## Journal of Humanistic Mathematics

Volume 7 | Issue 1
January 2017

## Ladies' Night

Robert Dawson<br>Saint Mary's University - Canada

Follow this and additional works at: https://scholarship.claremont.edu/jhm
Part of the Arts and Humanities Commons, and the Mathematics Commons

## Recommended Citation

Dawson, R. "Ladies' Night," Journal of Humanistic Mathematics, Volume 7 Issue 1 (January 2017), pages 293-302. DOI: 10.5642/jhummath.201701.28 . Available at: https://scholarship.claremont.edu/jhm/vol7/ iss1/28
©2017 by the authors. This work is licensed under a Creative Commons License. JHM is an open access bi-annual journal sponsored by the Claremont Center for the Mathematical Sciences and published by the Claremont Colleges Library | ISSN 2159-8118 | http://scholarship.claremont.edu/jhm/

The editorial staff of JHM works hard to make sure the scholarship disseminated in JHM is accurate and upholds professional ethical guidelines. However the views and opinions expressed in each published manuscript belong exclusively to the individual contributor(s). The publisher and the editors do not endorse or accept responsibility for them. See https://scholarship.claremont.edu/jhm/policies.html for more information.

# Ladies' Night 

Robert Dawson

rdawson@cs.stmarys.ca

The sun was setting and the neon was coming out overhead as I sashayed into the Platinum Horseshoe. It's a small bar by Vegas standards, maybe two hundred seats and a double handful of slots, no floor show. Behind the bar, Tessa was taking a tray of steaming beer glasses out of the power washer and setting them aside to cool.
"Hi, Tessa!" I said. "Busy tonight?"
She looked over my low-cut ice-blue evening dress. "Well, if it isn't "Lady" Jane! What brings you here?"

I winced - that nickname is not for public use - but nobody was close enough to overhear. And Tessa wasn't about to put her tip - twenty percent of my take at risk. "Haven't you heard? There's a big conference in town."

I know what you're probably thinking, but no. Sure, in some ways it would be easier. Among other things, in this state, hooking's as legal as driving a taxi, while my own job does not have the Nevada State Government Seal of Approval. But when Maddie gets a bit older, and finds out how I pay for her cornflakes and ballet lessons, I'd like her to think of her mom as a card player rather than a hooker. Wouldn't you?

So, I'm a freelance instructor in probability theory and applied psychology, and I planned to teach plenty that week. Of course, the PhD's there would already know as much as I did about the probability theory-okay, more. Lots more. That's where the applied psychology comes in.

There's a reason they call me "Lady", and it's not my sweet personality and impeccable manners. I'm one of the few female broad-tossers in Vegas-which means my usual racket's a little game called Find-The-Lady. Maybe you know it as Three Card Monte. I didn't reckon sophisticated folks like statisticians would fall for my usual spiel. But I had a brand new angle worked out, and Christmas was about to come early.

Tessa poured me a double, on the rocks, from one of the special bottles she kept for thirsty working girls. The label was for a fancy single-malt Scotch, the contents cold tea with a dash of lemon syrup. If a mark had been buying it for me, he'd have paid twenty bucks for the label, and I'd have got half, same as the hookers do. Buying for myself, it was a dollar. Trade rates. Tessa's fair.

I took it, sipped, and pretended a connoisseur's delight in a rare old brand. Tessa rolled her eyes, get-on-with-you. I grinned and began to check the place out for conference nametags, starting with the bar. I ignored the ones who were talking, pecking at laptops, eating. That man two seats down? From the way he was talking to his phone, he'd be gone in five minutes.

There was a likely mark beyond him, though, a woman, maybe ten years older than me. Looking at the menu, sipping at her white wine a little too often, smile stuck on like a post-it note. I watched her for a while and tried to imagine her thoughts. In this business you have to be good at that. It's all about people.

I started to get vibes: lost, lonely. She'd been speaking to somebody after the last talk, not hitting on him, but they were talking about something interesting and he would have been good company. But he already had dinner plans-and by the time she got away, everybody else had gone. So now she's sitting here, reliving every high school dance she didn't have a date for...

Look, if I could really read minds I'd have retired rich. Maybe it was a woman she was speaking to. Or perhaps she'd just got out of the last talk busting for a pee, and when she got back, people had left without her. But this much I knew: she was separated from the herd, she was vulnerable, and Mother Wolf had a cub to feed.
"Excuse me, is this seat taken?" I asked
She glanced at me. "Oh, no. All yours," and hid herself in the menu again.
For a while, I sat there quietly, sipping my drink and contemplating my own problems. After a while, I opened my purse and rummaged purposefully. Finally I turned to her. "Excuse me? Do you have a Midol or something on you?"
"Probably-let me see." She looked, and produced a half-used card of caplets. "Sorry, they're the daytime variety-will they keep you up?"
"That'll be fine," I said. "I live on Vegas time: I don't go to bed before one most nights. Of course, I still have to be at the office at nine, but that's what coffee and eyedrops are for, right? By the way, I'm Jane." I took one, washed it down with the dregs of my cold tea, and made a very discreet signal to Tessa. I'd make sure "Barbara" bought the next round, and my kickback would pay for this one.
"Barbara Sinclair." Her hand twitched toward her name tag.
"So you're here with that convention? Jay Ess Em?"
She smiled. "We call them conferences, but yes. It stands for Joint Statistical Meetings."
"Statistics?" I asked. "That's like, probability and stuff?"
"That's right. And how to use it to analyze data and make decisions."
Tessa brought the drinks: one glass of white wine, one of my specials. As arranged, it was Barbara she spoke to. "Excuse me, ma'am, but one of the gentlemen over at that table there asked me to bring these over for you and your friend." She gestured toward the far end of the room.

