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A Common Misunderstanding about Capitalism and Communism Through the Eyes of Innovation

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Abstract

This paper argues that theories of communism and capitalism should not be considered as opposites or alternatives, but rather systems that satisfy different stages of humanity's technological development. The argument derives from Maslow's hierarchy of needs, and a focus on the role of innovation within systems. Some argue that capitalism focuses on the lower, and communism on the higher, layers of the hierarchy – which lays the basis for their inability to compete in different periods.

Keywords: capitalism, innovation, communism, Maslow, development of economic thought

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1. Introduction

This paper's objective is to show that communism and capitalism should not be seen as competing systems, but rather as economic systems for potentially successive periods in human development. The analysis takes a different path from the usual argument that communism is only possible if socialism changes the human tendency towards selfishness. In this paper, socialism is understood to be that which Marx called the lower stage of communism (Marx, 2010). We argue that capitalism, as a system whose core purpose it is to provide services and material goods to satisfy material and basic Maslowian needs, is a system that fails to support the will and ability of persons to strive to satisfy their higher Maslowian needs. The second layer of needs, that of security, is disrupted by continuous changes and the constant generation of new needs. New needs that derive from humanity's technological development, which capitalism advances consistently by a self-supporting loop of need creation and need fulfilment. So, most stakeholders in the system would promote emerging – or uphold mature – innovations. Any capitalistic system can harness the energy of individuals for innovative purposes, but it also keeps the population focused on satisfying their lowest layer of Maslowian needs. In present-day capitalistic systems in the 'developed' and economically strong parts of the world, scarcity of most goods is an artificial construct derived from the creation of desires and needs. The question this paper asks is: what happens if almost all human labour – even the innovation process – is automated? Would such a society be sustainable in the long run if the largely unemployed population were unable to satisfy even their lower level needs because they are unable to work? *Capitalism with an unemployed, bored, impoverished population without prospects is not sustainable*. The hypothesis of this paper is that capitalism is a great economic system for the 'self-

development phase' of humanity, while communism is more suitable for a phase in which humans are not preoccupied with continuous innovation as their lower level needs are already satisfied.

The authors do not endorse any of the systems. The first objective of this paper is to show that communism and capitalism are suitable for fundamentally different phases in human technological development, and that these systems are not able to compete in different development phases because each has an important – yet fundamentally different – role in humanity's technological development. Second, the authors believe that complete automation of work is not necessarily a desirable objective, as work is also a way to attain self-worth. Labour can possess an intrinsic value for the individual that should not be trivialised. However, the current drive towards minimising human labour and increasing technological potential leads to the conclusion that computers will be better than humans at doing everything at some point in time. Work in general, for this paper, is used in a positivistic way – in that labour or work is seen as neither good nor bad.

To proceed with the paper, interpretations of two basic concepts must be clarified. First, any need is subjective; it is a product of the time, social status and culture of the particular person. This interpretation is adapted from Maslow (1943) and Doyal and Gough (1984). This is also the case for human wants. Here, it is enough to understand wants as a softer and weaker form of needs, that are not accounted for by actual needs.

2. Maslow's Theory of Human Motivation

Maslow's theory of human needs and motivation has echoed through the decades. It describes a hierarchical system where the lower and basic needs must be fulfilled first to enable development to the higher stages, or as Maslow put it, '…basic human needs are organised into a hierarchy of relative prepotency' (Maslow, 1943, p. 6). The basic layer of needs encompasses physiological needs that ensure our survival and physical well-being. These needs are not urges and appetites, as these are spontaneous indications of a certain lack of chemicals, or a response to addictive substances, like sugar. Basic needs are not limited to nutritional factors. They include activity, sleep, sexual desire and parental behaviour. Maslow states that it is senseless to provide a conclusive list of basic needs, as they are numerous. Needs also evolve not only subjectively for an individual, but also for the individual's social group, which adapts to standards, technology and social development (Doyal and Gough, 1984).

