BPTrends COLUMN

EXTREME COMPETITION PETER FINGAR

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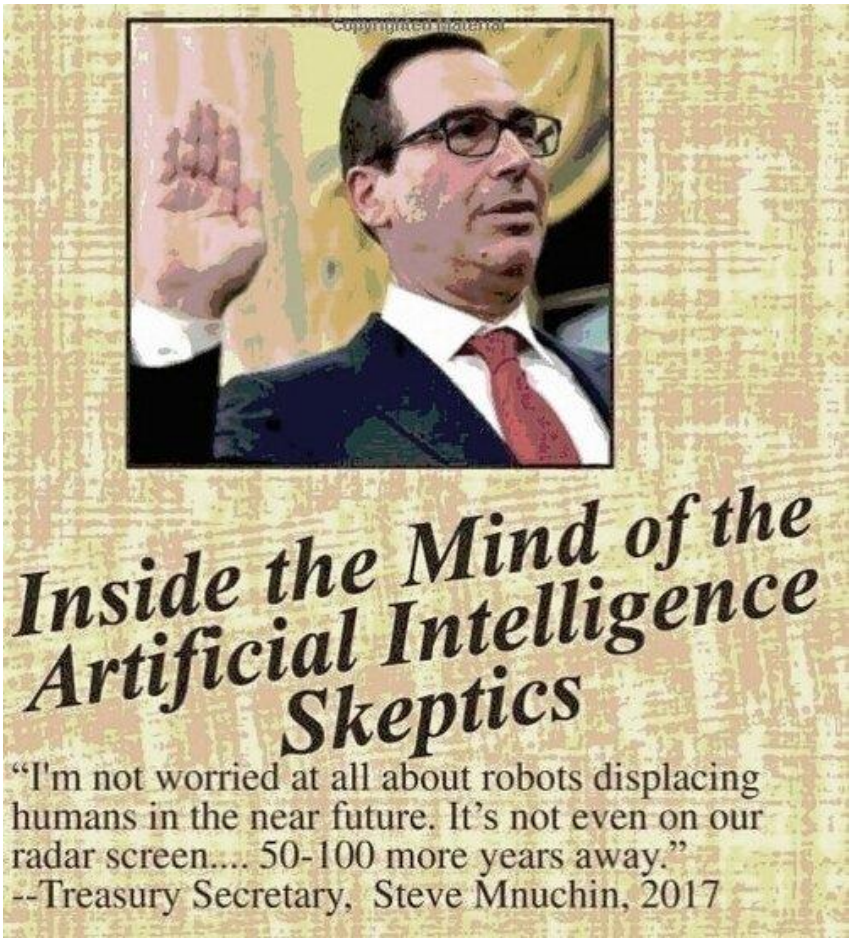
Empathy For and With AI

***"The biggest deficit that we have in our society and in the world right now is an empathy deficit. We are in great need of people being able to stand in somebody else's shoes and see the world through their eyes."* — Barack Obama**

With regard to that thing we call AI, we'll keep this concise! First, did you know that if you wrote a book and it didn't sell much, it might get ranked on Amazon at 10,000,000 or worse?! Yet, here's a book written over 40 years ago that has a phenomenal recent ranking of around 2,000. That book is Alvin Toffler's *Third Wave*. It's about the transformation of human civilization, from 3,000 years of Neolithic hunter gatherers progressing toward the agricultural age, onward 300 years to the Industrial Age, then on to the Information Age of the 1980s.

