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The global brain and the emerging economy of abundance: Mutualism, open collaboration, exchange networks and the automated commons

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ABSTRACT

The emergence of artificial general intelligence and the global brain provides new opportunities for realizing humanity's long quest for a more utopian existence. One possibility is a more successful implementation of the state socialist vision of a centrally managed economy, possibly controlled by an AGI "Nanny" instead of a central committee of politicians. An alternative outcome, more in keeping with the original Marxist vision of the withering away of the state, may be the mutualist vision of organizing economic and social life along voluntary lines. A number of recent developments and new ideas may facilitate this outcome. The institution of the commons, in the past available only to small geographical communities, can now be used by global communities. Open collaboration and exchange networks facilitate voluntary cooperative activity by people at dispersed physical locations. Open Production Networks can make the most complicated economic exchanges transparent to consumers, allowing them to factor ethical and sociological considerations into their purchasing decisions. Offer Networks can help people with similar interests and complementary abilities to organize joint projects and organizations. Blockchain technologies could be used to create transparent currencies in which transactions can be done openly. These and other related technologies have the potential to humanize global economic interactions, giving them more emotional resonance, as increasing affluence lessens individual and societal preoccupation with maximizing economic gain.

In 1845, a young Karl Marx (1970: 53) painted an appealing picture of a utopia where "society regulates the general production and thus makes it possible for me to do one thing today and another tomorrow, to hunt in the morning, fish in the afternoon, rear cattle in the evening, criticize after dinner, just as I have a mind, without ever becoming hunter, fisherman, herdsman or critic." In Marx's vision there would be no need for coercive institutions and the state would simply "wither away."

But in the nineteenth century there was no way for the state to "regulate the general production" without assigning people to jobs and making them work for their living. August Bebel (1910), one of Marx's followers who seriously addressed the question of how society would be organized after the revolution, thought that decisions would be made by statisticians and technicians, and that people would follow them voluntarily. Any lawbreakers would be spontaneously punished by the people.

Of course, state socialism in the twentieth century turned out very differently, but the emerging technologies of the twenty-first century offer new possibilities. Francis Heylighen (2015) visualizes humanity's future as a "Return to Eden" guided by a superhuman intelligence, or global brain, that will be distributed across all the world's people and artifacts, connected by the Internet. He anticipates that this fast developing technology will enable an ever more complex society to self-organize voluntarily. This will enable the flourishing of a "world of views" (Veitas and Weaver, 2015), wherein a thousand flowers will bloom unconstrained by a Maoist gardener.

When intelligent robots are available to do all the unpleasant work, it will be technologically possible for all humans to live lives of leisure and creative fulfillment (Goertzel and Goertzel, 2015). But, there is no guarantee that these technologies will bring about such a result; nor that, if they do, this utopic phase will not be preceded by a very difficult transitional period. Challenging organizational questions need to be solved. How will society be structured and how will decisions be made? How will the transition from the current state of affairs to the idyllic future be managed? We should not leave these questions until after the Singularity, assuming that superhuman intelligences will resolve the problems for us, just as Marxists should not have left them until after the Revolution.

Utopian outcomes such as the one Heylighen envisions are possible, but not inevitable, and most certainly not in the short run. There is always a range of sociological outcomes possible within the limits of a

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given level of technological development. Even with nineteenth and early twentieth century technologies, history might have been quite different if less reliance had been placed on violent revolution and the use of state power to compel abrupt change. The emerging technologies of the twenty-first century are making an ever wider range of alternatives possible. It may be possible to successfully realize some ideas that were proven impractical in the past. And it will be possible to implement some arrangements that were not even thought of in the past because they were beyond the limits of technological feasibility. This paper considers several ideas from the past that may be given new life by new technologies, as well as several, such as the global commons and open collaboration networks, that have only recently been proposed.

1. Centrally planned and managed socialism

One possibility could be to rerun the Soviet experiment. One of the reasons for the failure of the Soviet economy to successfully compete with western capitalism was that the computer systems of the time were not up to the task of centrally managing an economy. The Soviet technological intelligentsia in the late 1950s was excited by Norbert Weiner's book *Cybernetics* and hoped that computerization would offer a solution to their management problems. But, after doing some serious feasibility studies they concluded that "it was impossible to centralize all economic decision making in Moscow: the mathematical optimization of a large-scale system was simply not feasible" (Gerovitch, 2002: 273). They estimated that creating a computer network sufficient to the task would cost as much as the Soviet space program. The Soviet leaders turned down the opportunity, leaving it to the American military and venture capitalists.