The second level of needs is the need for safety. This layer is triggered if the previous layer is mostly satisfied (which does not need to be for an extended period). It focuses on matters such as peace, order, health, predictability, organisation and safe conditions as well as external influences such as extreme weather conditions or criminal activity. One outcome derived from satisfying this layer is insurance. This layer also leads to the evolutionary preference for the known above the unknown. It can trigger the search for a protector or strong leader, often the case if intangible fear is apparent in a society.

The third and middle layer consists of the need for love and belonging, and develops when safety is mostly provided. Friendship, sticking by your family, nurturing children and having a partner, are all ways in which this need is satisfied. It represents the level of intimacy and connection.

The fourth is the esteem layer. It consists of two components. One pertains to self-esteem and self-confidence, self-worth, strength, capability and the perception of usefulness; the other pertains to the respect of others, reputation, prestige and need to be unique. The

fifth and last layer represents self-actualisation. It is related to the final striving towards happiness. Maslow writes, 'A musician must make music, an artist must paint, a poet must write, if he is to be ultimately happy. What a man can be, he must be' (Maslow, 1943, p. 10). Every person defines each layer individually, but the top layer is particularly individual, as some aspire athletically, others philosophically or artistically. Some may focus on inventions, writing, creativity, or being a brilliant parent; people choose whatever focus they deem fit. This layer represents a striving for experience, spontaneity, meaning and inner potential.

Humans can get lost in all the layers; they can be endless and unfulfillable. Progressing up the hierarchy of needs fulfilment is a highly individual process, but it can be hugely facilitated or tremendously complicated by a supportive or contradictory economic system – as it is only possible to focus on the satisfaction of higher needs if the lower needs are provided in that moment. To better understand the theory, one should define self-actualisation in the way it is understood in psychology, and not in economic terms. Self-actualisation is defined as 'being a mature, fully human person in whom the human potentialities have been realised and actualised' (Mittelman, 1991, p. 116). 'This tendency might be phrased as the desire to become more and more what one idiosyncratically is, to become everything that one is capable of becoming' (Maslow, 1954, p. 46), or, in more general terms, 'The process of development which does not end.' The self-actualising person has also been defined as one 'who is eager to undergo new experiences and learn new ideas and skills' (Heylighen, 1992, pp. 41-43). A more precise description of self-actualisation is provided by Friedman and Schustack (2004) as a congenital tendency towards spiritual growth and actualisation of the individual potential.

3. Innovation

Generally, the conscious process of business-driven innovation is focused on needs represented by Maslow's lower layers, as most consciously-driven innovation is focused on time-saving services and services that increase safety, comfort or the availability of material goods. There are other innovations, like those oriented towards societal security, but there are also those that target the higher layers. These are social innovations that engage a large share of the population, and they do not necessarily occupy all of an individual's time. Today, there are mixed forms such as the approaches of sustainable or responsible innovation that try to merge pure innovation with aspects of environmental protection or health concerns.

Innovation is the central concept on which this paper builds its thesis. Thus, there is a need to explain the difference between manual innovation and automated innovation. Manual innovation includes all active, human-driven innovation processes. Automated innovation includes all innovation processes that humans are no longer involved in as substantial and active actors. Manual innovation is one of the most fundamental parts of a capitalist economic system; it is also one of the hardest parts to automate. The difference between automated and manual innovation is important, because in a society in which even innovation processes are automated, labour is almost necessarily surplus to requirement. Hence, income from work is not necessarily available to a large share of the workforce, making such a system inherently instable. If an economy's entire production and service creation is automated, but the innovation process is still conducted by humans, labour will still play an important role in the lives of most people. If the innovation process is also automated, only then will labour really disappear for almost the entire population.

