

Mike Cooley's Learning Curve – A lifeboat in the internet and artificial intelligence swamp
Bob Thomson, draft of 30 August 2023

2620 words, 4 pages

Mike Cooley's learning curve within the exploding internet explains how our subjective filters of languages, gender, religions, ideologies and cultures allow us to see patterns in the clouds of data on our screens and turn them into information, then knowledge and eventually "wisdom". But now artificial intelligence, through chatbots and large language models, searches and "synthesizes" millions of internet "pages" into "information" based on subjective filters which are dominated by corporate, academic, media and political sources, which aren't necessarily our own.

Social media and the internet provide us with both "information" and "fake news". Cooley's curve provides us with a "map" to this process of "learning" which helps us choose our own filters and thus information, knowledge and wisdom, which can help guide us out of the corporate swamp of chatbots. Our growing capacity to analyze reams of old and new economic and political data and models brings both despair and hope that we can define new low carbon models of cooperation and solidarity. Wikipedia's six million articles, that grand online encyclopedia of open source knowledge, can fit into only 21 gigabytes of memory which can fit on a C\$9 USB memory key. This is a heartening note re popular access via personal computers ¹, allowing us to bypass the "big data" algorithms of Google, Facebook, academia, media and corporations which focus on *their* data to shape and reinforce our consumer desires and purchases, or even to manipulate elections to maintain the status quo.

The potential for progressive use of "artificial intelligence" and "BOTS" provides social and cooperative movements with the analytical tools to begin this huge challenge of transformation. With this growing ability to measure and analyze global data, we have a growing popular capacity to analyze and project macro economic and environmental policies which could lead to alternative models, which could reverse the corporate model driving global warming and gross inequality. Thousands of individual and confederated local, community and regional examples already exist as lived examples of alternatives and progressive social media and cooperative networks which challenge the capitalist mainstream.

With all the hype these days about social media and the internet providing us with both "information" and "fake news", new overviews of global economics and politics bring both despair and hope that we can escape the threat of climate change through new low carbon models of cooperation and solidarity.

Thomas Piketty's 2013 *Capital in the Twenty-First Century*² and his use of big data to document the grossly unequal 1% versus the 99% is one element of these visions of hope and despair. Troy Vettese and Drew Pendergrass in *Half Earth Socialism*³ show how colonial destruction and slavery killed off millions of southern peoples centuries ago, leaving sufficient farmland fallow and reforested to absorb carbon and create a 17th century mini ice age in Europe, thus documenting the potential for reforestation and non-capitalist agriculture to slow and eventually halt the impending global warming disaster.

Thousands of pluralistic cultural, political and living alternatives and systems now exist at local, community and even regional levels. I don't want to say that they make this difficult transition possible, but we have examples and models that give us hope that there are indeed alternatives. Some of these alternatives being: the P2P (Peer 2 Peer) Transition to the Commons⁴, Green New Deal(s)⁵, The Great Transition⁶, Degrowth⁷ and the indigenous "buen vivir"⁸. These new models show paths away from the control and depredation of capitalism, but also set the stage for an epic battle for influence on the hearts and minds of populations and politicians. Can we overcome the "cultural narrative" of Thatcher's "there is no alternative", and start to build one?

Here I try to bring together an understanding of this challenge through a look at the potential for progressive use of "big data" to provide social and cooperative movements with the analytical tools to begin this huge challenge.

1 https://en.wikipedia.org/wiki/Wikipedia:Size_of_Wikipedia

2 Thomas Piketty: *Capital in the Twenty-First Century*

3 Vettese and Pendergrass: *Half Earth Socialism*

4 <https://p2pfoundation.net>

5 https://en.wikipedia.org/wiki/Green_New_Deal#cite_note-OcasioCortez_HR109_20190212-8

6 <https://greattransition.org/about/aims-and-background>

7 <https://degrowth.org/definition-2/>

8 <https://www.degrowth.info/en/dim/degrowth-in-movements/buen-vivir/>

First I look at Irish engineer Mike Cooley's *process of learning* as broad background for identifying patterns which both block and could lead to change. To begin this process, Cooley helps us understand some basic concepts about human knowledge and our learning process, to put today's overwhelming flood of "information" into a context we can deal with in our daily lives.

Mike Cooley's Learning Curve(s)

In a presentation to the International Federation for Alternative Trade (IFAT) in Kilkenny Ireland in April 1991⁹, Michael Cooley presented a graph showing the process whereby we sort the raw data which comes into our lives through our eyes, ears and other senses, over time and with experience, and how each of us continuously turns this data into information, knowledge and eventually, wisdom. This is the learning process and we all use it every day.¹⁰

