Half a Paradigm Shift in the *JEL* is Quite a Game Changer for Econ 101

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Abstract

Bowles and Carlin make a very strong case for updating and modernizing the curriculum of Econ 101 by integrating new ideas into the mainstream canon. In their view, the popular textbooks in use are essentially anachronistic and instead they advocate the use of the new CORE textbook, *The Economy*, to which they contributed. I agree but suggest additional concepts to introduce to students at the beginning level so that they receive balanced insights into the working of the economic system and of the challenges that lie ahead.

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In a recent article Samuel Bowles and Wendy Carlin argue effectively that it is "time for a change" in the content of introductory economics courses.[1] The gist of their excellent essay is beginning to be widely, even if belatedly, recognized in and out of academia (Appelbaum, 2019; Blinder, 2010; Boulding, 1969; Brochmann, Head, and Rabinovich, 2015; Chang, 2010, 2019; Coyle, 2011, 2012; Cumbers, 2020; Decker, Elsner, and Flechtner, 2019; Dorgan, 2006; Ehrenreich, 2005; Graeber, 2019; Häring and Douglas, 2012; Hill and Myatt, 2010; Keen, 2001, 2016; Kwak, 2017; Leontief, 1982; Lutz and Lux, 1979; Madrick, 2015; Marglin, 2010, McCloskey, 1983, 2000; Mirowski, 2013; Noteboom, 2019; Phelps, 2015; Rajan, 2019; Rajan and Zingales, 2003; Reich, 2018; Rodrik, 2016a, 2016b; Rubinstein, 2006, 2017; Samuelson, 2019; Schneider, 2019; Skidelsky, 2018, 2020; Smith and Wilson, 2019; van Staveren, 2015; Stiglitz, 2019; Stilwell, 2011; Turner, 2012; Wren-Lewis, 2018; Ziliak and McCloskey, 2008; Zingales, 2012). Actually, the proposed changes are past due: more than a decade after the Meltdown unanticipated by the mainstream it is practically impossible to overlook the widespread political, economic, and social conflicts that weigh heavily on the world, most of which have deep roots in the implementation of Milton Friedman's and Friedrich Hayek's ultra-neoliberal economic policies as practiced in earnest by Margaret Thatcher and Ronald Reagan and culminated in the global financial crisis in 2008 that caught only mainstream economists by surprise but not those who followed the writings of Hyman Minsky (Baker, 2002; Cassidy, 2004, 2010; Keen 2001; Komlos 2014b, 2017, 2019; Minsky, 1982; Posner, 2009, 2011; Taub, 2019; Turner, 2012).

The election of Donald Trump was a watershed in world history. It is now widely accepted that the splintering of the liberal-democratic consensus and the rise of right-wing political parties and factions grew out of the long dominance of the *laissez-faire* ideology that was fostered by the economics profession's careless apotheosis of a world view based on neoclassical ideology and its obsession with methodological individualism over social welfare, even when overwhelming evidence was clearly contradicting their thesis and not only in the real world but even on their academic blackboards[2] (Johnson, 2017, p. xiii; Rodrik, 2016a, 2018). Though many hundreds have discussed this issue, no one put it more succinctly and more eloquently than Michael Sandel of Harvard University, widely considered to be the "most popular political philosopher of his generation" (Sandel, 2019). Sandel stresses that "these are dangerous times for democracy," because of the "failure of technocratic liberalism".[3] The technocrats, which presumably includes neoclassical economists, disregarded the "anxieties, frustrations and legitimate grievances" of a significant segment of the electorate and were "tone deaf to the resentments of people who feel the economy and the culture have left them behind." To be sure, "the problem is not only wage stagnation and the loss of jobs; it is also the loss of social esteem. It is not only about unfairness; it is also about humiliation" (Sandel, 2018, 2019).

Principles of economics textbooks and the courses based upon them played a decisive role in the exaltation of the free market until it became the dominant ideology of the land and eventually culminated in this "political failure of historic proportions" (Sandel, 2019). This is the case because they reached tens of millions of students over the decades whose main take-away upon which they based their decisions decades thereafter as citizens, officials, or politicians was that markets are infallible unless governments interfere with their functioning, that taxes are poisonous, competition is good, free trade is best for America, and that government interference in markets lead to inefficient outcomes. This ideology then fueled the economic fundamentalism that led to a rise in inequality a political atmosphere that undermined the social contract and with it social cohesion, that is to say, the very foundation of the political system, an essential ingredient of a smoothly functioning economy (Gylfason, 2019; Putnam, 2000; Stilwell, 2019).

The case Bowles and Carlin make for integrating new ideas into the introductory economics curriculum is not precisely this, but their case does overlap with Sandels' argument. In the process of affectively critiquing some of the most popular introductory textbooks in use, they demonstrate that they are anachronistic and are not in tune with students' current concerns. By doing so, they make an excellent case for updating the curriculum of Econ 101 based on "new problems" that now challenge the students and the larger societies in the developed world, including "what every economics student should know"[4] in this day and age. Student's expectations of what Econ 101 should offer in the post-Financial Crisis hyperglobalized world of the 21st century "include mounting economic disparities, climate change, concerns about the future of work, and financial instability" (Bowles and Carlin, 2019, p. 1).

They suggest, moreover, that "the tools required to address these problems, including strategic interaction, limited information, principal-agent models, new behavioral foundations, and dynamic processes including instability and path dependence are available…" so as "to engage the hearts and minds of our students…" To be sure, these tools are not all that new; they have been available for some decades. In the process of critiquing textbooks written by Mankiw, Samuelson and Nordhaus, and Krugman, Bowles and Carlin point out that "there is indeed something fundamentally wrong with what we are teaching our first-year students". In addition, they introduce the readers to an important new introductory textbook freely available on the internet to anyone, *The Economy* (Team, 2017).[5] It is a collaborative project written by a large number of economists that includes them.

Bowles and Carlin begin the essay by referencing the Nobelist Richard Feynman's strategy to introduce modern concepts into the theoretical physics curriculum by appealing to students' experience with the *real* world. They recommend doing the same for economics: focus on real world problems. Thus, they have a brilliant two-pronged argument for reforming Econ 101: a) so that it appeals to current students' concerns just as Samuelson's path-breaking textbook did in 1948; and b) to modernize it—just like Feynman did for physics in 1961—by integrating cutting-edge research of the recent decades that are usually omitted from the standard textbooks.

I agree with both prongs of their argument and so I also begin with a reference to Feynman (1918–88), because he has also long been a hero of mine, not for his work in modern physics, although I trust its significance, but for his unique and memorable commencement address at the California Institute of Technology. On that occasion he beseeched the graduating class to practice "scientific integrity," "utter honesty," and to practice "leaning over backwards" so as not to "fool ourselves" (and of course others) (Feynman, 1974, p. 11). I believe that this holds for all academics: economists should be held to professional ethics, like other professionals (De Martino, 2011; Bowles, 2016).

My interpretation of this is that from the very beginning, students should be made keenly aware of the differences between real and theoretical markets and my impression is that this is generally not the case (Thompson and Smith, 2019). For instance, when Samuelson and Nordhaus conclude that "markets have remarkable efficiency properties" one does not find any caveats at all and is therefore misleading (Samuelson and Nordhaus 2009, p. 164). Similarly, one looks in vain for a reference to market frictions in Mankiw's formulation: "this invisible hand works its magic" (Mankiw, 2018, p. 9), although many economists received Nobel Prizes decades ago for stressing the importance of imperfect markets.[6] So these formulations fail the Feynman test. They contradict Joseph Stiglitz's assertion in his Nobel lecture that "the reason that the hand may be invisible is that it is simply not there…" (Stiglitz, 2002). So, clearly, Mankiw failed to "bend over backwards" so as not to mislead the students, inasmuch as perfect markets ought not be the default model, at least not in the real-world, where imperfect information dominates.[7] These misleading characterizations are typical of mainstream textbooks and this is what Bowles and Carlin energetically caution against.