3.1 Innovation in Capitalism

The first economist to emphasise that innovation is an endogenous and crucial part of the capitalist economic process was Schumpeter (1939) in his milestone work *Business Cycles*. For Schumpeter, innovation, or the term he coined 'creative destruction', is the means by which economic players surpass their competitors in costs or efficiency, and it alters the prior equilibrium forever. However, Schumpeter was not the first to emphasise the importance of innovation in capitalism. Schumpeter's cycle theory includes short-, medium- and long-term cyclical development (Schumpeter, 1939). The short-term cycle is of little importance for this paper as it mostly shows the psychological state of the economy and current investment behaviour (A'Hearn and Woitek, 2001). The cycle time is too short to represent larger innovation. The medium business cycle, according to Juglar ([1862] 2014), focuses on excessive speculative behaviour and the provision of credit. His theory was later reinterpreted by Schumpeter as innovation and investment for innovation (Legrand and Hagemann, 2007).

The long-term cycle, which usually takes between 50 and 70 years, is known because of Kondratiev ([1925] 1984), who wrote that all major manual innovations develop in waves. In this case, 'waves' is another names for cycles. The idea behind long-term innovation waves is that innovation processes accumulate over time, and at a certain point a critical volume of knowledge is provided, and the technological development spikes. These spikes are the major drivers of technological and economic change, but they are also the major source of crises, as each new wave is not yet strong enough to cope with the growth of the fully-developed former wave. This idea is articulated by Perez's structure of innovation waves or paradigms (Perez, 2002). The paradigms describe a change in industries, both in the way of doing business and in the mind-sets of the people of the time. The emphasis here lies in the observation that these big waves of manual innovation are not bound to one industry only; they impact all industries and our social lives. They impact our way of life and the way we think about and perceive the world. This happened not only in the current information and communication technologies (ICT) paradigm, but also in the first industrial revolution, when industrial production initially arose. It also happened in the paradigm of steam and railways, the paradigm of steel, electricity and engineering and the paradigm of oil, automobile and mass production. It has, therefore, happened in all five big innovation waves (Perez, 2002). The idea of fundamental social changes – not only business changes, adds a new and important dimension to the already-established concept of innovation cycles. Since 1776, five paradigms or fundamental innovation waves have changed human development tremendously (Christopher and Louca, 2001; Perez, 2002). The concept is not without criticism, but it helps explain how innovation develops. Each paradigm improved living conditions in the long run. Not every paradigm led to a 'golden age' – a period in which most people benefitted from the economic benefits of growth produced by the paradigm. Each paradigm provided the economic and social basis for the next paradigm to grow. Some paradigms, like the current one, were helped along the way by state-sponsored innovation, but neither the initiation nor the surge in the type of innovation would have been possible without different markets.

Innovation determines everything; it substantially alters our social lives. In a capitalistic system, systemic change through innovation is always backed by the high involvement of financial markets. At first, banks generally hesitate to invest in new technologies, as risk cannot yet be calculated. Market share is covered mostly by venture capitalists. After the first phase of introducing a new wave of technologies, such as ICT, more investors see the potential. According to the life cycle theory, the profitability of products from

the older paradigms decrease and lose attractiveness for investors compared to the processes and products developed under the new paradigm (Kregel, 2007; Perez, 2009).

Crises in general stem from the fact that development can create some divergence between ongoing innovation and supposedly robust financial structures (Papadimitriou and Wray, 2008), which means that innovations renew the composition and behavioural patterns within a market. Thus, the supervising entities and regulations remain the same while the market and technology develop around them, which leads to a situation that cannot be sustained in the long run. Hence, regulations need to be timely and technologically adequate (Hodgson, 2001) to stabilise innovation, development and growth. Minsky (1992, p. 8) described the process of destabilisation by saying, 'prolonged prosperity transits from financial relations that make for a stable system to financial relations that make for an unstable system'. Times of 'prolonged prosperity' create opportunities for profit making and innovation in the markets, which can be destabilising Alternatively, as Minsky described, '….innovations result from profit opportunities' (Minsky, 1986, p. 359). This drive towards profit lets market players innovate, regardless of whether it is in developing new products, structures or forms of market interaction. Innovations always depend on their particular time. Today, for example, speculation in foreign exchange markets is seen as a common form of business, but in the interwar period, it was seen as a destabilising factor (Nurkse, 1944). Companies rightly develop new ways as established products and ways of doing business lose profitability through increased competition. Accordingly, accumulation of these small developments and internal market innovations develop over time.

