out how firms can and cannot treat their workers. The digital revolution will reopen these discussions, but it will also force a new argument into the light that will define the generation to come: who belongs? Societies will face the need to define the community of people entitled to share in the common, social wealth made possible by marvelous new technologies. They will face choices, about which characteristics are grounds for inclusion, and what insiders must do to earn and keep their place. This fight will be an especially difficult one because the nature of social redistribution must change. The industrial revolution was an all-hands-on-deck effort; there were roles for even the least skilled of workers: from cleaning horse manure off bustling city streets to moving parts around a massive factory. The social contract built during this age was one that protected the safety of workers, which made sure they were paid fairly for the critical work they did, which insured them against unexpected hardship, and which helped workers provide for themselves when they were too old or too young to contribute. But the promise of the digital revolution is an end to work. The logical endpoint is an economy in which clever software and dexterous machines and abundant energy mean that human work is unnecessary. We are generations away from realizing that promise,

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just as societies in the early nineteenth century were generations away from achieving the mass industrial prosperity of the postwar decades. But the battle to create the institutions that will eventually support mass digital prosperity has begun. Creating mass digital prosperity is not about building institutions which ensure that all workers benefit from economic growth; it is about building institutions which provide for people who do not work because their work is not necessary to generate economic growth. It's hard to contemplate how such institutions might work and prove sustainable. It's hard to imagine society deciding to provide rich lives for able bodied adults, not because of anything they have done but because a rich livelihood is their right. But we are not entirely without models for this sort of institution. One place to begin thinking through the problem is the family. Consider mine. I grew up in a comfortable suburban house on the outskirts of Raleigh, North Carolina. As with all suburban houses in that part of the country, there was plenty of grass to mow in the summer and leaves to rake in the fall, and on Saturdays, between the morning cartoons and the afternoon goofing off, my three brothers and I were expected to handle basic landscaping chores. These chores never took longer than two hours, and would have taken considerably less if we'd worked as hard as we moaned. We got an allowance for our trouble, but we hated the work all the same. My father, easily the most assiduous worker I have ever met, rarely bothered to hide his frustration with our complaining and lack of work ethic. He had grown up on a farm in southern Virginia, doing the kind of work we kids had never known and will never understand: hard, manual work that needed to be done to keep the family eating: picking cotton, cutting tobacco, digging peanuts. In hindsight, he handled our apocalyptic moaning about being asked to put a few acorns in a bucket with more grace and aplomb than we deserved. Dad could have hired someone to mow the lawn, and his refusal to do so wasn't just a matter of money. Tending the lawn was about the lessons he needed us to learn: that while we would have plenty of time to play, our Saturday could not be entirely without structure. That while our parents might provide us with everything we needed, we should not take their generosity for granted, or conclude that it was right to enjoy such things without some effort to contribute to the family. Picking up acorns wasn't a matter of material necessity; we were fortunate in that our childhood labour never was. Instead it was an investment in the mutual goodwill that helps keep any society,

including a family, functioning smoothly. It has proven a valuable lesson.

Commentary

The impact of technological innovation goes far beyond scientific issues: its ethical dimension has long been considered in relation to medicine, genetics or biology, and “best practice” now involves an increasing concern for responsibility and accountability in these matters. However, to the extent that technological innovation sets the pace of industrial revolutions, and therefore entails major socio-economic transformations, the question of responsibility also arises, as has now been widely documented by social scientists, with regard to its influence over living standards, job destruction and rising inequality. The promise of a world in which production is higher, faster and more efficient may indeed be questioned if its counterpart involves the growing fragility of some categories. From the Industrial Revolution to the growing role of computers and automation, culmination in the contemporary digital revolution, the US has set itself as a flagship of innovation, strongly supported by the federal government, with the aim of working towards a dynamic economy that was to guarantee the ongoing improvement of living standards and inscribed the value of rewarded hard work as one of its foundations. This set of documents exemplifies how successive revolutions in the mode of production, supported by technological progress, have shaped the United States economy and society: from the industrial revolution to the “cyber” revolution, economic and social conditions evolved, as well as ideological positions related to them, from idealization to growing skepticism, from the belief that the United States had reached an ideal state to a vigorous call for reevaluation of the benefits of technology and, finally, to open criticism of technological progress as putting an end to human work.