Misleading students contradicts the academic code of ethics, or at least should according to Feynman. He suggested as much to the graduating students: "you should not fool the layman when you're talking as a scientist" (Feynman, 1974, p. 12). So, singing the praises of imagined markets is careless, because it provides succor for the dominant ideology that markets can do the heavy lifting for the society and do not need any social oversight. That also means that the public, the media, and politicians have not been well informed about real-world economics (Komlos, 2019). In other words, the most popular mainstream textbooks (as Bowles and Carlin implicitly show) have, in the main, not followed the spirit of Feynman's principles, and did not bend over backwards to explain with enough clarity and ample emphasis the qualifications that accompany the blackboard models. Instead, they "were almost entirely untouched by the contradictory research programs that came to dominate the journals and graduate economics training” (Bowles and Carlin, 2020, p. 8). Hence, we need to be much more careful to delineate the circumstances under which the models are applied appropriately in the real world (Thompson and Smith, 2019). Without such clarifications the current textbooks mostly fail to provide a sufficiently nuanced understanding of flesh-and-blood economic processes.

So, Bowles and Carlin’s advance a persuasive argument. However, I have come not only to praise their essay—and I really do mean to praise it—but also to point out, in Feynman’s spirit, a fair number of critical issues that are not touched upon, or are not adequately represented, in their essay. Although they believe that they represent a “new paradigm”, I shall argue that actually, their paper represents approximately half of one. Thus, it seems appropriate to want to ask what the other half of the paradigm shift might eventually look like. I should emphasize that I am not referring here to the CORE textbook itself, but to their arguments as layed out in the JEL essay. That also implies that the issues that are adequately discussed in the JEL article are not discussed below. Thus, behavioral economics or the financial crisis of 2008, for example, will not be discussed here extensively for this reason even though most mainstream textbooks fail to have an adequate rendering of these topics (Anger, 2019). This essay can therefore be considered as a complement to the JEL essay.

Bowles and Carlin’s organizing principle is that a new introductory text should address students’ concerns about the major issues of our time, such as inequality, poverty, unemployment, sustainability, environment and so forth. “The team of authors began from the principle… that teaching economics to provide insight about a world recognizable to students was likely to be motivating. Most students have had a job and understand the concept of an incomplete labor contract immediately. They or their families have experienced the credit market and know about credit exclusion and credit rationing” (Bowles and Carlin, 2019). This conceptualization is, of course, a substantial improvement over the current textbooks but is it not also up to the professors to unlock new vistas for students and clarify relationships that they might not have contemplated, such as the impact of inequality on the political system. So, I believe that from a Feynmanian perspective of “leaning over backwards”, the other half of the paradigm shift would include the concepts below, even if the list might well be incomplete.

The Other Half of the Paradigm Shift

1) The students must have had enough experience with markets to know also how easy it is to overlook the fine print in contracts that can make them suffer financial losses (Johnston, 2012). Although Bowles and Carlin do incorporate asymmetric information into their narrative and do discuss "strategic" social interactions there is no evidence that this includes **opportunistic behavior** (willful deception or manipulation). Yet, markets grant freedom not only to moral law-abiding citizens but also open up a myriad of possibilities for bad actors and predators with few scruples to take advantage of consumers in an immoral, unprincipled, cunning, crafty, or deceptive manner, or even with guile. Given that contracts are generally incomplete, there are many opportunities to take advantage of unforeseen contingencies (Hart, 1995). Predators might exploit the language of ambiguous or inadequate laws or their absence, thereby enabling them to finagle and profit in ways that was not foreseen by lawmakers. If a transaction is based on deception, then people can be exploited. How many Americans find themselves in a pickle when they found out after an illness how much they owed the hospital, because they erroneously thought that theie insurance covered them (Warren, 2007). This provides the rationale for consumer protection (Sunstein, 2016; Thaler and Sunstein, 2008).

2) And many students must also know what it feels like to be a minority and have experienced **discrimination** (Darity and Mason, 1998). "Today, we understand that the market is rife with imperfections…that provide ample opportunity for discrimination and exploitation" (Stiglitz 2018a). Hence, students need to be able to distinguish between abstract and real markets. The latter need moral oversight in order to level the playing field for disadvantaged groups (Chetty, et al., 2018; Daly, Hobijn, and Pedtke, 2017; Darity and Hamilton, 2012; Derenoncourt and Montialoux, 2018; Holder, 2017). Markets cannot provide moral oversight, because they were not designed to do so. That must come from outside of the economic system (Sen, 2009).

3) Bowles and Carlin do mention the "exercise of power" in labor markets as well as refer to "inequality aversion", however, the developments in the West and especially in the U.S. and U.K. have been much more devastating than those concepts imply, because the problem of the distribution of income amounts to a gigantic **1% problem.** In fact, income and wealth distribution have been stretched to the breaking point (Atkinson, 2015). The average U.S. household in the top 1% of the wealth distribution has accumulated a net wealth of an astronomical $35 million. Yet, 40% of adults do not have $400 cushion on hand to meet an

unexpected expense (Board of Governors, 2018, p. 21). Similarly, with income: between 1979 and 2013 the top 1% of households gained nearly $600K annually whereas the middle class gained $11K (Komlos, 2018). Even former Chairman of the Federal Reserve, Alan Greenspan said that the increase in inequality is "disturbing" and feared that it might "spark… an economically destructive backlash" (Greenspan, 2007b, pp. 365, 408).[8]

4) Students even at the beginning level should know also that markets have **magnification mechanisms** integrated into them. These include first-mover advantages to few firms through the winner-take-all design of markets which have an exaggerated effect on the distribution of income and wealth (Frank and Cook, 1995). Hence, the great wealth amassed by the 1% is not in proportion to their contribution to the economy but is due to the way markets are designed. Moreover, the importance of luck in success is generally either underestimated or is completely overlooked in Econ 101 (Frank, 2016).

5) They do discuss **power** but not the extent to which the skewed distribution of wealth inevitably leads to the accumulation political power in the hands of a few, which, in turn, threatens democratic institutions, insofar as these assume and are based on a wide dispersal of power (Fukuyama, 2018; Lazonick, 2015; Mann and Ornstein, 2012; Page and Gilens, 2017; Rothwell and Diego-Rosell, 2016; Stiglitz, 2011; Wolff, 2017). This exacerbates the 1% problem considerably. It was the perceived injustice of the concentration of power that led to the immense backlash that technocrats did not anticipate. "Like the triumph of Brexit in the UK, the election of Trump was an angry verdict on decades of rising inequality and a version of globalization that benefits those at the top but leaves ordinary people feeling disempowered" (Sandel, 2019). Economists should acknowledge that only the government can maintain the socio-economic balance of power and insist that inequality be kept within acceptable bounds in order to avoid appearing unjust and lose its popular mandate (point 11) (Rawls, 1971; Greenspan, 2007b). Without countervailing power, an oligarchy is bound to gain the upper hand and the society will morph into a plutocracy, insofar as the superrich "usually spend most of their resources in order to purchase influence, prestige and power" (Piketty, 2015, p. 52; Bartels, 2016; Blanchflower, 2019; Collier, 2018; Domhoff, 1967; Formisano, 2015; Freeland, 2012; Friedman, 2014; Fukuyama, 2014; Gilens, 2012; Hacker and Pierson, 2016; Heller, 2018; Kakutani, 2018, p. 25; Kwak, 2019; Levitsky and Ziblatt, 2018; MacLean, 2017; Mann and Ornstein, 2012; Mihályi and Szelényi, 2019; Milanovic. 2019; Mills, 1956; Page and Gilens, 2017; Reich, 2016; Sitaraman,

2017). In other words, old-fashioned power is a crucial determinant of the evolution of the economy not only because of its impact on the political system but also because of the feedback effects on the economy through such factors as the determination of the tax structure, deregulation, gerrymandering, and CEO salaries (points 3, 14, and 39). A wide dispersal of power is therefore a necessary condition for the maintenance of democracy. It is crucial for students to recognize the importance of this connection and that markets are not able to accomplish this balance of power, otherwise they would be puzzled by the reasons for the rise of populism.