Capital is crucial for technological development and, consequently, economic development. This claim was supported both by Schumpeter and Keynes (Pecchi and Piga, 2008). However, the generation of economists that included Keynes and Schumpeter was not the first to talk about technical development and economic growth. They were the first to emphasise the importance of innovation in capitalist economies, but the implicit importance was already present in classics like *The Wealth of Nations* (Smith, 1776). Smith started the chapter 'Of the Division of Labour' early in the book with the famous example of efficiency gained in the pin-making business through the division of labour. This represented a testimonial to process innovation. It emphasised the role of different forms of innovation for the capitalist system. A more Darwinian approach to innovation was asserted by Hayek (1960), who proposed the theory of cultural evolution. He claimed that our habits and problem-solving methods are a product of evolutionary processes developed by humans experimenting. This focus on innovation, however, makes capitalism inherently unstable. There is no such thing as continuous, stable innovation or growth in the long run. System-changing innovation leaps forward and slows down again, as humans must get used to the innovation paradigm before the next wave can even begin to develop. Such development can only be changed by a fully-automated innovation process; this is the exact condition that sets the current innovation paradigm apart from the paradigms of the past. An automated and increasingly self-automating system requires ever-decreasing external and manual input from humans. Therefore, labour will be become a marginal input in the innovation and production process at some point in time and with that, income distribution and the ability to influence future innovations will be increasingly difficult for a growing share of the population.

Almost all major schools of thought in economics have their own approach and understanding of innovation. The importance of innovation to capitalist theory and capitalist society cannot be denied. However, one question that arises from the ICT-based innovations of the recent years is whether 'Baumol's cost effect' is still accurate. Under this premise, a rise in manufacturing productivity generates a rise in income and a heightened demand for labour-intensive services. The claim is that automation is uneven, and complete automation

will never occur. While the Baumol effect accounts for innovations of mechanical nature, it does not always account for ICT-based innovation (Triplett and Bosworth, 2006) and will not account for the growing influence of Artificial Intelligence-(AI)-based innovations (Barrat, 2013; Scherer, 2016). Over time, self-learning systems will diminish the number of jobs available to humans. This does not mean that the ability to work or do voluntary work will evaporate. However, computers, as they do not have desire and do not need to rest, can work more effectively, efficiently and in social jobs even more emphatically than humans. Computers can see what a human requires in a situation from the data creation of the last and current generations. AI changes all, which means that such an algorithm with access to big data-based information should be able to predict future social innovations as well.

In summary, we can say that the capitalist system is dependent on innovation, which is why society today can sustain so many inhabitants on the planet with current living conditions. The history of capitalism, on the other hand, emphasises the unrest and instability that is a product of continuous innovation, though this continuous innovation is what keeps the capitalist system alive.

3.2 Innovation in Communism

Karl Marx stated that communism would be a positive resolution to the alienation that humans experience because of the private ownership of means of production. It would allow humans to reclaim their humanity. This process would, therefore, be a conscious and complete return of man to himself as a social being, and be rendered possible by the already-created wealth from earlier human developments (Marx, 1844). This implies that Marx saw, at least in that moment, that communism would not be conducive to fast technological development to which innovation is central. The transition to communism would imply that another set of factors would shift into the focus of society; innovation is not at the core of communist theory: 'The only force that brings them together and puts them in relation with each other, is the selfishness, the gain and the private interests of each' (Marx, 1887, p.110). Later, the adaptation of communism was advanced by other scholars: 'Communism is utopian as long as man is what capitalism has made him: we need socialism to reshape man, to get rid of his selfishness, or as he said: '*Selbstsucht*', and to turn him into the altruistic person communism requires', and 'Communism is bound to fail under conditions of scarcity: we need socialism to develop the productive powers of humankind and thus create the state of abundance in which alone communism can flourish' (van der Veen & Van Parijs, 1986, p. 653). The two statements show ideological conflict between capitalism and communism, which implies that they are two approaches to humanity's technological and societal development, and that communism could only work if humans focussed on a more socialistic perception of the world. This might be possible if there was no capitalistic competition (as the capitalistic competition would be more efficient in innovating and providing lower layer needs, thus keeping communism from reaching its full potential).