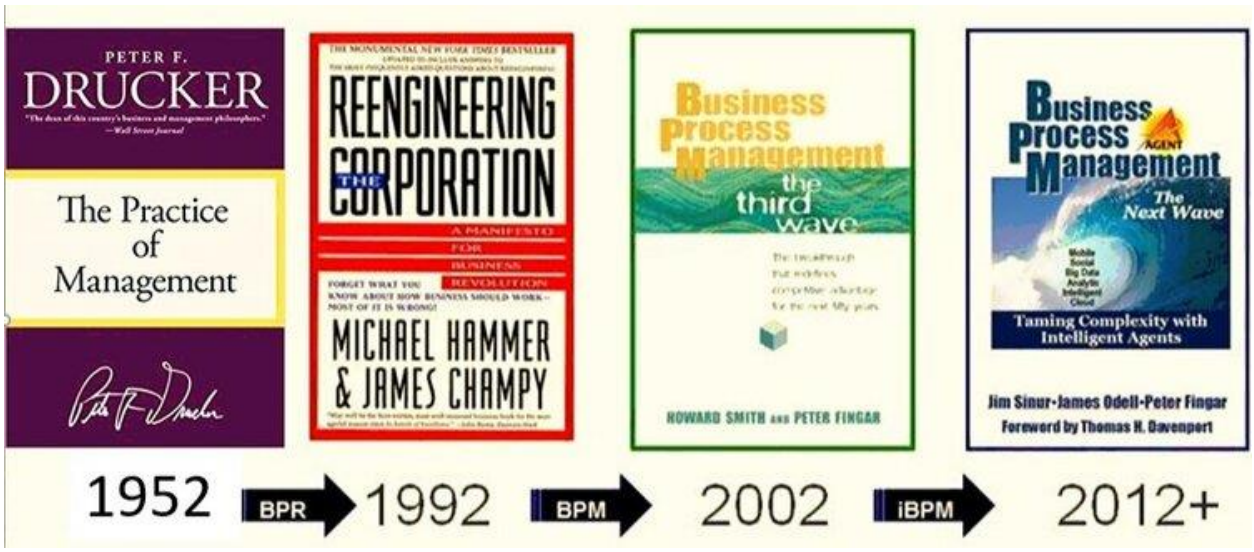
And now we have another Third Wave, the Third Wave of AI. Even though current pundits talk of a slowdown of interest in AI (as shown in the book cover below), the phenomenon of Empathy changes it all. So first, we could have some empathy for AI itself, for it will change civilization as much as Toffler's three waves, but hasn't gotten nearly as much transformational credit.



What exactly is empathy? While "empathy," "sympathy," and "compassion" are three words often used interchangeably, there are subtle differences. You can take a closer look at how to differentiate them Ctrl Click here. (https://chopra.com/articles/whats-the-difference-between-empathy-sympathy-and-compassion)

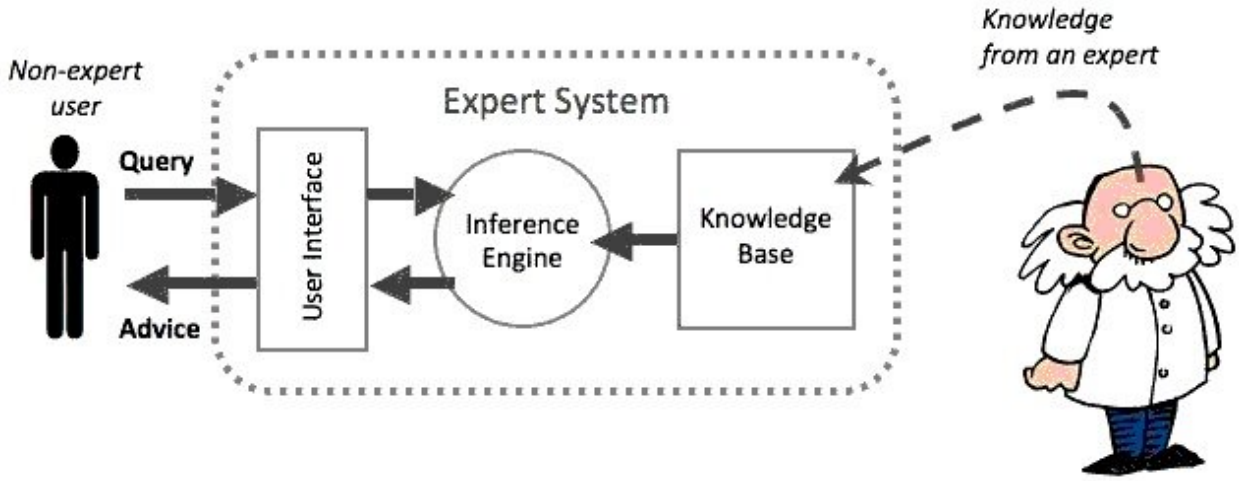
In short, empathy is the ability to share someone else's feelings or experiences by imagining what it would be like to be in that person's situation, to step into their shoes.

Let's move on to another "new" Third Wave: ***Management itself*** has gone through three waves, beginning with pioneers Drucker, Demming and Juran. Next came Hammer and Champy who tore down the walls between departments using Enterprise Resource Planning (ERP) ... but once installed they were cast in concrete.