Document A emanates from an essay by Andrew Carnegie, owner of Carnegie Steel, an archetypal American self-made man active during the Gilded Age, who exemplifies the paradoxical figure of the “robber barons”, business men who built empires made of large companies, notably thanks to technological innovation and new modes of management, and contributed to the dynamics of rising

capitalism but reached their goals by distorting competition and other types of dishonest practice. This led to reactions, notably the passing of the Sherman Anti-trust Act in 1890. The period was one in which progress induced by the Industrial Revolution led to a booming economy, with changing structures and the ambiguous development of philanthropy. Originally titled simply “Wealth” and published in the *North American Review* in June 1889, Andrew Carnegie’s essay *The Gospel of Wealth* is considered a foundational document in the field of philanthropy. In this excerpt, he lays out the foundations of modern society and its guiding principles: individualism, private property, the law of competition and the law of accumulation, presented as ultimate phase of progress for human race.

Document B is an excerpt from the memorandum written by the Ad Hoc Committee on the “Triple Revolution” sent to President Lyndon B. Johnson in March 1964, with an accompanying letter. The letter to the President, together with the Report, was also sent to the Majority and Minority leaders of the Senate and the House of Representatives and to the Secretary of Labor. The signers included left-wing activists as well as economists, sociologists and scientists from academia, such as Todd Gitlin, then president of Students for a Democratic Society, Michael Harrington and Norman Thomas of the Socialist Party, Irving Howe, editor of *Dissent* magazine, Gunnar Myrdal and Robert Heilbroner, economists, Rev. A.J. Muste, Fellowship of Reconciliation, Gerald Piel, publisher of *Scientific American*, Robert Theobald, futurist, and Linus Pauling, Nobel laureate for chemistry in 1954 and peace in 1962. The authors identify three revolutions at work: the Weaponry Revolution, the Cybernation Revolution, and a Human Rights Revolution. Aware of the rapid and far-reaching development of computers and automation, the authors issue a warning against the mistakenly utopian project of a “cybernation” and lay out the issues facing the United States, as “the stage on which the machines-and-man drama will first be played for the world to witness”. The text was written against the background of the growing Civil Rights movement in the United States, of mounting skepticism towards military spending and reliance on nuclear weapons as deterrents in the context of the Cold War, as well as the further development of the welfare state, with President’s Johnson “war on poverty” and battle for full employment. The authors are particularly concerned by the fact that the increasing role of computers and automation are believed to open on to “unlimited

production capacity” while requiring “less human labor”. The radical and largely anti-militaristic tone of the document led some to consider that it carried anti-government and anti-American overtones, and therefore entailed media opposition and quick dismissal by the Federal government, but its ideas continued to inspire a large number of activists.

Document C, an excerpt from *The Wealth of Humans*, a book written in 2016 by a journalist at *The Economist*, standing as a counterpoint to Adam Smith’s seminal work, *The Wealth of Nations* (1776), which laid out the conditions for capitalist development. Written two decades after the onset of the IT (information technologies) revolution, in a period where automation and artificial intelligence raise even more challenges, it takes on a critical stance, with insistence on *humans* and their alienation in the contemporary period, in the context of the development of information technologies, increasing automation, the domination of neo-liberal principles, and the development of large companies that emphasize productivity and “digital divide” between those who can adapt to the new world requiring technical skills, and those who are left behind. The document is critical of this new socio-economic order pervaded with technology, where “human work is unnecessary”, where some are still essential while some are not, calling for a need for a reform of institutions to provide for outsiders.

The three texts under consideration each reflect a vision of technological progress which has a different focal point and different standards as to what such progress aims at achieving. Each of them is shaped by a specific vision of the course of history and a different perception of the present degree of advancement of the American society. This, in turn, modifies the distance taken towards responsibility in such matters, which is a function of the relative role attributed to individualism as an engine of social development. Lastly, the set of documents may be considered in the light of the articulation between technological progress and general social welfare.

[While section numbers and titles appear in the next parts of the analysis for the purpose of pedagogical clarity, candidates are required not to include them in their papers.]