This paper argues that communism cannot work solely with a shift to a less egoistic ideology. It can only theoretically function within a state of almost full economic automation, so production, services and innovation must be automated to a large extent. The extent of automation must be significant enough so that capitalism is not sustainable for development anymore. For the population, such a society would, of course, be one of post-scarcity. This is an argument advanced in the *Critique of the Gotha Programme* (Marx and Engels, 1875) where there is a future where citizens can work or innovate if they so choose, but they do not have to do so, as their basic needs are already taken care of. In such a system, a human workforce is not necessary on a mass scale anymore; full employment is a utopia. It is in

opposition to a system that needs people to focus on consumption and on satisfying the lower layers of Maslow's pyramid. A concomitant feature of consumerism is the proliferation of jobs that workers feel are purposeless (see Bregman, 2017). In theory, a communist system could only work in such a situation if everybody could work on whatever they felt like doing on a particular day, or not work if they chose not to, which is also close to original Marxian thought (Marx, 1844). Schumpeter and Hilferding came close to making similar arguments (Hilferding, 1910; Schumpeter, 1942).

The high Maslowian-level-oriented system of communism is not directly linked with innovation, as the act of innovating itself is not necessarily an activity that can be accounted for at the higher levels. Innovating can have many motivations, and only a few of them are linked to higher motivational levels. Therefore, voluntary innovation will always occur, but it is not the essence that is needed for system survival. We argue that a Marxian communist system is incapable of generating high levels of manual innovation, when the workforce is occupied trying to satisfy the first layer of needs. The social system, in contrast to its inhabitants, focusses on a higher level of needs – personal development and self-worth. This dissonance leads to the inevitable collapse of a not-significantly-automated communist system. Firstly, the difference between what the system delivers, and what the populace want, damages the relationship between the latter and their leadership, especially if the economic situation does not improve, which may well be the case, as not every year is equally fertile or free of crises. Secondly, planning errors are, in the long run, only human. Thirdly, surrounding capitalist systems progress economically and technologically faster, and this can affect people's satisfaction with their own system. The lack of innovation impacts the system from multiple sides, and makes it unsustainable in the long run.

In conclusion, communism can innovate, but innovation is not in the essence of a communistic system.

4. The Conflict Between the Two Systems

The analysis above shows that the two systems are not focussed on the same objectives. They are fundamentally different; hence, their ability to further societal development is also fundamentally different. Capitalism is mainly focused on manual innovation and the satisfaction – and creation – of basic needs in Maslow's scheme. Manual innovation is not a continuous, proportionally growing process, but rather an eruptive one (Perez, 2002). These continuous but spontaneous changes are more fitting to a capitalistic system. The system occupies not only the creators, but also the consumers – with constant innovations in almost all fields. The system's stability has its origins in the pure number of innovations that occupy people and create new desires and needs at a material level. The majority of our world today is still occupied most of the day with acquiring what is needed for the two basic layers. In a society in which these layers are provided for, if the individual is satisfied with affordable goods, then less labour needs to be invested. Hence, a voluntary decrease in labour hours and an increase in focus on the higher layers could be observed (Kallis et al., 2013). Of course, in today's societies, these developments are still marginal but growing quickly (Evans, Lippoldt and Pascal, 2001; Hamermesh and Stancanelli, 2015). The full automation of labour is very much in its early stages.

