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Book Review:

Munger, Michael C. (2018). *Tomorrow 3.0. Transaction Costs and the Sharing Economy* *

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In the mid-1950s Erich Geiersberger, a journalist of the Bavarian rural radio, pioneered machinery rings. He had noticed that many family farms in Germany had over-invested in farm machinery compared to farms of similar size in France and in the Netherlands. This, Geiersberger worried, would threaten their competitiveness in the coming European Economic Community. Geiersberger suggested 'machine banks' as a solution to this predicament. The basic idea of the machine bank was straightforward: When farms with excess capacity of a particular machinery service, say spreading manure or turning hay, were able to make this capacity available to their peers with too little or no machinery capacity at all for that operation, both would be better off. Geiersberger carefully designed the institutional scaffolding for machine banks and implemented his ideas in a pilot machine bank. It worked and more banks were founded. Eventually, 'machine banks' became 'machinery rings,' and a machinery ring movement emerged which has spread to other European countries, and which exists to this day.

Michael Munger, a professor of economics at Duke University in Durham, NC, USA, is probably totally unaware of machinery rings; they are certainly not mentioned in his book. Like Geiersberger, Munger is concerned with institutions that improve the utilization of durable goods. Yet, whereas Geiersberger acted as an organization designer and builder, Munger is a keen economic observer of changes in the organization of markets, changes which he expects to become revolutionary. Munger notes as fact the tendency of many households in rich countries to own many durable goods whose capacities for providing useful services are rarely exploited to the full. Examples are cars, machine tools, kitchen appliances, even clothing. This observation is similar to Geiersberger's observation of excess capacity of farm machinery, but the magnitude of services not rendered is certainly much larger in the case of household durables than in the case of farm machinery. The second observation that Munger makes is this, "In the past 20 years – dating the change roughly from eBay's expansion in 1997 ... – entrepreneurs have for the first time been able to specialize in selling not more stuff, but reductions in transaction costs for access to existing stuff" (p. x). Well, Geiersberger had been ahead of this wave, but with simpler technologies – with the plain-old telephone service instead of smartphones connected to the internet, and with administrative rules instead of computer algorithms.

Munger elucidates the implications of his observations for our economic future with the help of two powerful economic tools. One is Adam Smith's insight in the mutually reinforcing linkage between the division of labor and the size of the market, and the effect of this linkage on the efficiency of production. The other is the effect of reduced transaction costs on the size of the market, with concomitant effects on the division of labor, and the efficiency of production. When bundled together, Munger predicts, abundant untapped service capacities, entrepreneurs selling smart transaction cost services that vastly expand limits of markets, and the power of the division of labor, will set in motion an economic revolution on par with the Agricultural Revolution and the Industrial Revolution.

The book is organized into a Preface and six chapters. In the Preface Munger attunes his readers to the main theme of the book: when excess capacity symbioses with drastically reduced transaction costs, a powerful new economy emerges whose value proposition is selling access to excess capacity. The excess capacity that Munger focuses on is the vast stock of unused services that is locked up in durable household goods. Access to the excess results from entrepreneurship that transforms software platforms, smartphones, and the internet into transaction services that are widely adopted by buyers and sellers of excess services from durables.

In Chapter 1 Munger unpacks in more detail the economic reasoning on which he bases his prediction that a new economic revolution is in the making. Based on his understanding of the interplay of excess capacity of valuable services, reductions in transaction costs brought about by advances in information and communication technologies, the human disposition to truck, barter, and exchange, and the creative power of the division of labor, Munger predicts: "(1) The third great economic revolution will be based on innovations that focus on digital tools that reduce transaction costs, not on the creation of new physical products themselves. (2) The result will be that society will be able to make much more intensive use of durables of all kinds, as 'excess capacity' becomes a commodity to be sold instead of a storage problem. ... (3) People will collect experiences, not belongings, and the idea of ownership will seem quaint and archaic by the end of this century..." (p. 23).

In Chapter 2 Munger presents his account of the Agricultural Revolution in the Neolithic, and of the Industrial Revolution in the Anthropocene. Central to his story of the two revolutions are the limits on the cooperation horizon during the two eras. In the agricultural revolution and millennia thereafter, the cooperation horizon was determined by the area controlled by a ruler - the larger that area, the greater the degree of specialization in the economy. In the Industrial Revolution, in contrast, cooperation horizons became defined by the extent of markets, which are limited only by transaction costs.

The themes of Chapter 3 are the sharing economy, the middleman economy, a classification of goods by their economic potential to be shared, entrepreneurship, and a discussion of the business models of Amazon and Uber. The sharing economy, according to Munger, involves "Making more intensive and efficient use of

resources that are otherwise idle." The hallmark of the middleman economy is, "Selling reductions in transactions costs to enable mutually beneficial exchange in commodities, services, and activities that may not even have been conceived as commercial until now." Munger demonstrates the effects of the interaction of the two economies with a 3 x 3 table whose columns represent three levels of transaction cost reductions achieved by the middleman economy, and whose rows represent levels of excess capacity in the sharing economy. The table allows Munger to pinpoint the sweet spot "for the explosion of growth in the economy of Tomorrow 3.0." The sweet spot are "products that, and service providers who, have high excess capacity and value, but for whom current arrangements of ownership and use produce high-but-reducible transaction costs" (p. 54). Towards the end of Chapter 3 Munger envisions an intriguing all-purpose invention which, if it ever came about, would truly deconstruct conventional production: "the cheapest direction for short-term use of things may turn out not to be durables but 3-D printing, especially in remote areas. Being able to "rent" a particular form of malleable material, and then reform it into something else, would be a very different model. Even if the material itself is very expensive, I would only need to print my tool or implement, use it, and then take it back to recycle the material" (p. 69). To some, such a 3-D printer may seem to be as realistic as a scrambled-egg unscrambler. But then, why not?

