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**From:** Joscha Bach <[REDACTED]>  
**Sent:** Wednesday, August 20, 2014 7:48 AM  
**To:** Jeffrey Epstein  
**Subject:** Alex Wissner-Gross  
**Attachments:** signature.asc

Dear Jeffrey,

the recent AGI conference in Québec was neat (I presented some research sponsored by the Jeffrey Epstein foundation), and I was treated to Alex' idea in the form of a keynote. (you sent this: [http://www.ted.com/talks/alex\\_wissner\\_gross\\_a\\_new\\_equation\\_for\\_intelligence](http://www.ted.com/talks/alex_wissner_gross_a_new_equation_for_intelligence) )

The attempt of selling  $F = T \nabla S t$  as the new  $E = mc^2$  is amicably bold, but might be a bit contrived. He presents his "causal entropic force" not only as a formula for intelligence, but also as a law for the development of the universe in general, as core ingredient to an algorithm to beat the stock market etc.

The main idea is not stupid: using maximization of future options is somewhat similar to Marcus Hutter's idea of AIXI (a theoretically optimal intelligent agent with unlimited resources). In practice, it is probably not what humans do; evidence suggests that people abhor uncertainty and try to avoid branching expectation horizons, i.e. they are willing to accept a smaller payoff if there are fewer possible outcomes involved. However, people are not so smart, of course.

In my view, Alex' theory has the more serious drawback of being not falsifiable: if we find that an agent or a system does not maximize future options, we can always change the frame of reference until they do. I imagine a chess playing program: you would not want to maximize future options, but go for the win in as few turns as possible. But then, winning the game might give you more options to advance in the tournament later on. In practice, it can be used as a learning/decision making rule in some cases; in others, there are better heuristics. In my view, it is not a silver bullet.

Alex is way too smart to not know that a non-falsifiable theory spells trouble, and he must have read the objections by Gary Marcus and others. I got a strong suspicion that he is deliberately selling snake oil.

I hope that you are well! I certainly am.

Cheers!

Joscha