A communist society, on the other hand, cannot develop materially as fast as a capitalist one, since the system is not focused on innovation. Communist theory focusses more on the higher layers of needs, and is built for stability, harmony and internal development – providing that the basic layers are fulfilled. The system cannot compete with

the fast materialistic development of a capitalistic system, as the innovation of new goods and services leads to the growth of new needs and desires. Capitalism thrives on its capacity to create desires; keeping the populace in a cycle of desiring and acquiring new goods is essential to the survival of each company – and capitalism itself. The various forms of capitalism, like statist, corporatist or neoliberal capitalism, have different abilities to create and fulfil desires, but, for most of the population, this is happening at the lower Maslowian levels (Gough, 1994). If these created desires are not fulfilled, individuals can only partially develop and fulfil their higher needs. Therefore, if the systems compete, the communistic system would not be able to develop its strengths, as it would have to endeavour to keep up with the needs developed by, and satisfied in, the neighbouring capitalistic system. In a capitalist society, despite the relentless generation of new needs, it is at least possible that, for short periods of time, lower level needs are satisfied, thus freeing the population to focus on higher level aspirations. This is much less likely for individuals within a communist society, as the efficiency of their capitalistic neighbours could not be matched, so they are unlikely to progress from Maslow's lowest layers.

Additionally, occasional mis-planning could exacerbate the situation, leading to a shortage of material goods. There is not enough development and innovation to keep people occupied, and the lower needs are not sufficiently provided for to allow a focus on the higher layers of human aspiration. Thus, communism cannot succeed in a stage of technological development in which society is still actively occupied with the development of material living conditions. This does not mean that communist systems will only necessarily occur after a period in which basic needs have been fulfilled, rather it means that a communist system can only excel if basic needs are already taken care of, or, at the very least, do not absorb most of people's time. In history, this never has been the case. The view that communism and capitalism are concerned with the same issues and are dealing with the same development stage in human history – simply because they have been rival economic systems – is not correct.

Maslow's hierarchy of needs emphasises the impossibility of communism being successful in its current or any former development stage. The basic layers will always trump the higher levels. A system focussed on emotional and immaterial development cannot function if its people do not have enough to eat or the material means to fulfil a sufficient percentage of their other basic needs. Such a system can never play out its strengths in this type of environment. A system with a lower-layer focus, on the other hand, can develop its strengths perfectly in such an environment.

The environment changes fundamentally if the production and innovation processes are automated. In a society where automated machines provide for the physiological needs of society, individuals have ample leisure time. The automation of supplementary labour is simpler than that of labour directly focussed on innovation. However, by the end of the automation process, all necessary human labour may be automated, so while voluntary labour may still have a role to play in society, the core and necessary parts of the economic system are automated (Hemous and Olsen, 2013; Frey and Osborne, 2015). Thus, if the lowest layer of the hierarchy is satisfied automatically, and humans are not continuously forced to think about providing the lower two or more material layers for themselves and their families, they have the freedom to strive for higher layers. However, this presupposes that, with automation, most people can still get access to the goods produced by machines. If their income is limited due to a lack of access to paid work, then the social system could start to break down. It would create a situation like the one described by Akerlof and Shiller:

> 'Consider fairness. As in the 1890s, the Depression of the 1930s led to an intense feeling of unfairness in employment relations and a surge of labour disputes worldwide. Communism emerged into its heyday, as intellectuals around the world began to see it as the solution to the exploitation of working people and the failures of the macro economy. A sense of instability in business institutions developed, with fears that the social contrast would be changed unpredictably' (Akerlof and Shiller, 2009, p. 68).

In this case, a capitalist system could not prevail, as the system would not generate the economic means by which people could function. Unwanted interest in higher needs will be triggered if the population is provided with sufficient food and other basic needs without the constant creation of new desires. If the focus on higher needs cannot proceed, or if, because of automation, there is no chance of new income, social unrest would certainly be triggered, as unsatisfied citizens – with lots of time on their hands and little prospects – are not a sustainable basis for any system. Hence, capitalism, in its purest forms, could not be sustained in such a situation. A communistically-influenced system, with a focus on developing the higher layers of its subjects, on the other hand, would thrive under such conditions, as the basic layers are provided and are no longer a concern for society and its members. Individuals would be free to focus on the higher layers of Maslow's needs, and a sustainable system would support them. Schumpeter arrived at a similar conclusion. 'As a matter of fact, capitalist economy is not and cannot be stationary. Nor is it merely expanding in a steady manner. It is incessantly being revolutionised from within by new enterprise…' (Schumpeter, 1942, p. 31).