Then came Howard Smith with *BPM the Third Wave* that made processes dynamic and able to expand beyond the corporation and on to the entire value chain. Then we were on to a next wave in 2012 where the BPM systems became augmented with the power of AI.

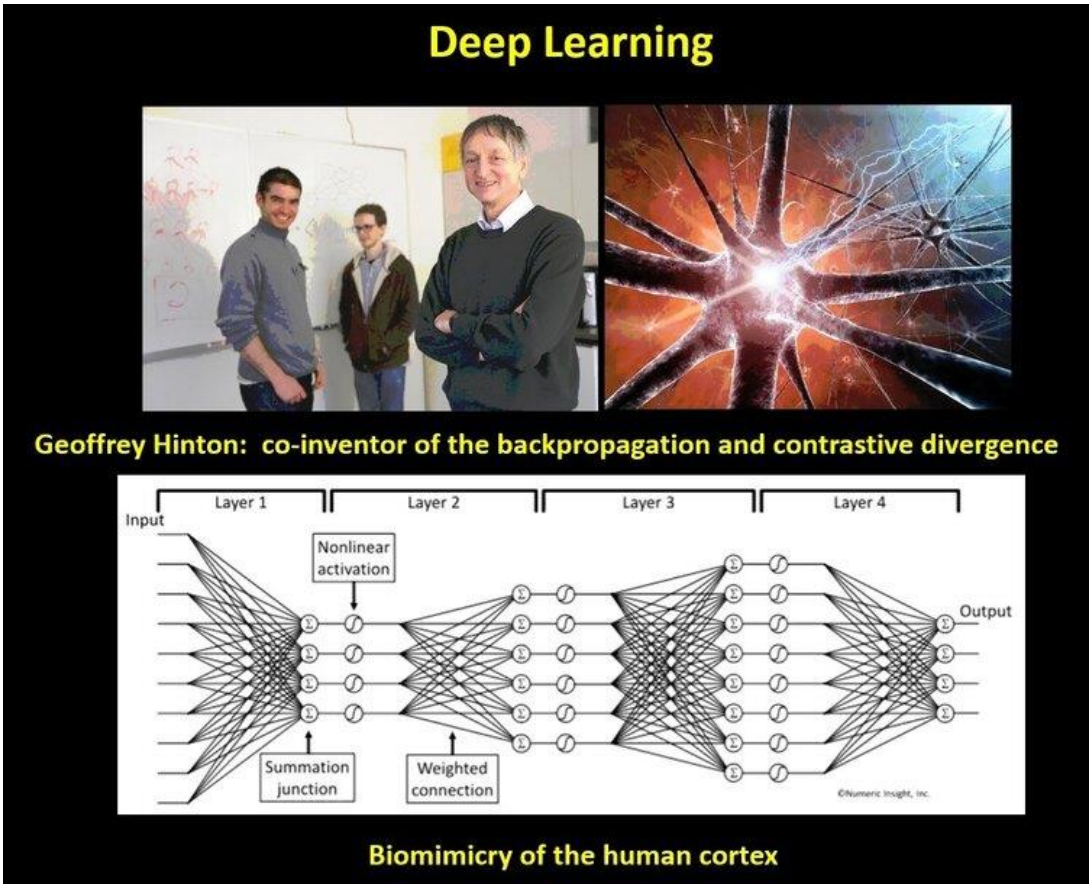
Now, let's take a look at the **three waves of AI**, a term coined in 1955 by MIT's John McCarthy. The first big wave was expert systems, around the 1980s. Expert systems were designed to solve complex problems by reasoning through bodies of knowledge, represented mainly as *if–then rules* rather than through conventional procedural code.



Source: Wikimedia Commons

The problem was that it took constant updating of the "if-then" rules by the subject matter experts. Oops… off to an early AI winter.