6) Hence, safeguarding the stability of the economic system is not the only responsibility of the government. From now on, we need to make the students understand that the stability of a democratic **political system** can no longer be taken for granted. One of the major tasks of a democratic government ought to be to prevent the emergence of an oligarchy by maintaining the balance of both economic and political power (Mayer, 2016)**.** That implies that the students should recognize that the political system and the economic system are inextricably intertwined. Moreover, it should be clear to the students that the concentration of wealth is dangerous not only because of "inequality aversion" but also because "economic power can be translated into political power by channels too obvious for mention" (Arrow, 1978, p. 479). To disregard this issue in the age of Trump is "intellectual malfeasance" (Madrick, 2015). Thus, if we want to maintain a democratic political system, we need economic policies such that the distribution of income and wealth is kept within common-sensical bounds (points 3, 5). Concentration of income in the right tail of the income distribution coupled with the accumulation of frustration in the left tail is a toxic mixture (Komlos, 2017). Only the government can provide guardrails so that the distribution of power does not reach a tipping point. Deprivation is a mighty political force (as is relative deprivation), as Hillary Clinton's "deplorables" demonstrated forcefully in 2016 (point 15) (Komlos, forthcoming).

7) In order to avoid the tipping point (point 6) the government must ensure that the economy remains **inclusive**. Markets were not designed to do that. On the contrary, market processes tend to concentrate power and wealth (points 3-5) (Piketty, 2014; Piketty, Saez, and Zucman. 2018). In turn, in order to maintain their position, the powerful can erect barriers which excludes as many as feasible from sharing in a good life. This then leads to the feeling of betrayal that fuels populism as well as to the hollowing out of the middle class (Faux, 2012; Komlos, 2017, 2016b;

Lazonick, 2015; Sandel 2019; Warren, 2007). Hence, only the government can ensure that everyone is capable of functioning with self-respect and dignity in the economy (Sen, 1985). Markets won't do that. Nobelist Edmund Phelps described the adverse developments faced by the low-skilled workers this way: "The setback has cost the less advantaged not only a loss of income but also a loss of… inclusion—access to jobs offering work and pay that provide self-respect. And inclusion was already lacking to begin with" (Phelps, 2003, 2015). Moreover, "our prevailing political economy is blind to the very concept of inclusion; it does not map out any remedy for the deficiency" (Phelps, 2015).

8) Shouldn't the students also know that the **poor** are excluded from a decent life and are forced to the periphery of the economy and society? In the stage of economic development of the rich countries, we should finally contemplate eliminating poverty altogether. One would think that the $21 trillion economy of the U.S. should be able to do that. It is misguided to think that the poor are undeserving.

The reason is that one has to realize that the poor have been deprived from the very beginning of their lives. The social realities put poor people at a distinct disadvantage because conforming to the established attitudes, mores, and accepted behavior prevalent in poor neighborhoods makes it much more difficult for them to get a decent education and escape poverty. In addition to formal schooling, children acquire many soft skills essential as adults, such as self-control or the lack thereof (Akerlof and Kranton, 2010; Heckman and Corbin, 2016). Children learn from other people's actions how they should act, what they should consider important in their lives, and what will gain them esteem within the social order (point 20). The mediocre schools and the role models available to underprivileged children are too frequently not those that would launch them out of poverty and into the middle class (point 19). Consequently, this perspective is propagated across generations and provides an opportunity for people of privilege to look down on them as free riders and undeserving of society's compassion, whereas in reality their major mistake was simply to have been born on the wrong side of the tracks.

9) Bowles and Carlin emphasize GDP and its growth although it should be clear by now that without being inclusive, economic **growth** is essentially futile as far as the quality of life is concerned (point 21), because a flourishing life will continue to elude the lower segments of the population, i.e., those who have been excluded and would need the benefits gained from growth the most (Komlos, forthcoming, Quinn, and Benton, 2019; Raworth, 2017; Stiglitz, Fitoussi,

and Durand, 2019). This is particularly true in the knowledge economy which rewards educational attainment much more than in prior epochs insofar the poor have been falling behind in educational attainment relative to the expectations of potential employers (points 7, 8) (Unger, 2019). After all, we have been growing for more than two centuries; yet, our civilization now finds itself in a dead end and in urgent need of a new ideology and to rethink the basic preconditions of a good economy and a good life (Fleurbaey and Blanchet, 2013).[9] We need the income of the most economically marginalized to grow without growth of income of the superrich. Then inequality would decline. Generic economic growth such as we have been experiencing recently would be most likely counterproductive, because it would merely exacerbate economic inequality, lower the relative income of the poor, and thereby put further pressure on them (Komlos, forthcoming). So we should not be cheerleaders of unconditional economic growth.

10) Moreover, we must acknowledge that there are also **ecological** limits to growth and adjust our policies accordingly (Boulding, 1966; Georgescu-Roegen, 1971). At the current rate of growth, the amount of concomitant increase in pollution has threatening environmental consequences, especially if we continue to rely on fossil fuels instead of renewable energy sources (Daly, 2007). Hence, the current rate of economic growth is unsustainable and the consequences of our disregard of the warnings of environmental scientists will be nothing less than catastrophic (Sachs, 2017). The problem is that these challenges may appear to be in the distant future, however, the nature of complex dynamic systems is such that they can undergo sudden shifts and become catastrophic. These are referred to as non-linear processes and might become not reversible. We urgently need to think of alternative approaches to how we organize the economy. We need to integrate the challenges associated with pollution, natural resources, the environment, and the delicate and fragile balance between the earth and humans (Nordhaus, 2015; O'Hara, 2009; Sachs, 2015; Stern, 2015). We need to turn our attention away from economic growth and instead come to terms with the ecological problems that growth has created.

11) In addition to being inclusive, the economy would have to be considered moral or **just** in order to be politically and socially stable in the long run (Boulding, 1969; Fleurbaey, 2018; Sen, 2009; Tirole, 2017). Rawls argued that a society can be considered just if and only if one would choose to live in it without knowing what one's position in it would be if she/he entered it at random.

One would most likely accept the social contract in a just society designed behind a "veil of ignorance" insofar as people are risk averse and would not want to end up at the bottom of the social pyramid (Rawls, 1971). And if the social system is unacceptable for us, we should not wish it on others according to the principle of the Kantian universal imperative. Hence, behind the veil of ignorance we would not design an extremely unequal society, fearing that we might end up marginalized and destitute.

Moreover, only inclusive growth has wide-enough support in a democratic society to maintain a stable political structure (points 7-8). If a plutocracy establishes itself, the system will lose legitimacy. Even arch-conservative Alan Greenspan recognized as much: "You cannot have the benefits of capitalist market growth without the support of a significant proportion, and indeed, virtually all of the people; and if you have an increasing sense that the rewards of capitalism are being distributed unjustly the system will not stand" (Greenspan, 2007a).[10] Markets are not designed to allocate income and wealth justly (points 1-5). Consequently, the political system has the responsibility to maintain and reform institutions to accomplish that effectively.[11]

12) One reason markets are not capable of creating a just society is that they are incapable of putting **limits** on outcomes such as the discrepancies in the accumulation of wealth and income (Atkinson, 2015; Piketty, 2014). The Aristotelian golden mean (between the two extremes of excess and deficiency cannot be attained through competitive equilibrium in real markets unless government institutions led by an enlightened elite guide the economy within common-sensical guardrails (Kuttner, 1997).[12] Without such restrictions, markets will be characterized by too many products, too many choices, too large portions in restaurants, excessive balances on our credit cards, too little sleep, too much advertisement, and a concentration of power. Competition makes it so (point 37).[13]

13) Bowles and Carlin do discuss game theory but not that "markets can be '**gamed'** or exploited", for instance, by an oligarchy that can afford to hire an army of lobbyists to strategize in order to accumulate further advantages in the marketplace (Arthur, no date; Drutman, 2015; Galbraith, 2008; Philippon, 2019; Saez and Zucman, 2019). Predatory advertisements by Madison Avenue are "Pfishing for Pfools" in order to take advantage of consumers with lower than average cognitive ability and education (points 1, 44) (Akerlof and Shiller 2015; Johnston 2003; Sberlati 2007).