1. Apex of progress or crisis?

1.1. Utopia and dystopia

Set against the background of accelerating industrialization and the rise of large firms, document A emphasizes the “law of competition” (l. 1 and 13), with a possible double reading of “law” as law of nature or as a binding, universally accepted principle. The United States is seen as having reached a historical apex. Its mode of development is perceived as unsurpassable: the United States is “better with these than it has been with any others” (l. 41), “most valuable of all that humanity has yet accomplished” (l. 83), and “new substitutes” (l. 43) are not viable. Such a view is further reinforced by the use of agricultural metaphors associated to industrial production: “bend the universal tree of humanity ... production of good fruit” (l. 74), “so far has produced the best fruit” (l. 80). Carnegie also adopts a scientific stance by mentioning the “highest results of human experience” (l. 79), thus leaving no room for idealism, which he even comes to criticize.

Document B stands in stark contrast. It retraces the historical evolution from the agricultural revolution several thousands of years ago to the industrial revolution and, finally, to the “cybernation” revolution. The latter is characterized as a “revolution in production” (l. 1-2). A parallel is thus drawn with the nineteenth-century Industrial Revolution, of which Taylorism, with its scientific organization of labor, largely criticized for its alienating effects upon workers, was an offshoot. Echoes of a questioned mode of labor organization contribute to the skeptical tone of this memorandum, and make it appear as a call for a responsible integration of technological innovation within society.

Even more skeptical, document C casts light on the ambiguity of the notion of “promise” (l. 29 and 32), largely present in the rhetoric of progress: the contemporary period is one where the promise of technological progress is no longer to satisfy all workers but to put *an end to* work, thereby making workers unnecessary. This new form of “promise” no longer encompasses the entire society but fragments it, a situation criticized through the ironic phrase “marvelous new technologies” (l. 16), offering a disenchanting vision of the advancement of the United States. These different perceptions, in turn, lead to different visions in terms of action to be taken.

1.2. What type of action?

In Carnegie's view, the process is uncontainable: "we cannot evade it; no substitutes for it have been found" (l. 7 and 8). It is also unquestionable and is presented as widely embraced: "we accept and welcome" (l. 10). No room is left for criticism, as "objections to the foundations upon which society is based are not in order" (l. 40 and 41). The essay distills acceptance and support to the current economic system, characterized as "great inequality of environment, the concentration of business, industrial and commercial, in the hands of a few" (l. 11-13), and holds the predominant values of the Gilded Age, "Individualism, Private Property, the Law of Accumulation of Wealth, and the Law of Competition" (l. 77-78) as the ultimate and mostly accomplished value system that can be reasonably established (l. 80-83).

Document B shows how the making of a "cybernation" has broken the link between labor and income. In the past, income was connected to "contributions to production, with machines and men competing for employment on somewhat equal terms" (l. 32-33). Largely inspired by Keynesian principles, policymakers relied on the increase of demand as an instrument to increase welfare. Instead, the new mechanisms involve a disappearance of work, with individuals no longer essential to contribute to production. The paradoxical situation that ensues is that more can be produced, enabling higher living standards, but the resulting high unemployment decreases demand and increases poverty. Those who are unable to work therefore need support from the welfare state in a way that is now disconnected from their contribution to production. This notion of a guaranteed income as a right, revived in the 21st century, had been promoted by John D. Pomret in an article entitled "Guaranteed Income Asked for All, Employed or Not", published in the *New York Times* in March 1963. The authors of the memorandum therefore called for an extension of welfare state institutions as a response to the "cybernation revolution".

Document C echoes the words of the "Triple Revolution" committee and, sensing more urgency, points out the need for a reform of institutions. Rapidly changing economic structures and the totally new mode of production, for the first time largely and openly based on the substitution of workers, should not be left to work independently. Responsibility lies with the government to explicitly

seek to mitigate this trend and to provide for those who are not adapted to the new mode of production. Here, the process of increasing technological progress is not accepted as a given element of a natural law. Determinism is refused and action for “sharing social wealth” is called for, as “[c]reating mass digital prosperity [...] is about building institutions which provide for people who do not work because their work is not necessary to generate economic growth” (l. 39-40).

These conflicting views of the course and benefits of technological innovation, oscillating between a call for acceptance and a call for government action, raise the deeper question of technological innovation and the role of individualism.