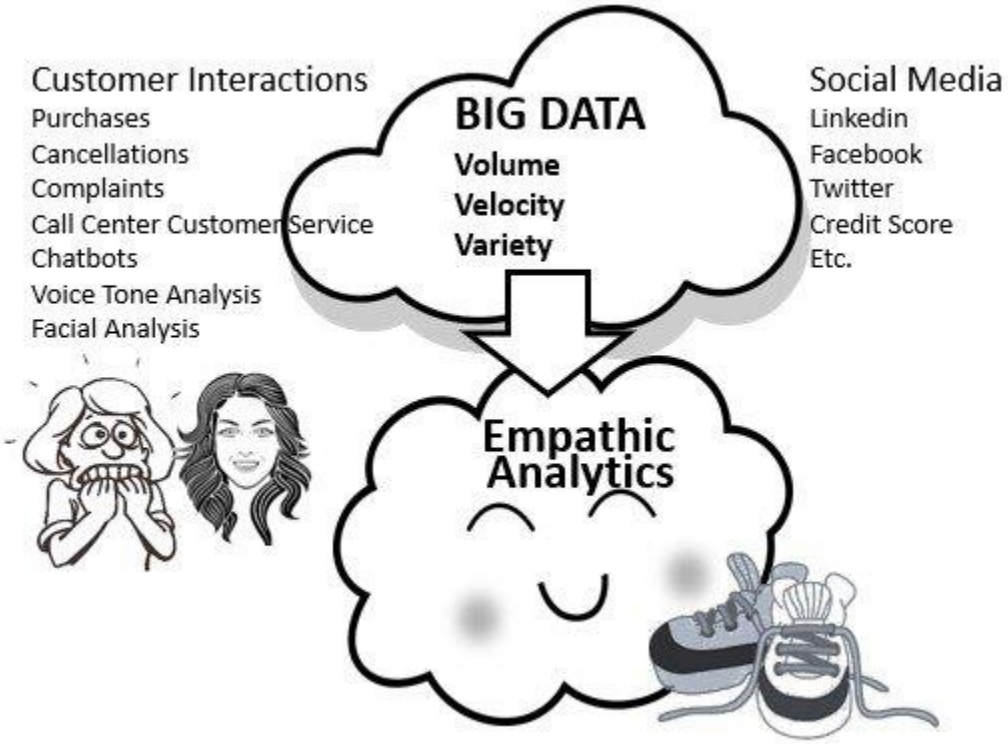
Then, in the 2000s, with machine power growing exponentially, came machine learning … on its own, with pioneers such as Geoffrey Hinton ("Godfather of Deep Learning") and his team at the University of Toronto. They used biomimicry of human neurons for backpropagation of errors and contrastive divergence.



If you wish, you can drill down on various approaches to machine learning by searching the following terms: Supervised learning, Unsupervised learning, Reinforcement learning, Self learning, Feature learning, Sparse dictionary learning, Anomaly detection, and Association rules.

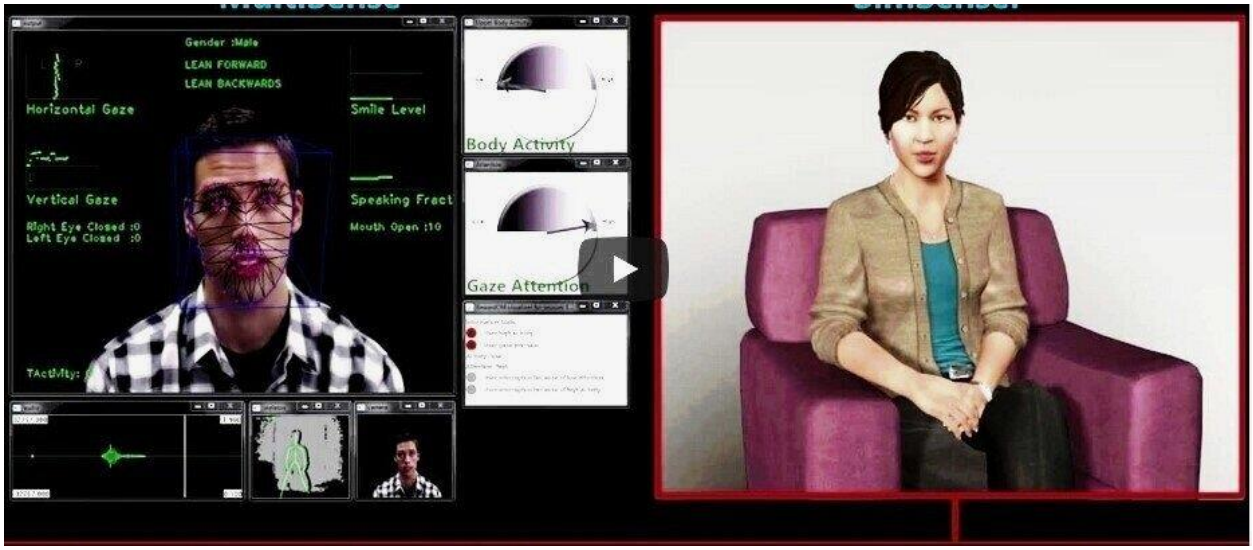
With Deep Learning, the AI hype cycle took off. But now, as stated above there is little growth in interest in AI. So, let's give AI a little empathy here, for now we've entered the **Third Wave of AI**. It centers on *affective vs cognitive computing*. EAI or Empathy AI is already among us with startups such as the one spun out of the MIT Media Lab and a BPM company that has a customer empathy advisor.