14) No matter how much hype there is about theoretical free markets in Econ 101, they cannot exist and have never existed for long in the real world except on academic blackboards. The reason is that they implode without effective government **regulation** and oversight employing the appropriate institutional structures (Acemoglu and Robinson, 2012). These are needed for consumer protection, for stability of the system, and for the prevention of the accumulation of excessive market power; these institutions also need to ensure that the antitrust laws are properly enforced, that utilities—technical (or natural) monopolies—serve the public interest and do not engage in price gauging; they have to make sure that firms do not exploit bottlenecks under their control or abuse their dominant position and charge rivals disproportionately for market excess. Governments have to validate mergers, grant patents, and adjudicate bankruptcies (Hart, 1995; Tirole, 2015; Williamson, 1975). They must do all this while at the same time preventing regulatory capture, i.e., prevent lobbies from dominating these governmental institutions (Olson, 1971, 1982). To be sure, this is not a trivial task but without an efficient regulatory apparatus the economic system will simply not function smoothly or properly.

15) Completely missing from Bowles and Carlin's analysis is the notion that students need to understand that beyond basic needs, well-being is generated primarily by **relative income** rather than by absolute income (Duesenberry, 1949; Frank, 1985a, 1985b; Komlos, forthcoming); Leibenstein, 1950; O'Donoghue and Sprenger, 2018; Veblen, 1899). Unless they appreciate this concept, it becomes difficult—if not impossible—to comprehend the accumulation of frustration in the West and the concomitant rise of populism (points 5-11).

16) They do mention the myriad of problems associated with imperfect information but not that **information** is costly to acquire, and this poses a huge obstacle to efficient outcomes and to human flourishing, particularly for those with low-income, inasmuch as they cannot afford to obtain sufficient information for solid decisions. This is especially true in the presence of uncertainty and when sequential complex decisions are involved (points 30, 33) (Akerlof, 2002; Stiglitz 2009; Chiteji and Hamilton 2002; Greenwald and Stiglitz,1986). In turn, this Achilles heel of *laissez faire*, places poor people at a distinct disadvantage especially in the Information Age and implies that the poor are unable to make good decisions that would enable them to escape poverty and flourish (points 7, 8). This is significant, because without this realization it is difficult for students to understand the poverty trap that keeps poor people in their place.

17) Real markets are **inefficient** in the presence of imperfect information, that is to say practically always and often this “results in serious market breakdowns” (Akerlof, 2002; Greenwald and Stiglitz, 1986). According to Nobel-Prize winning Yale Economist Robert Shiller, “the so called efficient market hypothesis, which says that markets efficiently incorporate all information and work with precision, I think is one of the most remarkable errors in the history of economic thought” (The New School, 2009). Other reasons why markets are inherently inefficient includes opportunistic behavior as well as the concept of signaling; In a market with imperfect information people expend resources in order to generate signals as a substitute for unobservable information that otherwise cannot be conveyed credibly (Spence, 1973). Hence, efficient markets are the exception and the default model should be that real markets are inefficient without adequate oversight. This problem is especially acute if the poor are not protected by adequate institutions, so they are not manipulated in spite of their lack of access to information.

18) **Transaction costs** are an additional significant hindrance to efficiency, insofar as consumers have limited time, energy, and money to spend on searching, especially if the alternatives are not at all obvious. Hence, such “market frictions” limit the amount of searching consumers can do before they make a choice and even “seemingly small frictions can have large effects on outcomes” (Diamond, 2011). Furthermore, search costs can limit competition and thereby lead to excessive prices. By lowering transaction costs, consumer protection could play a valuable role in improving the buyer’s ability to make informed, satisfactory decisions.

19) Bowles and Carlin disregard the crucial role of **children** in the economy. Beginning the analysis with adults, as all mainstream economists do, is far from a benign oversight, because we enter the market economy as children, rather than with fully developed tastes. Consequently, the market has a couple of decades to influence our character and unconscious mind unless children are not protected (Freud, 2005). This implies that the utility function is endogenous to the economic system and the assumption to the contrary is no longer defensible (point 21). Thus, a seemingly harmless assumption actually gives the corporate world a leeway to support a popular culture suitable to their interests which trivializes unprofitable aspects of life including frugality or morality and stresses present biasedness rather than the need for self-control (Leonard, 2019; Schor, 2005). Thus, we become fixated on material aspects of life and our further psychological and moral development is stymied. We did not choose to be addicted to instant gratification or to become predominantly overweight, or to become an indebted nation (Board of Governors, 2018;

Brody, Kristen, E. and Meeks, 2015). These characteristics spread like an epidemic, because the corporate world found ways to incentivize us in such a way as to mold us in their image and encroach on our self-control to become spendthrifts, conspicuous consumers, and pay little attention to their consequences in the distant future; this is a significant downside of the liberal market system (Offer, 2006).

20) Childhood is important also because that is when many important cultural attributes are acquired through osmosis, and the roots of the dominant **culture** established (Boulding, 1969; Lears, 1985; Simon, 2015; Temin, 1997). This is a crucial component of the economy as Max Weber emphasized a very long time ago. The propensity to engage in opportunistic behavior, for instance, is determined to a considerable extent by the cultural attributes acquired during childhood. In turn, those characteristics have immense economic impact on the amount of trust within the system and therefore on transaction costs, on the work ethic, the propensity to save, effort expanded on the job, time preference, etc. (Fukuyama, 1995). In other words, the formation of the individuals' whole character including crucially the extent to which future generations are considered in decision-making processes, as the debacle at Boeing, the shortsightedness of Pacific Gas and Electric Company demonstrate (Beck and Seru, 2019; Gelles, 2020). In turn, the culture of poverty is perpetuated if poor people do not have the opportunity to learn those skills early in life, i.e., if they grow up in dysfunctional families living in chaotic neighborhoods with mediocre school systems. During the formative years is when Madison Avenue, Hollywood, or Silicon Valley imposes their cultural vision on children and attempts to turn them into loyal consumers through temptation or through acceptance of greed. Yet, greed is deleterious because it fuels the spirit of irrational exuberance or it leads to excessive opportunistic behavior. It is hyperegocentricity: excessive selfishness and therefore beyond the normal limits of wanting to profit, because it knows no moral limits and because it usually hurts others. Markets do not work well in a culture in which greed is accepted as normal human attribute.

21) Conventional economic theory assumes that individual consumer preferences are exogenous and independent of other consumers, excluding the possibility of manipulation of desires. This is incorrect and beginning students should know that beyond the basic needs **wants are endogenous**, otherwise they would not understand the widespread dissatisfaction in the society. In fact, social norms, habits, customs, status seeking, and herding behavior all play a major role

in aggregate demand (points 18, 20). Madison avenue knows that influencers are important. Students should also (Boulding, 1969; Bowles, 1998; Easterlin, 2004; Frank, 2005; Veblen, 1899). We did not choose to have a society characterized by consumerism and instant gratification. Rather, it was imposed upon us by market forces.

22) Students should understand that the goal of economic activity should not be to maximize GDP but to increase the **quality of life** or life satisfaction or happiness (Frank, 1999, 2004). Yet, "markets are not morally neutral instruments for defining the common good" (Sandel, 2019). Focusing on growth of GDP rather than on longevity or education or happiness or health or security or sustainability or safety or equality is a matter of ideology (Daly, 1978, 2007; Deaton, 2008; Easterlin, 1974; Maslow, 1943; Payne, 2012; Sachs, 3017; Schumacher, 1973; Scitovsky, 1976; Skidelsky and Skidelsky, 2012; Stiglitz, Sen, and Fitoussi, 2010; Urmetzer, et al., 2010; Weitzman, 2009; Wilkinson and Pickett, 2010, 2019). Bowles and Carlin overlook that the free market has failed utterly to increase life satisfaction in the U.S. or U.K. even as GNP soared (Easterlin, 2015; Frey and Stutzer, 2002; Stevenson and Wolfers, 2009).[14] That is why economic growth (point 9) will not remedy our ills. The UK occupies the 15th place in world happiness ranking, and the U.S. is in the 19th place (Helliwell, Huang, and Wang, 2019, Figure 2.7). The goal should be to improve upon this standing.