2. Technological progress and the role of individualism

2.1. Individual as source of progress

In keeping with the mainstream ideology of his times, Carnegie, in document A, identifies “intense Individualism” (l. 54) as progress, as it enables the development of “ability” (l. 16) and “energy” (l. 58). He thus builds his arguments upon the exaltation of self-made men and hard work, both carrying overtones of Protestant ethics and individualism, two sets of values traditionally present in the United States’ collective imagery and particularly vivid during the Gilded Age. The individual, society and “the race” (l. 9 and 15) are set as three separate entities: “the price society pays” for increasing competition is “hard for the individual” but “best for the race” (l. 8-9). Carnegie thus sets a higher purpose of efficiency and excellence that is to transform the human “race” by “[insuring] survival of the fittest” in every department” (l. 9-10). These lines exemplify the current of social Darwinism influential during the period, largely publicized by economist and sociologist William Graham Sumner. The ultimate goal is presented to be the “future progress of the race” (l.14-15), where selection leads to constant improvement of the human “race”. According to this view, natural qualities justify inequalities, and interfering with this amounts to interfering with natural order. Individual effort, though painful at times, serves a higher, more universal good and individual success becomes beneficial for the race, leading to the construction of “the highest type of man” (l. 82).

Document B pinpoints the negative influence of “budget-balancing economists and interest groups” (l. 81) who refuse to accept that changing economic structures require adapted institutions. The authors of the memorandum deplore the “inter-related effects of the triple revolution” (l. 85-86). For instance, the fact that the increasing unemployment induced by the “cybernation revolution” was likely to be an obstacle to the “human rights revolution”. Indeed, African Americans were the category of the population most exposed to job destruction: in this perspective, the civil rights movement was offset by an irresponsible management of the “cybernation revolution”, and acted as a factor of exclusion.

Document C raises the question of inclusion and exclusion. With the digital revolution, who belongs to what group? It seems that workers no longer belong *de facto* to a community, but that community is defined by those who are *entitled* to be accepted as part of it. One of the issues in modern society is to establish the criteria of belonging, to set the standards for “insiders” (l. 18) and outsiders, that is, those who can handle the rapid changes and those who cannot, those who will not suffer from the substitution of labor by machines and those who will. The fact that the “social contract” (l. 23) linking work to dignity and inclusion is now broken changes the nature of social redistribution. The fragmentation of society and the exclusion of some workers is identified as a major danger of the transforming society. In this light, the responsibility of governments is emphasized as a way of keeping this evolution in check.

2.2. Social projects as guarantees of progress?

In his essay, in document A, Carnegie embraces the ideology of *laissez-faire*. He warns against “attacking the foundations upon civilization itself rests” (l. 45), that is, against interfering with the exact reward of effort: “If thou dost not sow, thou shalt not reap”. By using this distorted variant of the Biblical promise (“Therefore I say unto you, Take no thought for your life, what ye shall eat, or what ye shall drink [...]Behold the fowls of the air: for they sow not, neither do they reap, nor gather into barns; yet your heavenly Father feedeth them.” Matthew 6: 25-6, King James Version), Carnegie combats the principle of his views as “primitive Communism” (l. 48) and is faithful to the Lockean tradition that values greatly private property,

present in the founding documents of the young Republic: “upon the sacredness of property civilization itself depends” (l. 50-51).

Document B affirms the necessity to keep to a project of comprehensive social welfare and to keep the promise of widespread prosperity and “distribute the abundance that is the great potential of cybernation” (l. 90) and restore “consumer rights” (l. 92). The real issue of modern society is no longer, according to them, to increase production but to distribute it and make possible the “abolition of poverty” (l. 63-64) allowed by the “cybernation revolution”. We see here deliberate echoes to President Johnson’s “War on poverty” plan, for which this memorandum explicitly makes policy recommendations.

In the wake of the memorandum, document C pinpoints the Industrial revolution as a period which helped to gradually define the “proper role of the state” (l. 2) and led to an adjustment of the relationship between state and the economy through social reform. He stresses its “organized” (l. 2) nature, and the fact that activists “fought for a new social order” (l. 3), going as far as calling them “crusading reformers” (l. 3-4). “[N]ew institutions” (l. 4) were set up to mitigate “brutal new industrial life” (l. 5): regulation by the government was set up, standards and laws were enacted to channel behavior and reconcile the various conflicting forces of society. This ultimately led to the “social democratic model” (l. 7) with large steps taken during the Progressive era, consolidated during the New Deal and under the Johnson administration. The adjustment of institutions observed during the Industrial Revolution and its aftermath is perceived in this document as an example of successful management of technological progress: political projects with a broad social scope appear to have provided a rather satisfactory response to the challenges of technological progress. If so, is the articulation of technological progress and social welfare the goal to be reached?