Schumpeter's long-term evaluation of the prospects for a capitalistic system are summarised in the second part of his book, *Capitalism, Socialism and Democracy*, 'Can capitalism survive?' He begins, 'No I do not think it can' (Schumpeter, 1942, pp. 59, 61). His perception of a socialist system can be seen in part three, 'Can socialism survive?' to which he replies, 'Of course it can' (Schumpeter, 1942, p. 167). His main argument for why socialism may work is that it inspires people to strive for higher things and nobler means than within a capitalistic society. The intrinsic and long-term motivation is higher if the means defined by Maslow are continuously fulfilled.

Labour, in capitalist systems, is directly or indirectly connected to innovation, supporting those who innovate or who promote innovation. The pursuit of fulfilling material needs is often portrayed as the pursuit of money, but it has also repeatedly been shown that money does not enhance individuals' happiness in general. It enhances individuals' ability to provide for their basic needs, but if that level is reached, money does not impact on happiness anymore. Interestingly, the relationship seems to be the other way around, meaning that happiness makes it more likely for a person to achieve an increase in income. Individuals with material objectives in life tend to be unhappy if they are not wealthy. Indeed, the systemic economic growth of the last decades in developed economies has not coincided with a similar increase in systemic happiness (Diener and Biswas-Diener, 2002).

Schumpeter (1934) claimed that the end of capitalism would be the result of innovation being captured within a corporate structure. The rise of such a corporate system could empower leaders to stunt and control innovation if such actions were needed to advance profits. However, Schumpeter also stated that such a system could survive for a long time, which fits with the argument of this paper. While corporate leadership would be empowered to stunt innovation, they would not necessarily do so if the markets developed into an oligopolistic or even monopolistic structure. However, the paradox is that if innovation is controlled by a few, then capitalism has surpassed its purpose, which is to innovate as

much and as fast as possible. Profit, however acquired, is the overarching systemic imperative. Schumpeter described it as the line in the sand that represented the latest stage of a system that has surpassed its purpose. Another purpose is needed at that stage.

A transition to a more social and equitable society is needed for peaceful co-existence. Where people are provided with all necessary goods and have time to develop their own interests, which is one core argument in the discussion about a universal basic income or alternatives, like a right to labour. This merged form of capitalism and socialism would be one possible path to follow. However, regardless of the exact design of a future system, it is crucial to mention that such a system would be economically stable in the long run, as humans are occupied with whatever they like, and most of the system runs on autopilot. A capitalist system operating on a similar technological basis would be less sustainable as production inevitably became ever more concentrated. Such a system would lead to extreme inequality in income and wealth, with all the social instability that this would entail. For this reason, we do not consider unfettered capitalism to be sustainable when automation renders labour redundant.

To keep the paper focused, we do not delve into the nuances of different mixed systems. Also, we do not want to make any claims about the rise of, or transition to, communism. We just endeavour to show that particular initiatives – like a universal basic income – could represent a transitional phase, where the economy exhibits capitalist and socialist features.

An important feature of this paper is its focus on theories in their pure form. Real-world applications have never been, and most probably never will be, the pure form of either system. Still, these purely theoretical utopias have their purpose in motivating humankind (Hodgson, 1995a). The perception that innovation is only driven by private entities in a capitalistic system, for example, is incorrect. Initially, fundamental innovations, and those that require a long time to achieve profitability, are often not driven by private companies' profit motives. Many of these innovations are the product of long-lasting investment programmes that the private sector is often not willing to support. In various cases, public investment enables the first stage of developing such fundamental innovations until the markets can take over, as the risk is more predictable. This is the development phase, what Perez (2002) calls the 'surge'. Fundamental technological innovations leading to the rise of a new technological age are often initiated by public entities and public funding. One famous example of that from the recent paradigm is public funding for innovations leading to the iPhone, for which the internet, basic touchscreen technology, GPS and 13 fundamental components in total were publicly funded (Mazzucato, 2013). These public innovations were then provided to the private sector, enabling the rise of the most valuable company in the world. Hence, a purely private sector innovation is not the case – even in the most developed countries of the world.