23) Bowles and Carlin acknowledge that "People are also cognitively limited" but still introduce a macroeconomics based on "tractable models of constrained optimization" although four Nobel Prizes were granted for demonstrating that optimization is not within the reach of mortal beings (Kahneman, 2003; Thaler, 2016a, 2016b).[15] Simon's concept of **satisficing** is a much more convincing description of market behavior than optimizing (Simon, 1955, 1982). Robert Shiller put it succinctly: "[p]sychology really matters . . . you can't ignore the psychology, which unfortunately the economics profession has tended to do with recent theorizing" (The New School, 2009; Akerlof and Shiller, 2009). In fact, the concept of optimization by ultra-rational consumers is pre-Freudian and pre-Pavlovian.[16]

24) Sigmund Freud, the father of psychoanalysis, demonstrated a century ago that much of what we do is not under the control of the rational mind but of the **unconscious** mind (Freud, 2005). In other words, as Kahneman explained, we have two minds, and our decisions are frequently directed not by our prefrontal cortex but by emotions and by desires of which we are unaware, which originate in the subconscious and are not subject to rational decision making (Kahneman,

2011; Thaler, 2016b). That is inconsistent with the assumption of optimization and all that is derived from it.

25) Similarly, classical **conditioning** implies that people respond involuntarily to stimulus. Madison Avenue takes advantage of this aspect of human nature by providing positive stimulus that consumers involuntarily associate with their products and want to buy them. Thus, our choices become a pretense of free will as marketing strategies appeal subliminally to our hard-to-control primordial desires. In reality, *homo oeconomicus* is a pre-Freudian and pre-Pavlovian mental construct. The corporate world in the U.S. spends more than $300-billion-per-annum to make sure that consumers make decisions in keeping with its profit-seeking motives.

26) Bowles and Carlin do not mention **space**, or economic geography, a topic that is omitted in Econ 101 (Krugman, 1991; Venables, 2008). Yet, space imposes an information cost and a transaction cost on exchange and thereby plays a crucial role in market processes (points 16, 18) (Bailey, Glasmeier and Tomlinson, 2019). Moreover, people in the U.S. often live in neighborhoods with a high concentration of poverty with inferior schools and high crime rates. That impacts their life course, because it becomes an obstacle to the accumulation of skills that thwarts their development in the modern knowledge economy (Chetty, and Hendren, 2018; Heckman, Jagelka and Kautz, 2019; Unger, 2019). Hence, slums are a significant factor in perpetuating poverty. No wonder that those trapped by such circumstances see no way out of their hopeless predicament, blame the system, and far too often turn to acts of desperation out of sheer frustration that often brings them into confrontation with the law that puts 2.3 million Americans in jail. In other words, space plays an import role in perpetuating inequality in a dual economy (Temin, 2017). Therefore, we need place-based economic policies, especially for those parts of the American heartland hurt by globalization: "subsidizing employment in such places could… plausibly reduce suffering…" (Austin, Glaeser, and Summers, 2018).

27) Spatial aspects of production generate **network externalities** whereby the benefits depend on the number of firms already in existence at a location. This can lower transaction and information costs and thereby induce positive externalities that lead to conglomerations. Consequently, regions in which firms were early adopters of a technology can lower costs to new entrants and so the region can develop and prosper. In turn, this can generate further gains through economies of scale in production as firms in a region gain market power over time. Note that network externality is one of the magnification mechanisms insofar as it can contribute to the regional

concentration of production and to the development of the economy into a core-periphery nexus (point 4) (Krugman, 1991, 2000). However, network externalities can also work in the opposite direction, for instance, if a dominant firm leaves a region and the region can become endemically distressed.

28) Network externalities as well as scale economies (point 27), play a significant role in the **new trade theory** in which the benefits generated by these factors can outweigh the effects usually associated with the traditional theory of comparative advantage, such as comparative endowments or labor costs (Krugman, 1979). This implies that free trade may not be the optimal strategy at all times and all places (Chang, 2002, 2008; Komlos, 1988). For example, specialization can bring about such gains for firms due to scale economies as well as to whole regions due to network externalities (Helpman and Krugman, 1989). These factors can explain trade between countries with the same factor endowments (Krugman, 1980). However, these effects can also go into reverse: the bankruptcy of a dominant firm in a region, for instance, can have devastating negative externalities on other firms in its vicinity leading to distressed regions and a dual economy (point 26). These issues imply that globalization can become a two-edged sword and the application of the theorem of comparative advantage ought not be applied mechanistically.

29) The budget constraint should include also the limited **time** available to consumers and producers since everything we do has a time component (Linder, 1970). For instance, searching for work or to buy a product is not only costly in money but also in time and effort in the face of uncertainty. In the presence of time pressure intuitive judgment, experience, and cognitive ability are all important in reaching a satisfactory outcome, as consumers must make important decisions with incomplete information (point 27). That time is the only resource that is distributed uniformly in the population is also noteworthy. Time-inconsistency is another issue relevant in many economic problems.

30) Bowles and Carlin do discuss **path dependence**, but not that sequential decisions can lead to inefficient outcomes in resource allocation, in the adoption of technologies, as well as in the evolution of institutions. The problem is that consumers and producers face fundamental uncertainty since neither possesses perfect foresight and hence neither knows how technologies, institutions, laws, regulations, or other features of the economy will evolve over time. They therefore base their decisions on current knowledge, and these initial choices may lock the

economy into an inferior and irreversible developmental path such that the optimal technology or optimal institutions are no longer attainable in the future (Arthur, 1989; David, 1985, 2001). In short, economic history does matter, and it matters a lot. After all, the economy is an evolving system and processes are seldom if ever reversible so that past choices influence present decisions as well as the evolution of the economy (point 44). To assume that all economic processes are reversible is nothing less than "a pernicious error" (Peters, 2019). That also implies that economics is context dependent, should be considered in real time, may be subject to non-linearities, and the same theories ought not be applied across the board without knowledge of the local legal, social and institutional framework.

31) Yet another reason that time is a crucial variable is that intertemporal choice is pervasive in human decision making and mainstream economists use exponential discounting to calculate present value of future gains or losses. However, this has been found to be incorrect because psychological experiments have demonstrated unequivocally that humans have "present biased" preferences. Instead of exponential discounting, the brain comes much closer to using **hyperbolic discounting** that introduces time-inconsistency into economic reasoning (Thaler, 2016a, pp. 91, 110; 2016b, p. 1592). This implies that one's preferences may change over time and one may come to regret that one did not save enough for retirement, for instance.

32) Bowles and Carlin still refer to people with the dehumanizing description as "**agents**". This is unfortunate inasmuch as we are not *yet* automaton and while a few of us do act on behalf of others as their agent, most of us do not do so and instead act on our own behalf or that of our family. The representative agent models in macroeconomics did a lot of damage to our understanding of the economy (Buiter, 2009; Haldane, and Turrell, 2018; Hendry and Muellbauer, 2018; Sachs, 2009; Stiglitz, 2018b; Summers, 1986).

33) Although **uncertainty** is ubiquitous, it is missing from their essay even though how consumers and institutions manage uncertainty is crucial for every aspect of the economy (Arrow, 1963; Taleb, 2006). It is "radically distinct" from risk, for which probability distributions are known (Knight, 1921). However, for many decisions such probability distributions are fundamentally unknowable and therefore one has to use intuition or rules-of-thumb (heuristics) in order to avoid becoming catatonic. This issue is trivialized in Econ 101 although it poses a substantial challenge for consumers as well as for firms and especially in the financial sector with its propensity of misjudging risk (Dow, 2014). For instance, it was not knowable how risky credit default swaps

were before the financial crisis, inasmuch as there was not sufficient experience with them. Kahneman has shown how much difficulties people have assessing probabilities and that judgment based on experience is an important aspect of honing skills associated with navigating the economic puzzle so that students should be introduced to this issue early on (Kahneman and Tversky, 1979; Kahneman, 2003). Indeed, it is difficult to think of decisions that do not require judgment of one sort or another, like choosing a kindergarten for your child. It is often overlooked that fundamental uncertainty generates lot of stresses in the society and is therefore a major source of frustration associated with economy.

