

: *What is augmented decision-making?*

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People often make bad or "less" than optimal decisions. Do you think it would be great if a computer was providing advice and information in real-time relevant to decisions that you needed to make? Imagine a salesperson about to meet a prospective customer who could quickly read about prior interactions with the person or a manager with an intelligent assistant that provided reminders and decision-relevant facts. These are augmented decision-making scenarios. Augmented decision-making is the promise that if a person so chooses, then a computer can be companion, advisor and more on an ongoing, context aware, networked basis. In some ways these scenarios sound scary, what if a person can't "unplug" or is told to use augmentation.

In the most famous man vs. machine chess match, Chess Grand Master Garry Kasparov beat IBM's Deep Blue three wins, two ties and one loss (4-2) in 1996, but today's best chess programs would like defeat Kasparov. Today computer software has evolved to the point according to Wikipedia where "chess programs can now defeat even the strongest chess players". According to Ed Collins in a post at Chess.com, "Houdini, Stockfish, and Rybka are probably the three strongest chess engines available. Houdini and Stockfish are free." After loosing to Big Blue, Gary Kasparov invented a chess variant for augmented play where each human player can query their computer assistant for information, cf., Lemieux, 2011. There is evidence from these matches that the strongest or "best" chess competitor is a good human chess play assisted by an excellent chess software program. The human supported by computer software outperforms the computer software acting alone. The augmented human chess player makes better decisions and wins the match.

The idea of computerized decision support for individuals and groups of individuals has been discussed since the dawn of the computing era in the 1950s. Much has changed however since the initial systems of the late 1960s, today we are at the cusp of a revolution in human-machine interaction that will provide increasingly sophisticated computer-augmented decision making for individuals and teams. Using information and decision support technology to assist people as they interact with the "real" environment has been termed augmented decision-making or augmented reality. Supposedly augmenting human capabilities will enhance how we think and what we see, know, hear, feel and even smell, cf. <http://www.howstuffworks.com/augmented-reality.htm>. Google Glass and smart phones provide a means to augment human decision-making in real-time on the go. Google Glass is a prototype, wearable computer with an optical head-mounted display (OHMD), cf., Wikipedia and Goldman, 2012.

Is the promise of augmented decision-making persuasive. Once a person connects, can they really

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disconnect. Can a human being become dependent on real-time decision support. Will we humans stop thinking and doing our own research and simply turn to our computer assistant for advice and information? After enough positive experiences will we cease to question the wisdom and the correctness of the assistant's advice. Will our computer assistant become more than an "assistant". Human frailty is real. We develop addictions and dependencies. Dependence upon a computer advisor that is always with us pointing our things to do, providing information about people we meet and tasks we must complete seems overwhelmingly attractive. Yet that vision has a darker side. The side or vision of giving up or relinquishing our free-will. Will we choose to stop for a cup of coffee at Starbucks because we want to or will we be seduced by an ad pushed to us by our computer assistant or worse yet will our assistant implicitly choose for us and "advise" us to stop to rest and destress?

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