Research finds poor math skills affect legal decision-making

4 April 2013, by Phil Ciciora

(Phys.org) —The stereotype of lawyers being bad with numbers may persist, but new research by two University of Illinois legal scholars suggests that law students are surprisingly good at math, although those with low levels of numeracy analyze some legal questions differently.

According to research from Arden Rowell and Jessica Bregant, there is a "highly significant relationship" between law students' math skills and the substance of their legal analysis, suggesting that legal analysis – and by extension, legal advice – may vary with a laywer's native math skills.

"What the research shows is that math matters to lawyers more – and for different reasons – than people have realized," said Rowell, a professor of law and the Richard W. and Marie L. Corman Scholar at Illinois. "People are only now starting to pay attention to the fact that lawyers and judges who are bad at math can make mistakes that ruin people's lives. That implicates numeracy as a neglected but potentially critical aspect of legal education, because it's not something that law schools have traditionally focused on when selecting students."

Rowell, who co-wrote the paper with Bregant, a research associate with the College of Law at Illinois, says the research suggests that the effect of math skills doesn't stop there.

"Even when lawyers aren't making obvious math mistakes, their understanding of the law may be fundamentally different based on how good they are at math," she said. "In other words, clients may not get the same outcome when they bring identical cases, simply because the attorney they hire – or the judge they face – has high or low numeracy."

Right now, most law schools pay very little attention to numeracy, Rowell says.

"In fact, at many law schools, students with quantitative or science backgrounds actually face a disadvantage getting into law school," she said. "Our research suggests that this is a dangerous system.

"And I'd add that clients should start paying attention to their attorney's math skills as well. Just by asking an attorney three simple math questions, we could predict how they would answer legal questions, which ought to create concerns about the quality and consistency of legal decision-making."

According to Rowell, the paper represents the first empirical study of how numeracy affects legal decision-making.

"Based on this study, it looks like there is a difference in how law students analyze legal questions based on their math skills," she said. "That said, we don't know which group is doing a better job at legal analysis – the ones who are good at math, or the ones who are bad at math. We just don't know yet whether people who are bad at math are actually worse at law."

There are many different types of decisions that laywers make, and many of them involve predicting other people's decisions, Rowell says.

"For example, if there are questions about how likely a client is to be found negligent if they failed to take a precaution, an attorney hearing the facts in that case has to think not only about the law but also about how judges and juries make decisions about the law," she said.

So it could actually be that people with low levels of numeracy do a better job at predicting everyone else's decision-making.

"If judges or juries also have low math skills, it could be that attorneys who are less good at math

are the more accurate predictors," Rowell said. "But we need a lot more research about numeracy and legal decision-making before we can tell for sure."

Prior research has found that people with poor math skills have a whole host of decision-making issues – they are more subject to cognitive bias, and more likely to be "fooled or tricked by the way things are presented to them," Rowell says.

"If this is also happening with attorneys – well, you don't want an attorney who is easily fooled by framing effects," she said. "You don't want an attorney who's easily hoodwinked by cognitive bias. When you add to that the stereotype that attorneys are bad at math, I start to get very anxious."

But when the findings were compared with legal analyses performed by general members of the population, who had no legal training, the researchers found that lawyers were less susceptible to cognitive bias regardless of their numeracy level. Rowell speculates that law students could be more resistant to framing effects and biases either because of the effects of legal education, or because people who become lawyers are naturally skeptical.

"People who decide to become lawyers are also people who like to read the fine print, people who naturally ask, 'What's hidden? What's the catch?' " she said. "And so that kind of thinking may be essentially a protection from cognitive bias."

But prediction skills alone don't necessarily make or break a lawyer.

"Attorneys also need social skills, the ability to connect with people, to persuade and to advise – skills that so far seem to have little or nothing to do with numeracy."

The article, "Numeracy and Legal Decision-making," is available online.

Provided by University of Illinois at Urbana-Champaign