34) Technology and innovation are invariably framed in a positive light as drivers of economic growth, rather than as a two-edged sword, thereby overlooking that **creative destruction** also has a "destructive" component that has become more powerful of late (Komlos, 2016c; Schumpeter, 1942). They also neglect the problems caused by technological unemployment (Frey, 2019). Moreover, they disregard the frequent "bite-backs" associated with almost all major technological changes (Mokyr, 2014). Thus, the internet has not been a benign innovation. Not only has it uprooted, redistributed, and destroyed but it also brought us "Surveillance Capitalism" and much closer of Orwell's vision of the world order (Zuboff, 2019; Foroohar, 2019). Just consider Facebook's role in the 2016 election (McNamee, 2019).

35) Bowles and Carlin are silent about minimizing **pain**, yet it is pervasive since it is caused not only by technological change but also by other aspects of economic processes including unemployment, uncertainty, competition, volatility, downward social mobility, bankruptcy, foreclosure, discrimination, opportunistic behavior, loss of income, etc. Indeed, signs of malaise, anxiety, and discontent abound from mail bombs, mass shootings to the skyrocketing "deaths of despair" including opioid overdoses, suicides, and alcoholism (Case and Deaton, 2020; Komlos, 2018, 2019c; Parekh, and Park, 2019; Woolf and Schoomaker, 2019; Koh, Parekh, and Park, 2019; Kristof and WuDunn, 2020). There is ample research to show that losses induce a much stronger negative emotion in people than gains induce a positive one. Thus, minimizing pain should be an important component of economic theory and policy.

36) It would be good to stress that the provisioning of **public goods**, including basic research—a key to innovation—is an important role of government. In fact, "nearly all the technological revolutions in the past—from the internet to today's green tech revolution—required a massive push by the State… Uncle Sam funded many of the innovations behind the information

technology revolution" (Mazzucato, 2015, p. 6). The private sector is not designed to provide such public goods, although they are essential to the smooth functioning of the economy.

37) Bowles and Carlin do not touch upon **ideology**, its political implications, or its crucial contribution to the rise in populism. The standard narrative of mainstream economics claims to be devoid of ideology but is nonetheless infused by it insofar as it stresses such variables as efficiency, growth, and freedom but disregards their negative concomitants in the real-world. By disregarding those issues that contradict the canon—the limitations of markets—they are revealing their hidden value judgments (Lawson, 2016; Rappaport, 1996).

The dominant ideology prefers optimizing over satisficing and absolute income over relative income without being able to justify their choice. It emphasizes the positive effects of competition even when these create a gig economy and cause stress and anxiety (Ravenelle, 2019; Rosenblat, 2019; Schor, 2020). It disregards the threat to the earth that economic development poses and are biased in favor of the free market even if it obviously comes up short. This is not a rigorous scientific procedure based on experiments, observation, and refutability in spite of the extensive use of mathematics (Rubinstein, 2006).[17] Hence, as far as social sciences are concerned, our political, moral, and philosophical sympathies are reflected in our fundamental assumptions about the way the economy works and should work, and in how we structure our thinking and our understanding of the world around us. For example, Martin Feldstein could say in January of 2016, that "the economy is in good shape, …We are essentially at full employment…" (Feldstein, 2016a, 2016b, 2016c). Yet, it did not matter to him at all that just as he was speaking, black high school graduates without college had an unemployment rate of 21.9% (EPI, 2019). Such selection of evidence is part of ideology (Edward, 2016; Epstein, 2015a, 2015b).

Greg Mankiw just admitted his past "allegiance to the G.O.P." and that his "political views" were infused by the reading the works of "Milton Friedman, the defender of free markets and limited government" (Mankiw, 2019). In other words, his economics was inspired by this neoconservative ideology rather than scientific evidence. Alan Greenspan at least admitted that he had an ideology: "I do have an ideology, my judgment is that free competitive markets are by far the unrivaled way to organize economies" (Pelosi, 2008). So, he was "shocked" when he realized that his "ideology was not right". Apparently, he did not know that "free competitive markets" do not work for long without adequate government oversight (Dugger, 2005). The emphasis should be on adequate, implying without, of course, overdoing it. The goal should be the Aristotelian golden mean avoiding the extremes of a command economy or a wild-west economy (Kornai, 1980). Other societies were able to do it. Why can't Americans?

38) Moreover, Greenspan also failed to realize that **competition** is not always beneficial like Adam Smith suggested. We should also consider Darwin's insights in this regard: "individual and group interests often diverge sharply. Far from creating a perfect world, economic competition often leads to "arms races," encouraging behaviors that not only cause enormous harm to the group but also provide no lasting advantages for the individuals (Frank, 2011). In other words, competition does not always bring about efficient results. For instance, competition provides advantages to early adopters of a technology, through network externalities and through economics of scale, even if it might be inferior compared to that of a latecomer (point 27). This may provide permanent competitive advantages so that they may not be reversible due to path dependence (point 30).

39) Although economic activity does not take place between isolated individuals but is obviously embedded in a **society** with its morals and ethics, methodological individualism is still the gold standard of economics (Polanyi, 1944).[18] This is a grave mistake because it means that economists overlook that humans are a super-social species (Epstein, 2014a, 2015a). This implies that very little consumption occurs (and very few decisions are made) by individuals in isolation. Consequently, the foundational philosophy of mainstream economics of methodological individualism is a non-starter and interdependent utility functions should be the starting point in economic principles. In this regard, it is also useful to mention the game-theoretic aspects of cooperation and interdependent decisions (Schelling, 1978).

40) There is no mention of **corporate governance** as an important issue that the market itself is unable to solve. We do not have the kinds of simple firms discussed in textbooks. Instead, we have giant multinationals employing hundreds of thousands of people whose governance plays a major role in economic outcomes but can evade political national oversight in the absence of a world government (Bebchuk and Fried, 2004; Chandler, 1977; Lazonick, 2014, 2015; Philippon and Reshef, 2012). There is a myriad of issues related to transnational corporations such as crossborder operations, transfer pricing, capital flows, tax havens, etc. that require renewed attention. The anachronistic ma and pa operations discussed in textbooks does a disservice to students.

41) Bowles and Carlin do mention monopolies but not **oligopolies** which is arguably the most important form of industrial organization in the modern world. Hence, it should be the default model in Econ 101. Many markets are dominated by a handful of large firms. These firms have sufficient market power to affect prices and to manipulate the market to their benefit. Competition among such firms does not assure an efficient outcome. Instead, extraordinary profits are maintained through product differentiation, branding, and advertisement in order to raise barriers for the entry of competing firms.

42) Bowles and Carlin do mention profit maximization, as well as rents, but not **profits** although multinational oligopolies usually do generate profits, a joint product of thousands of people in the firm and how these profits are divided is not at all clear from economic theory (Sraffa, 1960). How it is divided depends on the legal structure, political power, on corporate governance (points 5, 40).

43) Bowles and Carlin do mention missing markets but not as they pertain to **future generations,** which is crucial to understanding the morality of the threat of global warming and the burgeoning national debt in the U.S. and elsewhere (Kotlikoff, 1992). The world would desperately need a Green New Deal in order to fend off climatic disaster for the sake of future generations and beginning students should be clear about that (Klein, 2019; Rifkin, 2019).

44) Bowles and Carlin do mention agent heterogeneity, but **genetic** endowment, a crucial element of heterogeneity, is missing from their narrative and students may not even be aware of the significant role it plays in the economy (Behrman and Taubman, 1989; Neugart and Yildirim, 2020). It may not be destiny, but it does influence many personal characteristics such as cognitive ability, risk aversion, time preference, self-control, IQ, educational attainment, that, in turn, impacts economic outcomes such as life-time earnings (Benjamin et al., 2012; Robson, 2001; Taubman, 1976; Robson and Samuelson, 2010; Zyphur, 2009). Thus, many latent variables used in economic theory are not under the perfect control of our prefrontal cortex (Beauchamp et al., 2011; Cesarini, 2009; Dickens, 2008). That is just one of the reasons why emotion often overrides reason. Students need to be made aware of the importance of emotion in our decision making apparatus especially since cognitive ability varies enormously in the population.[19] That implies that clever individuals can think faster, have larger working memory, and can solve problems more accurately than their less clever counterparties. Since corporations can afford to hire the super-smart to entrap those with lower cognitive ability, sellers can take

advantage of the inability of buyers to understand detailed aspects of a transaction (point 1). This advantage opens up substantial opportunities for deception and manipulation. That is another important reason why extensive consumer protection is essential for a well-functioning economy. Neuroeconomics has proven through experiments that rational choice is an inappropriate assumption, inasmuch as we have instincts and the effect of our genetic endowment is influential: “in much of what we think, feel and do we march to ancient drummers” (Whybrow, 2005, p. 57).

