

Game intelligence can be learned

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Mike Weaver battling for the puck against Daymond Langkow, December 21, 2005. Credit: Wikipedia

New theories on game intelligence could change the world of team sports forever. Game intelligence is not necessarily something you are born with but something you can learn, according to the authors of the article "Game Intelligence in Team Sports". Co-author and former NHL player Nicklas Lidström embodies the evidence.

Through the use of mathematical statistics, individual players and teams can learn to prioritize during games to change the outcome. They can calculate how to act in given situations and, hence, improve their results - regardless of their physical capabilities. This according to research at Chalmers University of Technology and University of Gothenburg. Today, the article "Game Intelligence in Team Sports" is published in the scientific journal *PLOS ONE*.

Authors Carl Lindberg and Jan Lennartsson - the former an Adjunct Professor at Chalmers - carefully studied the moves of former NHL player Nicklas Lidström during games in an attempt to develop a mathematical theory on game intelligence in team [sports](#) - in this case ice hockey. Central to their theory was the thought that any game situation should be valued by its potential. They approached Lidström with their findings, and it turned out that his thoughts on how to best play a game concurred with their theory.

Lidström - perhaps the greatest defence player the world of ice hockey has ever seen - has long been known to have that "extra something" that makes him stand out in comparison to others. Excellent players like him are often praised for how well they read the game. However, in their article "Game Intelligence in Team Sports", Lindberg and Lennartsson try to show that it's not just genes that made Lidström great - but statistics. And the living ice hockey legend agrees.

Lidström confirms that as an active player he always tried to position himself so the odds would be in his favour. He consistently analysed the situations as they occurred during a game, learning when to dribble, when to engage, and when to sit put.

The article claims to have found ways to calculate whether certain moves from players during a game will bear fruit or not. The idea came about when Carl Lindberg started playing defence on a veteran's [ice hockey](#)

team. How should he think in order to become a better player? Could he somehow combine knowledge of the game with mathematics and statistics to improve his chances of success in the rink? The ambition was to find scientific principles for how to make the best move possible in any given situation - and not just "fight to win every situation".

After having studied Lidström's game, it became obvious to Lindberg that Lidström was not particularly big, neither extremely strong nor radically fast. Yet, he was often named "best player" - because he was always at the right place, doing the right things.

The article points out that Lidström used a set of principles when he analysed how to play in certain game situations. He relied not only on expertise and skills, but also on knowledge that it was often better to hold back than to charge for the puck, to pass the puck early and to avoid dribbling when on the last line of defence.

Moreover, in so called one-against-one situations, as a first line of defence, Lidström usually tried to create more room for himself, and, hence, improve his chances by reaching out his stick extensively against the opposing forward. Likewise, in two-against-one situations, he often relied on a defence strategy that differed from most other players' strategies; when most defenders decided to let go of the non-puck holding forward to focus on the puck-holding forward, Lidström never let any of them out of sight, knowing a pass could come at any time, resulting in a goal.

As most sports statistics tend to focus on how things are now, at a certain point of time, "Game Intelligence in Team Sports" focuses on how things could be done in the future. The idea behind the article is simple - but the results are far from. The study of statistics and game theory in dynamic game situations is a brand new field - a field that is looking promising for the future of [team sports](#).

More information: "Game Intelligence in Team Sports" *PLOS ONE*,
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