Transparency is key to helping customers better understand how AI works. Organizations must employ transparent AI where appropriate, which means their machines can explain exactly why a decision was made. For example, when someone applies for a credit card and is denied, the exact reasons are readily available.



How does all this work? It works through use of empathy. Again, empathy is defined as the ability to understand and share the feelings of another, or simply as "putting yourself in someone else's shoes." As shown in the diagram to the left, customer empathy requires Big Data, and advanced analytics. In short, stepping into someone else's shoes is neither a simple nor a trivial event.

To experience empathy in AI, meet Ellie. Ellie isn't real. She's a virtual interviewer created by a team of scientists at the Institute for Creative Technologies (ICT) at the University of Southern California. Watch Ellie, Ctrl Click here:
https://www.youtube.com/watch?v=ejczMs6b1Q4&feature=youtu.be



Source: The USC Institute for Creative Technologies (ICT), SimSensei & MultiSense: Virtual Human and Multimodal Perception for Healthcare Support

Development has been a collaborative venture with the U.S. Department of Defense's DARPA. Soldiers are known to place a premium on being tough, and many avoid seeing psychologists at all costs. This means that conditions such as post-traumatic stress disorder (PTSD), to which deployed military men and women are particularly prone, may become acute and dangerous before intervention occurs. Ellie shows potential to change things for the better by confidentially informing soldiers with symptoms of PTSD that she feels they could be a risk to themselves and others, and advises them on how to seek treatment. She may be an avatar, but she's great to talk to. Ellie introduces herself and asks a series of questions. A sensor and webcam scan the interviewee's facial and body movements and tone of voice, which prompt Ellie's verbal and nonverbal responses. She listens not only to the words, but also judges the tone and facial expression that accompany the words. Ellie is not meant to be a substitute for a real therapist. She's an empathetic decision support tool designed to gather information – and diagnosis and treatment decisions will still be made by human clinicians.

So, to keep this concise as promised, we'll stop here, only to say that we need to give AI its due, as it will change our civilization as much or more than the agricultural and industrial ages did. But we also need AI WITH empathy so that transparency and trust can be built between

users and providers, e.g., enabling customers to trust chatbots when interacting with them.

We live in the most interesting of times. We must keep in mind that *emotion* plays the strongest role in our decision making, more so than data and facts.

This thing we call empathetic AI is just emerging. To keep up to date, you can routinely search for "artificial intelligence + empathy," and click on News! A whole new world is shaping up. When you add in **AI Common Sense** (DARPA invested $1.9 billion researching it beginning in 2019) with **AI Empathy**, we approach Artificial General Intelligence (AGI), where AI becomes smarter than humans! And it's being the "smartest" that has thus far allowed humans to rule the world.

Oh my.

Author

Peter Fingar, independent analyst, internationally acclaimed author, management advisor, former college professor and CIO, has been providing leadership at the intersection of business and technology for over 50 years. Peter is widely known for helping to launch business process management (BPM) with his book, *Business Process Management: The Third Wave*. He has taught graduate and undergraduate computing studies in the U.S. and abroad, and held management, technical, consulting and advisory positions with GTE Data Services, American Software and Computer Services, Saudi Aramco, EC Cubed (for clients including GE TPN, American Express, Master Card and GE Capital), Noor Advanced Technologies, the University of Tampa, the Technical Resource Connection division of Perot Systems and IBM Global Services. He is a sought-after keynote speaker and his latest of 26 books include*: Cognitive Computing, and The Cognitive Internet of Everything (short book with 50 descriptive graphics) to bring understanding to your non-tech colleagues.*
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