45) According to **complexity economics,** thinking that the economy is in equilibrium is illusory insofar as it is in a constant state of flux: “[c]omplexity economics . . . assumes that the economy is not a perfectly balanced machine, but an evolving complex system. complexity economics assumes actors in the economy do not necessarily face well-defined problems or use super-rationality. They explore, try to make sense, react and re-react to the outcomes they together create. The economy is not in stasis but always forming, always "discovering" fresh novelty. In this non-equilibrium view of the economy, bubbles and crashes can happen, markets can be ‘gamed’ or exploited, and history and institutions matter” (Arthur, 2014).

46) The Nobelist Paul Krugman thinks that there is too much reliance on **mathematics**: “the economics profession went astray because economists, as a group, mistook beauty, clad in impressive-looking mathematics, for truth” (Krugman, 2009; Romer, 2015). Bowles and Carlin rely excessively on models which are tractable with mathematics. However, this introduces a distortion because many important economic issues do not lend themselves to “constrained optimization”. For instance, the fragility of democratic institutions and their sensitivity to inequality (Editorial Board, 2020). How would one model the relationship between the Reagan tax cuts and the rise of populism, arguably an interesting and important economic issue that needs to be discussed (Komlos, 2019a).

47) **Financial** sector is frequently disregarded even in intermediate courses although it has gained in importance at the end of the 20th century. Finance has a life of its own in the economy, largely unrelated to real activity but influencing it meaningfully (Blinder, 2015; Shiller, 2010). While it usually plays a passive role, sometimes it can cause catastrophes and students need to understand its fragility. We ought not consider bubbles as an external shock but a fundamental part of the economic system that requires vigilant supervision. Students should also understand that rising

debt, both private and public, increases the volatility of the economic system because it is a magnification mechanism and can lead to a balance-sheet recession (Koo, 2014).

48) There is brief mention of the welfare effects of **taxes**, but not that they can also be welfare enhancing to the extent they are invested in infrastructure, education, basic research, environment, as well as maintaining the stability of the political system.

Discussion

Thomas Kuhn's legendary thesis that scientists in a particular field work within a paradigm—a unifying set of concepts and assumptions—and as that normal science matures, they might well be confronted with new evidence that is inconsistent with that paradigm. As the contradictory evidence accumulates, the scientists are forced abruptly to abandon the old and adopt a new paradigm (Kuhn, 1962). Thus, in Kuhn's conceptualization of scientific progress, the shift from one paradigm to another is analogous to a revolution, although the defenders of the old ideas might well contest the change through Ptolemaic rear-guard action to try to rescue the old paradigm before the new one is completely accepted (Smith and Wilson, 2019).

However, although Bowles and Carlin do invoke Kuhn, it should be clear that this conceptualization does not quite fit the development of economics inasmuch as the evidence has been accumulating for decades that essential aspects of the *real-existing* economy fail to conform to the neoclassical paradigm [20] Anomalies in the normal science of economics abound.[21] For instance, Reagan's tax cuts were not supposed to magnify inequality, yet it did, because its benefits accrued to the top 1% of the income distribution and its benefits failed miserably to trickle down to the masses (Komlos, 2019a). Globalization was not supposed to have devastating social, political, and demographic consequences, yet it clearly did, because economists overlooked the millions who were devastated by it (Case and Deaton, 2020; Editorial Board, 2020; Koh, Parekh, and Park, 2019; Rodrik, 2011; Stiglitz, 2006, 2017; Woolf and Schoomaker, 2019).[22] Economic growth was not supposed to create frustration, yet it did in so many places and so many ways, because mainstream economists disregarded the fact that relative incomes also matter, and not only absolute incomes. Deregulation was not supposed to lead to a devastating financial crisis, yet it did because most economists ignored Minsky's warnings (Foroohar, 2019; Minsky, 1982; Kakutani, 2019; Schiffrin, 2011; Shiller, 2000, 2008). Technological change was supposedly the mainspring of human progress, and instead it brought us Facebook, Russian trolls, white nationalists and other extremists and contributed meaningfully to the destabilization of the political system (Foroohar, 2019; McNamee, 2019). Tax holiday granted to the rich was supposed to trickle down to the masses and create "mass flourishing" and instead it fostered the formation of an oligarchy because mainstream economists disregarded the crucial role of power in the economy and political system (Komlos, 2020; Phelps, 2015; Piketty 2020). The 2017 corporate tax cut was projected to increase investments but failed to do so (Summers, 2017). In fact, no *consequential* society-wide prediction of mainstream U.S. economists come to mind which turned out to be near target in the real world. It should be obvious therefore, that "observed behavior deviates starkly from model predictions" (Peters, 2019).

The dominance of hubris is demonstrated well by Nobel-Prize winning macroeconomist, Robert Lucas' pronouncement that the "central problem of depression-prevention has been solved, for all practical purposes" (Lucas, 2003). Equally embarrassing was the suggestion by Princeton economist, Ben Bernanke that a new era of "Great Moderation" has dawned on our Civilization with "a substantial decline in macroeconomic volatility" (Bernanke, 2004). Yet, just four years later the world was confronted with a catastrophic financial and economic crisis (Bertocco, 2017; Foroohar, 2016; Keen, 2017).[23] Following in Bernanke's footsteps, Olivier Blanchard, then chief economist at the IMF, suggested literally minutes before the Meltdown that "The state of macroeconomics is good" (Blanchard, 2008). According to Paul Krugman the problem was not only the failure to predict the crisis. "More important was the profession's blindness to the very possibility of catastrophic failures in a market economy" (Krugman, 2009). Such hubris leads David Graeber of the London School of Economics to suggest that, "Mainstream economists nowadays might not be particularly good at predicting financial crashes, facilitating general prosperity, or coming up with models for abating climate change, but when it comes to establishing themselves in positions of intellectual authority, unaffected by such failings, their success is unparalleled" (Graeber, 2019).[24] Philosopher Brian Epstein concurs: "The social sciences are not working" (Epstein, 2015b).[25]

Instead of all the expectations of progress, the Nobelist Edmund Phelps thinks that the real-existing economy has "fallen short of any conception of a 'good economy'—an economy offering a 'good life" (Phelps, 2015). No wonder that it then "prompted a populist backlash… [as well as] an intolerant, vengeful nationalism" (Sandel 2019). "This failing in the West's economies is also a failing of economics" (Phelps, 2015). No wonder there has been an outpouring of criticism urging for a reformation of the canon[26] (Bertocco, 2017; Boyle and Simms, 2009; DeLong, 2011; Fullbrook and Morgan, 2019; Piketty, 2020; Rifkin, 2019; Rodrik, 2016b; Saez and Zucman. 2019; Sen, 1977; Stiglitz, 2012, 2017).

Thus, anomalies have been accumulating and, as Bowles and Carlin point out, the economic profession has been evolving for decades in small increments without a paradigm shift in sight. Hence, Kuhn's conceptualization does not fit the economics discipline as well as that of Stephen Toulmin's evolutionary model of scientific change in which the change occurs incrementally rather than abruptly (Toulmin, 1972). However, some of these incremental changes have been referred to as paradigm shifts within subdisciplines. So, Jean Tirole refers to "a new paradigm" in industrial organization and Joseph Stiglitz uses the same formulation in information economics (Tirole, 2015; Stiglitz, 2002). Arguably, Bowles and Carlin's effort of integration is a further step in the evolution of—and toward a revolution in—economic thought. To be sure, their attempt to graft new ideas onto the canon of mainstream economics is closer to Toulmin's than to Kuhn's formulation of scientific progress, even if their baseline core textbook, *The Economy*, is lightyears ahead of the most popular textbooks they critique.[27]

They are nonetheless right to be cautious and advocate half a paradigm change in light of the common wisdom that the uptake of new ideas among academic economists is rather limited and arguably this is the best that could be wished for at the moment: the "presumption memorialized in the rule of thumb held by publishers of economics textbooks that a maximum of 15% of the content can deviate from the 'standard principles text'". To be sure, the "15% rule" could not be enforced by the publishers by themselves if their authors and the professors who assign the textbooks were not willing executioners of this rule-of-thumb as the quote from Colander suggests (Bowles and Carlin, 2020, p. 20).

