Trust Algorithms!

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TrackMacro ™ is a software tool providing equity risk signals in 40 countries

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Most of us trust algorithms in predictive activities, including complex ones such as weather forecasting. But when trying to anticipate human behaviour, we surprisingly- and unfortunately – shy away from machine prognostication.

In a recent experiment conducted by the University of Pennsylvania*, participants were incentivized on successful prophecy. Prospective included, for instance, anticipating the professional success of MBA students from the start of their career. They could rely on their own, or another participant's judgment, or alternatively chose a tried-and-tested algorithm built by the university using identical data and parameters.

The experiment demonstrated that "seeing an algorithm perform (and therefore err) makes people less likely to use it instead of a human forecaster". The bias is observed even with those who have witnessed the algorithm outperform. Human chose human forecasters whomever they may be, before predictive machines.

The following graph illustrates the sharp decline of confidence in artificial intelligence for the sub-population (circa 54% of the population) that is initially equally or less confident in models than in humans.

Seeing a model make relatively small mistakes consistently decreased confidence in the model, whereas seeing a human make relatively large mistakes did not consistently decrease confidence in human abilities to forecast the future.

*Berkeley J. Dietvorst, Joseph P. Simmons, and Cade Massey: Algorithm Aversion: People Erroneously Avoid

Fig1. People Erroneously Avoid Algorithms After Seeing Them Err

% Choosing Statistical Model

% Choosing model at start % Keeping model at the end
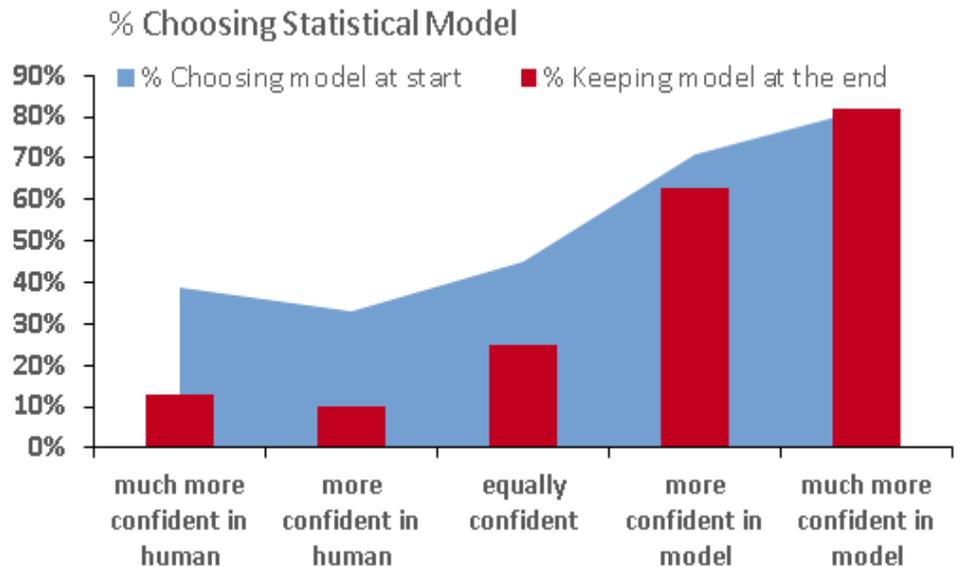
TrackMacro™, like any other algorithm in economy and finance, is confronted with this obstacle. The model makes small mistakes consistently, so that its accuracy rate hardly reaches 60%, but it avoids as well most of the large mistakes that humans could well make, hence its massive outperformance.

The trust bias in favour of humans could originate in the social nature of human beings, distorting preferences away from rational expectations. It could as well be fully rational and explained by one of the most important equations in mathematics—Bayes' theorem.

The theorem states that a human belief evolves in proportion to the degree of surprise, when confronting the belief to a series of live experiments.

People today tend to distrust algorithms because they have not been interacting enough with them. With the accumulation of experience, it is likely that the psychological human reluctance in dealing with machines will decrease over time.