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It's October and graduation is in the air!

I attended the ceremony for graduating Dalhousie students at the beginning of the month, and as I sat, boiling hot in my black robe, I found it a great opportunity to reflect on the students I've taught and supervised over the years.

It also took me back to my own graduations, where my math class voted me Most Likely to Talk to a Woman.

You might think there is very little left to be done new, mathematics-wise, but you would be wrong! There are always new projects to undertake and new applications to uncover. It's still such a thrill to be standing with a student or colleague, at a whiteboard, sweating over the problem at hand, only to finally find an insight that makes it all unravel.

That is what I think is missing most in the mathematical education of young ones — the excitement of mathematics as it unfolds, and appreciation of a new idea for its beauty alone.

I remember hearing about a new game that someone in New Zealand created. It goes like this. You, I and a mutual friend, say Angela, each have a coin. We each show one side of the coin, either by tossing or by choice. If all three coins show the same side, heads or tails, it's a draw and we play again. If not all three coins show the same side, then the two whose coins show the same side lose, and the one who stands alone wins. So if Angela and I both show tails on our coin and you show heads, you win.

By flipping the coins, we tie two out of eight times (getting all heads or all tails), and two out of eight times each of us wins. (You win if you show tails and both Angela and I show heads, or vice versa.)

It doesn't seem like we can do much better than win two out of eight, or one-quarter of the time, right? After all, coin-tossing seems just as good a process as any when we don't know what will happen on the other coins.

But here is the rub. What I choose to do is to jump the gun and put down my coin first. Say I put it down as heads. Then you and Angela have a problem. If you decide to show heads, you lose, and Angela realizes the same thing. So your only realistic option is to put down tails and hope that Angela puts down heads. Angela realizes the same thing and you both show tails, and I win. I've improved my chance of winning to 100 per cent!

But it's even more subtle than that. Once I've jumped the gun, you have one more idea. You beat out Angela and show the opposite, tails, to what I've shown. Then Angela can't win, but she does get to choose who of you and me wins, and it seems that now both you and I have a 50-50 chance of winning. Not for certain, but certainly better than the one-in-four chance we had to begin with.

So the strategy is all in the making of deft choices when it seems that randomness would be the way to go. How interesting, and perhaps something we can look for in our everyday decisions!

And that's the kind of twist in reasoning that makes mathematics fun. With a lesson like that, move to the head of the class!

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*About the Author*

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