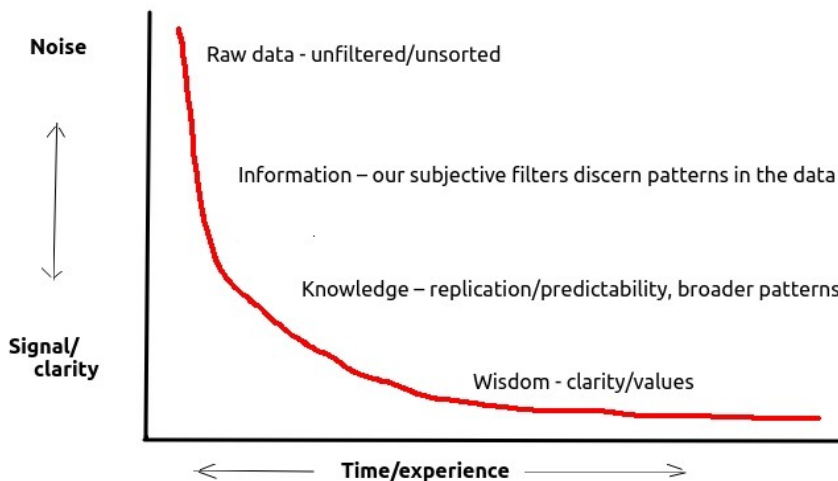
The graph below shows how we use our own individual and highly personal filters to discern patterns in a mass of unsorted data. The patterns discerned in this data in our memory "banks" becomes information, which when subjected to further broader filters and patterns, becomes knowledge, then "wisdom". I put "wisdom" between parentheses" as that level is so broad and dependent on multiple perspectives.

The left axis of the graph shows "noise" or a measure of unintelligibility at the high end, and "signal" or clarity of understandable patterns, at the low end. The greater the "signal", the potentially more "useful" the "information".

Our filters are individual, many and varied. For example: gender, race, language, religious and political beliefs, scientific methodology, and previous sets of patterns that we may have stored for future reference.

The patterns we discern in this filtered data thus become "information" in our memory banks, and when subjected to further broader filters and patterns, become knowledge, then "wisdom". The transition from data to information to knowledge and "wisdom" is a continuous, highly individual and subjective process, hence the bi-directional arrows on the x axis below.

This Cooley calls the learning curve.



The horizontal axis is bi-directional because, at some points on our learning curves we might change our filters, and, seeing different patterns, derive different information from the same data. For example exposure to feminists or new languages could change our filters and thus our "information" and "knowledge".

Cooley developed a critique that he called the "abolition of childhood", under which our reductionist "rational" education systems focus on the "human operating unit", prepared scientifically for the "factory", based on scientific principles and engineering precision, guided by costs and corporate profit potential, reducing all knowledge to rules or recipes.¹¹ He deplored the devaluation of childhood's marvellous complex developmental, experimental, learning-by-doing progression without any knowledge of scientific "rules", under which, for example, we learn to stand by balancing our weight from side to side with no knowledge of theories of momentum or centres of gravity. Or how we learn to talk without dictionaries or rules of grammar. *Or how we take our own subjective filters and/or environmental/cultural objectives to design new political/economic/environmental models.*

9 Mike Cooley: [Some notes on the learning curve](#)

10 Mike Cooley, [Architect or Bee](#): The Human Price of Technology, 1980 (Acquisition of knowledge p.12)

11 Mike Cooley, *Delinquent Genius: The Strange Affair of Man and His Technology*, Spokesman Books, 2018, p.39

So how does the data “cloud” of artificial intelligence influence our learning (and therefore living) curves?

An April 2023 Washington Post article¹² reviewed the sources of artificial intelligence “data” which provide the “patterns” which become “information” in the AI chatbot “learning” process.

Tech companies have grown secretive about what they feed the AI data cloud. So The Washington Post set out to analyze the “black box” of one of these data sets to fully reveal the types of proprietary, personal, and often offensive websites that go into an AI’s training data. Millions of web sites are used to “train” AI’s biggest chatbots. To look inside this black box, they analyzed [Google’s C4 data set](#), a massive snapshot of the contents of 15 million websites that have been used to instruct some high-profile English-language AIs, called large language models, including Google’s T5 and Facebook’s LLaMA. They found that the data set was dominated by websites from industries including journalism, entertainment, software development, medicine and content creation, helping to explain why these fields may be threatened by the new wave of artificial intelligence.

These are the subjective corporate filters and sources which “recognize” the patterns which the chatbots turn into “information” for their users. They do not correspond to the personal filters of the majority of the population of our planet.

To undertake the massive changes in technologies, energy and raw material sources, new consumption and investment patterns that will be necessary to avoid the coming climate change disaster, we have to broaden and change the existing databases of information and knowledge documenting these disasters and defining alternatives. But the corporate world and the governments they dominate are instead focusing on net-zero carbon reduction policies and technologies which have been shown by numerous models¹³ to be incapable of halting global warming and thus potential human destruction.

The corporate mainstream cultural narrative which “helps” us “learn” is everywhere. Bill Rees has noted that:

All cultural narratives, world views, religious doctrines, political ideologies, and academic paradigms are ‘social constructs.’ By the time most people have reached mature adulthood they will have accepted their culture’s overall ‘narrative’ and will subscribe, consciously or not, to any number of subsidiary religious, political, social and disciplinary paradigms¹⁴.