These tendencies show that real-world applications of capitalistic systems have communist elements (Hodgson, 1995b). Another socialistically-influenced form of economic design is the classical German approach to the Social Market Economy (Drechsler, 1997). Modern developments, like shared usage models, social entrepreneurship and green economics, are newer additions to the broader field of adaptations. A mixture of systems has always been in place, and our economy is in a constant process of transition between the competing systems' nuances. Similarly, real-world applications of Marxist thought in human history (Leninism, Stalinism, Titoism, Hoxhaism, Maoism) were not pure expressions of the communist economic system. All systems suffered after some time because of scarcity and too little innovation. Fitting with our argument, one could say that scarcity kept the population focused on trying to acquire basic goods, while the systems failed to provide sufficient incentives to individuals to innovate. The systems were either eliminated or had to adapt

substantially to survive. These cases are also a partial confirmation of our thesis that communism and capitalism should have never competed in the first place.

5. Conclusion

The central claim of this paper is that capitalism and communism are not and never should have been treated as competitors, as they are not focused on the same issues and not even on the same period in humanity's development. The mixed forms, however, are very much able to compete, and their use shows the perceived developmental stage of society that employs the particular form. Pure and theoretical systems have different objectives and different appropriate times of usage. All economic systems exist to satisfy human needs. Human needs can be differentiated into layers, and different economic systems focus on different layers in the hierarchy. Capitalism focuses on innovating material goods and services through continuous innovation and competition. The system persists through constant change and occupation for the population. Occupation in this instance refers to both working and having the mind filled up with other things. The system also engages the population by the creation of needs through the constant creation of new products and services. Communism, on the other hand, focuses on higher-layer development of its citizens. Communism mostly ignores the lower layers. It does not focus as much attention on innovation and is a system focused on post-scarcity periods. Theoretically, we would not expect the innovation rate to be as high as in a capitalist system, and to be different in type.

The paradigms that systemically push important innovations have changed over the years. The current ICT-focused paradigm differs from previous innovation waves. Critically, it automates an ever-increasing share of jobs in society, and it has the potential to create a state of Artificial General Intelligence, in which machines will be able to perform almost any intellectual task more efficiently than humans. Such a state is not around the corner, but neither is it an illusion. It is a fact that society is moving inexorably towards that state. In a society where the need for human labour no longer exists , capitalism is not at its strongest as income is required to fulfil needs. If these needs cannot be fulfilled, then the system becomes unstable. Communism, in its classical theoretical form, on the other hand, cannot compete if the lower layers are not provided automatically or externally. However, if those layers are provided automatically, then it can show its strengths and enable individuals to focus on higher layers of needs.

The authors do not wish to speak for or against either system. The argument is only that communism and capitalism should not be seen as competing, and it was an error to do so. Each system has its own purpose and applications. Capitalism builds implicitly on the basic desires of humans, while communism focuses implicitly on higher layers of human desire. The paper also discusses mixed forms that draw on aspects of both systems and how these social systems may be appropriate for a particular developmental stage. Tendencies such as shared, green, social, sustainable and post-growth economies are such partially mixed forms in our current time, which can be seen as a response to the growing automation of labour.

Whether any system will dominate a post-scarcity society depends largely on the design of the system. It is possible that technologically-driven development manages to maintain current capitalist economic systems, through the relentless generation of new wants. On the other hand, increasing inequality could be the catalyst for a systemic change. Both are possible and will most probably lead to mixed forms of the practical adaptation of the two most famous economic systems, but to discuss these developments requires another paper.

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