While the Soviet model is not popular today, because of the human disasters it created, a few diehards argue that the Soviets were simply ahead of their time and that it would be possible to make such a system work with today's computers (Cockshott and Cottrell, 1993, 2015; Dieterich, 2015). With bar coding and other technologies, western nations are already well along on the process of computerizing all transactions. It is conceivable that a regime such as that in North Korea might copy artificial intelligence technology, much as they copied nuclear technology, and set up a networked system with which the state could control, or at least monitor, all economic transactions.

A centrally managed system might be more palatable if it were controlled, not by a central committee of politicians, but by a benevolent "Artificial General Intelligence Nanny" which would presumably act disinterestedly in the general interest. But no such technology exists, and it is not clear that mapping individual interests objectively into the "general interest" is even possible. Nor is it certain that a superhuman intelligence would make maximizing human welfare its top priority.

2. Mutualist economics

The social changes of the nineteenth and twentieth centuries might have been less traumatic if more attention had been given to mutualist economic theories that were current at the time. Based on the pioneering ideas of Pierre-Joseph Proudhon (Hoffman, 1972; Wright, 2015), Josiah Warren (Bailie, 1972; Brown, 2015), Benjamin Tucker (Tucker, 1897) and others in the individualist anarchist tradition (Backer, 1978; Brown, 2015; Horowitz, 1964), minimalist economic theory relied heavily on the labor theory of value (Carson, 2007). The idea was to exchange goods and services according to the amount of labor time it took to produce them, rather than according to market prices.

Labor time pricing was not just a theoretical speculation; replacing market prices with labor certificates was tried in the nineteenth century by American anarchist Josiah Warren and his followers. Warren opened a retail store in Cincinnati in 1827 where goods were sold for what he paid for them in dollars, plus a 4% to 7% markup to cover expenses. In addition to the dollar price, there was a charge for the time it took him to sell them, as noted from a large clock on the wall. The time was paid for with labor certificates that could be exchanged for labor by the purchaser. It made for quick, inexpensive shopping, and the store was quite popular.

Warren also helped to set up experimental communities in the towns of Utopia in Ohio and Modern Times (now Brentwood) in New York, where residents exchanged local goods and services with labor certificates, while continuing to use dollars to buy things from the outside. This worked reasonably well, better than many of the utopian communities set up on the communist principle of equal sharing based on need and economic decision-making by a community meeting or other political mechanism (Berry, 1992). But using labor certificates instead of money did not bring about a revolutionary change in human relationships as Warren hoped. The certificates simply became an alternative currency. Economic studies have shown that most consumer goods already sell for prices closely correlated with the amount of labor it takes to produce them (Brewster, 2004).

More lasting institutions that grew up from the same philosophy include producer and consumer cooperatives, worker-owned enterprises and credit unions, many of which continue to operate and which Wright (2010); Singer (2002) and others from a humanistic Marxist background view as a path toward a better future. These enterprises, however, almost always use money as their medium of exchange and compete in the same markets as capitalist enterprises. Market forces compel them to mimic many of the practices of capitalist companies. As a result most of the Israeli *kibbutzim*, the most advanced of voluntary socialist communities, have privatized their industries and operate them separately from their residential communities (Gavron, 2000).

Unlike market pricing, labor time exchanges do not reward improvements in productivity that cut labor time. The longer a job takes, the more the worker is rewarded. Labor time exchanges depend on people voluntarily working effectively which works in situations such as babysitting cooperatives where parents take care of each other's children. But it does not work very well in markets for consumer goods. Money prices are quick and anonymous: buyer and seller do not need to know each other's motivations. This makes them efficient and capitalist enterprises have contributed a great deal to economic productivity. But this impersonality often seems sterile and dehumanizing, it is criticized as leading to meaningless consumerism or materialism. The sense of community that comes from knowing where one's food or one's handicrafts come from is lost. For this reason alternative currencies such as Ithaca Hours, Calgary Dollars and Eusko (in the Basque Country) are sometimes still used to sustain local businesses and build a sense of community in local areas (Glover, 2013). As the world becomes more affluent, thanks largely to the success of capitalist enterprises using improved technologies, maintaining high economic productivity will become less difficult and there will be a growing opportunity to institute economic arrangements that maximize other values. This is the very outcome that Marx anticipated, that capitalism would build the resources for humanity to go on to build a more humane alternative.

3. The global commons

One arrangement that may be revived with the new technological possibilities is the Commons. In European history, the Commons were lands that were available to be shared freely by all members of an agrarian community. With internet communications, the concept can be applied to resources that are shared freely by people around the world (Kostakis and Bauwens, 2014). The best known example is Wikipedia, an encyclopedia which can be accessed and edited by anyone. Another example is the Free/Libre Open Source Software (FLOSS) movement which includes the Linux operating systems and many other projects. Much of the labor that goes into these projects, as into Wikipedia, is voluntary and unpaid. But major corporations such as IBM and Google have used and contributed to the Linux software. There is no restriction against using resources from the global commons