

# Study finds gender bias in sports journalism

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"That was a great game! How's your love life?"

A perplexing question, in more ways than one, to ask an athlete. But it happens, and it's worse for women, according to Cornell researchers. A computer analysis of several thousand interviews with tennis [players](#) shows that in post-game press conferences, female players are asked more questions not related to the game.

Words that come up in questions asked of males might include clay, challenger(s), sets, practiced, volley, shots, server(s), tiebreaker. While in interviews with women we might hear nervous, improve, seed, friends, mom, meet, fight, father, thing.

Rather than subjectively judge themselves whether specific words like "fight" are game-related, the researchers trained a computer to compare the interviews with a model of game-related [language](#). Since the analysis is based on comparing word usage it is not dependent on subjective human judgment, they point out.

"We are using statistical information to discover what is out of context, circumventing the need to rely on subjective judgments," said Cristian Danescu-Niculescu-Mizil, assistant professor of information science. "That's what I find most exciting about this methodology."

He and colleagues reported their study at the 25th International Joint Conference on Artificial Intelligence, July 9 in New York City. Their paper, "Tie-breaker: Using language models to quantify gender bias in

sports journalism," was presented in the "Natural language processing meets journalism" workshop and earned the Best Paper Award. Co-authors are computer science Ph.D. student Liye Fu and Lillian Lee, professor of computer science.

The researchers compiled a database of postgame interviews for tennis singles matches played between 2000 and 2005, amounting to 6,467 interview transcripts and 81,906 question snippets posed to 167 female players and 191 male players. To create a model of "game-related" language, they used live play-by-play descriptions from 1,981 games played by each gender. They trained a computer to look for language patterns that were common in the game descriptions.

Comparing these patterns with the language used in the interview questions, they assigned a "perplexity score" to each question. In everyday language, perplexity refers to how odd something appears. In mathematics, it measures how low the probability is of something happening the way it does. Perplexity scores for questions asked of women were significantly higher than those for males, indicating that women were being asked fewer game-related questions. This held true in several different situations, including whether the player had won or how highly ranked the player was – although the difference was a bit greater with lower-ranked players. The same difference was apparent in "off-the-wall" questions as well as in those that are typical in post-match interviews.

The researchers point out that so far they have looked only at tennis and have not controlled for several other factors, such as who's asking the questions. They would also like to examine the players' answers.

The study was inspired by the "Cover the Athlete" movement, which seeks to persuade journalists to stick to the sport and not veer off into players' personal lives.

**More information:** Tie-breaker: Using language models to quantify gender bias in sports journalism. [arxiv.org/abs/1607.03895](https://arxiv.org/abs/1607.03895)

Provided by Cornell University

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