However, Feynman—if he were still with us—would probably not support this consequentialist approach to writing textbooks. In fact, he would probably find it nothing less than "dishonest", a word he actually did use in his address to describe a comparable situation. This is the sense of the conclusion of his address in which he said to the students: "I have just one wish for you—the good luck to be somewhere where you are free to maintain the kind of integrity I have described, and where you do not feel forced by a need to maintain your position in the organization, or financial support, or so on, to lose your integrity. May you have that freedom" (Feynman, 1974, p. 13). A very powerful statement apropos for our time!

Nonetheless, arguably Crystal Gayle's plea, "don't take me half the way," does not apply to economics. After all, both Feynman and Kuhn were concerned with the natural sciences and their thesis may not be directly applicable to the social sciences.[28] It remains to be seen, because a comprehensive paradigm shift in economics "intellectually,… won't be easy" (Graeber, 2019). There are more than intellectual considerations involved in the inertia. After all, there is a worldview behind the mainstream's interpretation of the discipline as well as strong political commitment and a humongous number of vested interests lined up with deep pockets to support the status quo.[29] These include publishers, authors of established textbooks, professors who are ideologically bound to the old paradigm, politicians, as well as conservative think tanks flush with funds of the oligarchs with full-time economists on their payroll.

Although Bowles and Carlin fail to admit that markets are necessary but not sufficient condition for a good economy and stop short of substituting homo sapiens for homo oeconomicus, they do put it on the endangered species list. They just might turn out to be right and going half the way is the right tactic to expose the major fault lines of the discipline so that the profession eventually realizes that markets were not created in heaven by divine power and Kuhn's paradigm shift could then be finalized (Piketty, 2020). I believe that the a above xxx points should help us devise the correct architecture of a new economics for the 21st century that is not set apart from the other social sciences but is fully integrated with them.

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Endnotes

[1] Joseph Stiglitz observed that there is not much variation in the perspectives conveyed in introductory textbooks (Stiglitz, 1988, p. 172).

[2] The ideology of mainstream textbooks is a "faith in markets that is unshaken by any encounters with reality" (Marglin, 2010).

[3] Former labor secretary, Robert Reich says exactly this (Reich, 2020).

[4] This is close to the title of an introductory economics textbook (Komlos, 2014a).

[5] For a detailed critique of Samuelson and Nordhaus textbook see Komlos (2016a).

[6] Krugman at least introduces the qualifying adverb "usually" when he states that: "markets usually lead to efficiency" (Krugman and Wells, 2013, p. 16).

[7] Mankiw has been criticized for the way he thought the introductory economics course at Harvard and has been relieved of this assignment (McCafferty, 2019; Smith, 2019; Sun, 2019).

[8] And adds that if we do not reverse "a quarter century of increases in income inequality, the cultural ties that bind our society could become undone. Disaffection, breakdowns of authority, even large-scale violence could ensue, jeopardizing the civility on which growing economies depend" (Greenspan, 2007b, p. 468; Scheidel, 2017).

[9] However, regional growth that leads to the development of areas wrecked by globalization and technological unemployment is a separate issue (point 26) (Bailey, Glasmeier and Tomlinson, 2019).

[10] In writing he put it this way: "As I have noted many times,… capitalism cannot be sustained without the support of a large proportion of society" (Greenspan, 2007b, p. 396).

[11] The government alone can see to it that CEO pay remains within reasonable bounds and that disgraced CEOs such as Dennis Muilenburg, responsible for the Boeing 737 Max debacle is not fired with a $60 million package (Gelles, 2020).

[12] This perspective is quite similar to the concept of ‘narrow corridor to liberty” outlined in (Acemoglu and Robinson, 2019).

[13] The common wisdom among economists is that more choice is preferred to less. However, this assumption is not shared by psychologists who point out that too much of a good thing can become a bad thing—that, for example, having dozens of salad dressings on the shelf is excessive choice and actually detracts from our ability to make adequate decisions and thus decreases welfare. Thus, having “more is less,” inasmuch as the conventional thinking does not take into account the confusion created by too much choice and the increased time and effort needed to learn about the products offered (Schwartz, 2003). Hence, increased choice does not automatically translate into more satisfaction.

[14] Gallup, “U.S. Life Evaluation (Monthly),” https://news.gallup.com/poll/151160/Life-Evaluation-Monthly.aspx.

[15] Rationality is a “nonstarter,” according to Kahneman. Links to his extremely informative lectures are available on his home page. www.princeton.edu/~kahneman/.

[16] “the basic psychological assumptions on which mainstream (neoclassical) economics is based—though they have long since been disproved by actual psychologists—have colonized the rest of the academy, and have had a profound impact on popular understandings of the world” (Graeber, 2019).

[17] An ideology is a belief system without empirical foundation that justifies social, economic, or political aspirations and policy. Consequently, it is not easily susceptible to empirical refutation.

[18] “all markets are embedded in a web of human relations, values and norms” (Rajan, 2019).

[19] The mean IQ in a population is about 100 and is normally distributed. That implies that about 16% of the population has an IQ below 85 and about the same proportion has an IQ above 115.

[20] See the column devoted to anomalies (Thaler, 1987).

[21] But so are Ptolemaic efforts in defence of the paradigm (Smith and Wilson, 2019).

[22] Greg Mankiw, then chairmen of the president’s Council of Economic Advisers, went as far as to justify the outsourcing of jobs, saying it is “probably a plus for the economy in the long run” (CNN, 2004; Marglin, 2011, @1:52 minutes).

[23] The concept was first introduced by Stock and Watson in 2002: “The U.S. economy has entered a period of moderated volatility, or quiescence.” The misjudgement appears also in (Lucas, 2003).

[24] He continues, “One would have to look at the history of religions to find anything like it. To this day, economics continues to be taught not as a story of arguments—not, like any other social science, as a welter of often warring theoretical perspectives—but rather as something more like physics, the gradual realization of universal, unimpeachable mathematical truths” (Graeber, 2019).

[25] He concludes, about the financial crisis that “It sure is a good thing we have 15,000 economists in the United States. You might have thought they could have let us know this was

coming…. But they didn't. Before the crisis, the greatest economists in the world didn't see it. When the crisis came, they bickered about what to do…. This represents a great failure of social science" (Epstein, 2015b).

[26] On the 500-year anniversary of Martin Luther's challenge to the established church, a group belonging to the organization Rethinking Economics and to the New Weather Institute posted "33 Theses for an Economics Reformation" to the entrance of the London School of Economics (Simms, 2017).

[27] For critical reviews see (Mearman, Guizzo, and Berger, 2018; Stirati, 2018)

[28] Feynman believes that social science is a "kind of pseudoscience," "Social Science… is not a science.… I have the advantage of having found out how hard it is to get to really know something. How careful you have to be about checking your experiments. How easy it is to make mistakes and fool yourself. I know what it means to know something and therefore I see how they get their information and I can't believe that they know, they haven't done the work necessary, they haven't done the checks necessary… I have a great suspicion that they don't know… And they're intimidating people by it" (Edward, 2016). A good example of this is the assumption that macroeconomics needs microeconomic foundations which is not based on any evidence (Epstein, 2014b).

[29] "Politically, it will be even more difficult. Breaking through neoclassical economics' lock on major institutions, and its near-theological hold over the media—not to mention all the subtle ways it has come to define our conceptions of human motivations and the horizons of human possibility—is a daunting prospect" (Graeber, 2019).