

(1) The Math Behind Successful Relationships

Tool quantifies couples' interaction during an argument—and predicts who will divorce

By *Jo Craven McGinty* The Wall Street Journal: Feb. 8, 2019 7:00 a.m. ET



(2) A team of professors found that marriages typically fall into five categories: validating, volatile, conflict-avoiding, hostile and hostile-detached.

<https://www.wsj.com/articles/how-do-i-love-thee-a-mathematician-counts-the-ways-11549627200>



(3) Nearly 30 years ago, a mathematician and a psychologist teamed up to explore one of life's enduring mysteries: What makes some marriages happy and some miserable?

(4) The psychologist, John Gottman, wanted to craft a tool to help him better counsel troubled couples. The mathematician, James Murray, specialized in modeling biological processes. It was a match made in heaven.

(5) The pair decided to create a mathematical model to quantify how couples interact and influence each other during an argument. The results helped Dr. Gottman visualize the dynamics of a marriage and measure the impact of therapy.

(6) The approach also proved to be shockingly accurate at predicting which couples would divorce.

(7) “We got actual numbers we could compute,” Dr. Gottman said. “We could see how the partners influence each other.”

(8) Their subjects initially included 130 couples who had applied for marriage licenses in King County, where, at the time, the professors taught at the University of Washington in Seattle. (9) Some of the couples were newlyweds, others were about to be married, and each pair was videotaped for three 15-minute conversations.

(10) In one exchange, the couples were instructed to talk about their day. In another they were told to talk about something positive. And in the third, they were asked to talk about something contentious. (11) The topic didn't matter—it could be about money, sex, food, in-laws or anything else—as long as they disagreed.

The contentious exchange proved to be the most predictive.

(12) The couple's interactions were scored by two independent observers who rated every emotion in the exchange.

Altogether, 16 different emotions were coded. (13) At one end of the spectrum, contempt, the most corrosive emotion, according to Dr. Gottman, was scored -4. At the other end, shared humor, one of the best ways to defuse tension, he said, was scored +4.

(14) "They both have to be laughing together," Dr. Gottman said. "A lot of contempt happens with one person laughing and the other person looking stunned. That's a minus 4."

(15) The scores for the various emotions expressed during each exchange were summed, and the researchers plotted the scores for each subsequent exchange as a time series on a graph.

(16) Once the emotions were scored and plotted, the researchers found that the positive and negative progression of the exchanges eventually settled down and didn't change very much.

(17) That steady state, they concluded, described how a couple resolves conflicts.

"It's like a Dow Jones curve," Dr. Murray said. "The ones that went continuously down, it was clear they found it very, very difficult to appreciate what the other one was thinking. (18) That's what made it clear the marriage wasn't going to last."

(19) For low-risk couples, the ratio of positive to negative responses was approximately 5 to 1. For high-risk couples, the ratio was about 1 to 1, and based on their observations, the researchers were able to predict divorce with 94% accuracy.

(20) The researchers followed the couples for a decade, and in that time, all of the pairs they predicted would divorce did, most within four years. A few other couples they predicted would remain married, though unhappily, also divorced, lowering their overall accuracy.

(21) Marriages, they found, fell into five categories: validating, volatile, conflict-avoiding, hostile and hostile-detached (a significantly more negative pairing). (22) Only three—validating, volatile and conflict-avoiding—are stable, they write in their book, but a volatile marriage, though passionate, risks dissolving into endless bickering.

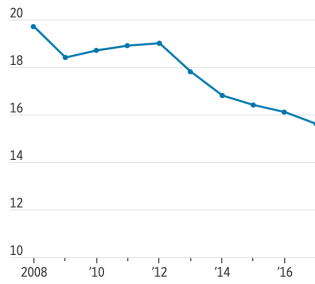
(23) Notably, they also found that as the years passed, each couple's style of communication changed very little from that initial videotaped contentious exchange.

(24) "We found about 80% stability in couples' interaction over time," Dr. Gottman said, a result that was based on bringing the couples back to the lab for additional scored discussions, usually at three-year intervals.

Unhappy Endings

Divorces in the U.S.

22 divorces per 1,000 married people



Source: Census Bureau

(25) Dr. Gottman and Dr. Murray have since published their work in the book “The Mathematics of Marriage: Dynamic Nonlinear Models.”

But if they were to boil down their work to one simple strategy for couples, it might be this: Face each other when talking. And acknowledge your role in the dispute.

“If they listen to each other,” said Dr. Murray, who’s been married for 60 years, “they might have a different future.”

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