Several years ago an Algonquin First Nations colleague challenged my interpretation of a situation, saying “You don’t get it because your first language is English.” She went on to explain that most of the words in English are nouns, while most of the words in Anishinaabe languages are verbs. She noted that they have a view of the world based on action and process, while we have a world view based on things. Thus language is a filter and multilingualism and multiculturalism help spread more “accurate” or at least pluralistic “information”. The advance of feminist world views has made some progress in many men’s recognition of their biased gender filters and encouraged many to re-analyze the “data” and develop new sets of “information” and knowledge. I find this questioning quite profound and an excellent example of the importance of Mike Cooley’s explanation of the “learning process”, of how our personal filters impact the **cultural narratives** that we grow into, develop and live within, often from birth to death.¹⁵ But an understanding of this process also makes reinterpretation of data with “new” or different filters easier with the new internet and computing tools now accessible at “popular” vs corporate levels.

Much of the hype about the information revolution and the information superhighway focuses only on the increased availability of data, and not on this process by which we (and they) sort, accumulate and use all this data, information, knowledge and/or “wisdom”.

Is there an alternative?

A recent article on artificial intelligence and the frontiers of economic theory notes:

Until recently, data sets were small and costly, and computers were slow and expensive. So it is natural that as gains in computing power have dramatically reduced these impediments, economists have rushed to use big data and artificial intelligence to help them spot patterns in all sorts of activities and outcomes.¹⁶

12 Kevin Schaul, Szu Yu Chen and Nitasha Tiku: [Inside the secret list of websites that make AI like ChatGPT sound smart](#)

13 Stanford University: [‘Net-Zero’ Carbon Emissions Scam Is Something Humanity Doesn’t Have Time For](#)

14 Bill Rees: <https://www.ineteconomics.org/research/research-papers/toward-a-sustainable-world-economy>

15 Bob Thomson, [Pachakuti: Indigenous perspectives on degrowth](#), *Development*, Vol.54 No.4 December 2011

16 Project Syndicate <https://www.project-syndicate.org/commentary/artificial-intelligence-new-economic-models-by-thomas-j-sargent-2019-11>

Can we use big data to approximate how much money would be needed for a transition, where might it be invested and what models of consumer behaviour might drive a transition? Just as important, how are we going to be able to take the necessary accumulated wealth and technology away from the 1% who control it now?

Piketty's documentation of capital accumulation and inequality show that both global and national data is now available to identify patterns in global economic, physical and human resources, as well as behaviours, which could be used to identify and promote alternative ways of human organization, as well as to expose the negative and dangerous exploitation of capital with respect to climate change, militarization and consumer manipulation. New economic, social and political models like the P2P Transition to the Commons, Green New Deal(s), Degrowth, the Great Transition and "Buen Vivir" show paths away from this control and depredation of capitalism.

It's probably safe to say that any transition to an alternative world must involve both daily lived examples *and* political action within the bowels of the monster for change. One could say we need a new 3 Rs: Renounce, Redesign, Rebuild; because Reduce, Recycle, Reuse, while necessary, are no longer enough.

Where should this new and redirected investment go: public transport, alternative energy, local food, equitable distribution, housing, health and education? How can we overcome the expectations of lifestyle and consumption which drive the existing threatening climate disruptions? Can we change our cultural narrative that the strongest get the best deal, to the collective good and well being that guides many indigenous and communal communities?

As mentioned earlier in this article, a certain democratization of technical access to "big data" and computer analysis of patterns and behaviour can now be used to test different investment, redistributive and sustainable models, instead of calculating marketing advantages for corporate profits. The use of corporate dominated social media to manipulate political decisions however goes beyond just having number crunching computer capacity.

CONCLUSION

I argue here that Cooley's learning curve provides us with an overview, a lifeboat, to the corporate internet and artificial intelligence swamp which dominates of the patterns which provide us with information and knowledge. Modern computer and communications technology however offers us an opportunity to collect, analyze, collate and synthesize alternative economic, technical, population and political scenarios to the existing grossly unequal world "systems" which have produced a potential doomsday future based on a fossil fuel dominated resource and technological base. Cooley shows us how to examine the framework of filters which we use to identify information and then knowledge and wisdom from the mountains of data now available to us, and to propose alternatives based on different filters and priorities from those of the creators of these existing world "system(s)".

I have presented a few examples of alternatives. But thousands of local, community, regional and international examples already exist. I don't want to even pretend that this makes this difficult transition possible, and I hope in a subsequent article to present examples that give some hope that there are indeed many micro and macro alternatives. As noted above, some of these alternatives are: the P2P (Peer 2 Peer) Transition to the Commons, Green New Deal(s), The Great Transition, Degrowth and the indigenous "buen vivir". There are many, many more.

Access to the research, technologies, debates and lived experiences of many of these thousands of local, community and regional examples are widely available because of modern computer and communications technology and the greater multi-lingual and multi-cultural sharing that has been facilitated by decades of international travel and communications.

I recognize however that the internet and big data are both a promise and a threat in this context, given the grossly unequal access to resources and the existing technology, infrastructure and capital investments of the "system".

We too can think big however, and contrary to Margaret Thatcher, there are alternatives.