3. Articulating technological progress and social welfare

3.1. Guiding principles

Document A depicts the aim of industrializing America as the exaltation of talent and as the quest for the accumulation of wealth, investment and profit, in a perpetual movement: society “must either go forward or fall behind” (l. 31-32). Broad social welfare is not part

of the aims of Carnegie's ideal society: instead, America needs to create the conditions of the conjunction of talent with "the free play of economic forces" (l. 36-37).

Document B denounces the "time-consuming criticism" (l. 84) directed at progressive solutions to mitigate the consequences of technological progress and that act as a "brake" (l. 72) to a more productive system where "income-through-jobs" (l. 69-70) would no longer be the dominant model.

In the last document, the author compares division of labor during the Industrial Revolution and during the contemporary period: the former may be characterized as an "all-hands-on-deck" (l. 21) society with roles for all and guaranteed protection at various levels. With the modern redefinition of the necessity of labor, protection needs, according to him, to go one step further, and thus echoes the policy recommendations of the Triple Revolution Committee: institutions should be adapted to transformations and "provide rich lives for able bodied adults, not because of anything they have done but because a riche livelihood is their right" (l. 43-44). It is necessary to rethink the status of individuals who are unemployed and no longer see them automatically as potentially employable: institutions need to take into account the existence of "people who do not work because their work is not necessary to generate economic growth". Different views are therefore held as to the concomitant transformations of institutions and society as a consequence of technological innovation. In the light of these considerations, is there a responsibility towards solving the paradox of technological progress, that is, the promise of a better future likely to bring suffering?

3.2. Solving the paradox?

Document A is an idealization of the present state, holding that "Our duty is with what is practicable now..." (l.70). The negative consequences of industrialization are overlooked, or probably even seen as inexistent. Reversing the trend is equated with a dangerous attempt at substituting Communism (l. 54) to the present system. In this perspective, Carnegie's essay is in keeping with his questionable business practices: Carnegie Steel was one of the trusts which violated fair competition and triggered off the reforms of the "Progressive Era".

Document B identifies and deplores the paradox of “cybernation revolution”, where the possibility for higher productive capacity actually leads to more poverty and exclusion. The problem is epistemological and political: the paradox is “denied and ignored by conventional economic analysis” (l. 48-49), but this ideological stance is supported by “interest groups” (l. 81) who do not envision technological progress an inclusive process. They nevertheless acknowledge the fact that “recent administrations have proposed measures aimed at achieving a better distribution of resources and at reducing unemployment and underemployment. [...] A few of these proposals have been enacted” (l. 74-77). Post-war social democracy has been at work, but partisan congressional debates are identified as the main obstacle.

In document C, the critique of technological progress carries overtones of nostalgia for the Jeffersonian ideal, with the emotionally filled personal anecdote presenting an idyllic image of a garden (l. 50) and of manual work (l. 60-63). By so doing, Avent is critical of technicism and of the exaltation of less productive work and claims the dignity and moral virtue of *any* type of work. An individual’s value is not measured by how much his work can produce but simply by the very nobility of work, not by a set level of effort but by “some effort” (l. 71). While the progressive solution for inclusion he presents may be questionable for society, he shows that the principle is already present in the family structure, a structure of “mutual goodwill” (l. 74): hence the example of his own family history, where children were not asked to contribute for the vital needs of production, not for “material necessity” (l. 72) but to value their parents’ generosity (l.70) and develop “work ethic” (l.58). Transposing these principles to a macrolevel in contemporary societies is therefore one tentative way to solve the paradox of technological innovation and create conditions for society to “[function] smoothly” (l.71).

Conclusion

Technological progress concentrates hope and promises, whatever the position on the political spectrum. However, the expected results and the degree of skepticism vary greatly according to the way the “ideal” society is envisioned. Hence a different attitude towards responsibility. This set of documents illustrates the contrast between those who value market forces and individualism, and who

see technological progress as a set of natural developments, and those who consider that the social consequences of technological progress are largely the result of political choice. They also cast light on the difference in envisioning responsibility towards technological progress: for some, responsibility lies with the individual, in maximizing the benefits of such progress, while for others, the process should be inclusive and involves the responsibility of government to take adequate political action.