Munger begins Chapter 4 with some reflections on transaction cost economics which lead him to declare, "from the perspective of the buyer, *all costs are transaction costs*" (p.61). In my mind, this insight is a *deepity*, "a proposition that *seems* to be both important and true - and profound - but that achieves this effect by being ambiguous. On one reading it is manifestly false, but it would be earth-shaking if it were true, on the other reading it is true but trivial" (Dennett 2013, p. 56). Irrespective of whether all costs are transaction costs, or perhaps just costs, scores of entrepreneurs have exploited the preference of consumers for lower costs and they have reduced transaction costs for consumers by employing various information and communication technologies. Two examples of such services are BlaBlaCar and Uber, which Munger discusses in some detail. Because most, perhaps all, innovations have some losers, and because there always seem to be some politicians ready to equate losing with injustice, many innovations have to overcome some political opposition. A case in point is Uber, and Munger discusses, and rejects, the arguments of its political opponents.

In the last two chapters of his book Munger looks at some wider economic effects of the transaction cost and sharing revolution, and to a policy response to one of its potential dark sides. Economic stagnation, saltation, and separation are potential effects of the sharing revolution which Munger discusses in Chapter 5. A software-based economy may appear to tend towards stagnation because GDP is a measure designed to add up the value of market-traded production, and not of consumption. The measure is perfectly unsuited to measure the vast increases in consumption of software-based services and of information that are delivered to consumers at zero prices, such as the various services provided by Google, Wikipedia, Facebook, Twitter, and their likes. Saltation, leapfrogging is perhaps a more familiar term, is a potential benefit of software-based technologies for businesses and economies because they may allow them to advance without having to evolve institutions that were necessary for an economy with an older technology. Separation, finally, is "a permanent increase in the inequality of the distribution of wealth and income." Such a separation, Munger argues, is likely to happen in a Tomorrow 3.0 economy because sharing will lower the demand for manufactured products, with concomitant effects on manufacturing labor demand, wages, and labor incomes. Munger closes the chapter with a look at the gig economy, where highly specialized people are employed in a succession of short-term projects, as an alternative to old-style continuous salaried employment.

In the final chapter Munger addresses the question, "What happens when the logic of cost reduction, now in the form of the Middleman/Sharing economy, displaces thousands of workers?" The answer that he favors is a basic income guarantee by government to people whose jobs have been destructed by innovation.

Munger begins his book with "a lovely apocryphal story generally told about Dwight D. Eisenhower during his time as president of Columbia University" (p. ix). When the campus had to be extended two groups of architects and planners argued about how to lay out the sidewalks. Eisenhower didn't want to plan the sidewalks at all. He wanted the students to trample paths in the grass which then could be paved over. The story is a useful opening ploy for the book. First, as Munger writes, "The 'truth' [of the story] lies in its core insight that permissionless innovation is, or should be, what institutions seek to promote" (p. ix). The story should also remind us that the outcomes of entrepreneurship, on which much of innovation depends, share several attributes with the paths the students trample on campus: unpredictable but not chaotic, rational, but not always neat, and mostly economizing on human effort. Munger has taken the lesson of the story to heart – from him no pretentiously detailed predictions of where exactly entrepreneurs will drive the coming revolution.

An important issue is missing in the book. The issue is government data privacy regulations. In order to nurture mutual trust, middleman platforms have to enable buyers and sellers to convey to each other personal data. When buyers and sellers convey data to a platform, control over the data is transferred from

the data's originators to the middleman. What the middleman then does with the data is up to his entrepreneurial ingenuity. Not all uses may be in the interest of the data's originators, nor are the originators assured a share in the returns that the middleman may derive from their data. Concerns over the loss of control over personal data, perhaps stoked by envy, have given rise to various government regulations aimed at protecting the privacy of data exchanged in commercial transactions. An example is the EU's "Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)." Such regulations tend to impose some transaction costs on buyers and sellers, thereby reducing the extent of the market. Moreover, the regulations, which are usually written in dense legalese, are likely to vex would-be entrepreneurs and dull their creativity.

The omission of data privacy regulations does, however, not diminish noticeably the value of the book. For me, Munger's "Tomorrow 3.0" it is one of the best books on an emerging sector of the new economy. It is that because it explains a new business model, and predicts its future, with conventional, reliable human dispositions and sound economic principles. Moreover, it is well written, never boring, and short. I recommend the book highly.

At the close of my review, I would like to go back to Geiersberger's machinery rings. What might a start-up entrepreneur who has read "Tomorrow 3.0" do with a machinery ring? He or she would probably replace the telephones with smartphones, the price list for services with a web-based continuous double-auction, trust would be fostered by algorithms that generate reputation scores for buyers and sellers, and matchmaking, finally, would be performed by the buyers and sellers themselves, eliminating the need for a salaried matchmaker. In short, the start-up entrepreneur might try to create a 'farm machinery Uber' of sorts. If some entrepreneur offered such a transaction service it would probably disrupt, perhaps even destruct, old-style machinery rings.

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Postscript

Russ Roberts and Michael Munger talk about the book on a podcast at Econtalk.org: Michael Munger on Sharing, Transaction Costs, and Tomorrow 3.0.