Barbara didn't move to take her glass. She looked at me. "I don't know. Do you think. . .?"
"Barbara, this is Vegas." I said. "You're here to have fun." I turned to Tessa. "He didn't send a phone number or anything?"

She shook her head. "No, ma'am."
"See?" I told Barbara. "If he'd sent a hundred-dollar bottle of champagne, and a room number, then you'd have had a decision to make." I turned, touched two fingers to my lips, and blew a fast kiss in the general direction that Tessa had indicated. Half a second later Barbara gave me a tight I'm-really-going-to-do-this smile, spun her barstool around, and waved, once tentatively, once again more boldly, to the same corner of the room. She spun back nervously triumphant.

She leaned towards me. "Which one d'you think it was?" she asked, with a conspiratorial grin.
"Maybe that one in the blue jacket?" I pointed to a man, eating with three others, about my age. They all looked as if they might be with the conference.
"Oh, I hope so. He's kind of cute," she said, and chuckled. Her eyes wandered to the mirror behind the bar, sneaking a glimpse of the sort of woman that handsome strangers buy drinks for in Vegas.

We clinked glasses. "Here's to your secret admirer," I said.
She smiled. "Maybe he's got a friend."
"By the way, you're a real lifesaver," I said. "I'm feeling better already."
"Placebo effect," she said, with a laugh.
"Is that something from your work?"
"Sort of."
"Neat. So you know all about odds and that sort of thing?"
"Well, I use probability in my research."
"So I bet you're going to clean up at the blackjack tables while you're here?"
She just laughed. "No, I'm not much into that kind of thing. I'm more into the mathematical side of it."
"Then maybe you can help me with a puzzle one of my girlfriends told us at the office." I said. "See, there's this game show, okay? And you have to choose between three doors, and one of them has a car behind it and the other two are goats. But when you choose a door, the host, she said he was called Monty Python or something, he doesn't open that one. Instead he opens another door, not the one you chose, and that door's always one with a goat behind it. And then he offers you the choice: you can stick with the one you picked first, or switch to the third one, the one he hasn't opened. And you get whatever's behind the door you choose."
"The Monty Hall problem," she said.
"Monty Hall, yes! That was it. So you know this one? Lisa says you ought to switch, but that's bullshit, right? It wouldn't make any difference, would it?"
"Well, actually-it does improve your chances if you switch."
"No way! When you make your final choice, there's only two closed doors. And you don't know what's in either, so the odds have to be the same. Right?" I tapped my finger on the rim of my glass.

She took out a pen, drew a diagram like a tree on a napkin, and wrote numbers on it. I told her I was sorry, but I didn't understand. She tried to explain conditional probability to me. I sat there, finger on my cheek, with my lips pursed, slowly shaking my head. Finally, when it seemed she was about to tear her hair, I put my hand up, palm out, like a traffic cop.
"Look, Barbara. You say the odds are two to one if you switch. Show me. I've got my solitaire deck in my purse." I searched, and found it. "We'll use three cards from that. I'll be the hostess, you be the player. I bet you can't do better by switching."
"I bet you I can."
"How much?"
"I don't want to take your money, Jane."
I grinned. "This is Las Vegas. Betting without money is against city bylaws and the local religion. Ten bucks a try?"
"Well, if that's what it takes to convince you. Tell me when you've had enough."
"Okay, but let's go to that booth over there. It's too noisy here near the slots." It's my deal with Tessa - she turns a blind eye, but I have to make it easy for her.

We sat down, and I slid the deck out of the box. "Right. We need three cards. What card do you want to be the car?"
"Doesn't matter." Suddenly she smiled, and laughed. "Oh, I know! An eight! Because an eight on its side is an Infiniti."
"Huh? Oh, I get it! That's clever. Okay, an eight of diamonds for the car, and two jokers for the goats." I picked them out of the deck, making sure to fumble a few cards in the process. It doesn't pay to look too experienced. I made the third joker (this was $m y$ deck of cards, and I happen to like jokers, okay?) disappear much more skillfully, and shuffled the other three cards thoroughly.
"Okay, Barbara. Now I'm going to be the hostess"-I gave my best toothpaste smile - "so I have to know which door's which, right?" I looked at each card as I laid it face-down.

I gestured at the three cards. "So, madam: which door do you choose?"
She pointed to the middle one, the eight. "That one."
I turned up the joker to its left. "Well, it's just as well you didn't pick this one! Unless you really like goats, of course. But now it's time to decide: do you want to switch to the third, the mystery door?"

She smiled. "Of course. Like I told you, the odds are two to one against if you don't switch, two to one for you if you do." She turned up the other joker, grimaced, took a ten-dollar bill from her billfold and handed it over. I peeked her poke as she took the bill out and decided she was good for a while.
"Aw, tough luck, Barbara-admit I was right?"
"No, too small a sample! Lay 'em out again. And we need more drinks."
We kept playing. Once or twice I even let her shuffle and lay them out herself. I didn't make a big thing out of it, just made sure she'd remember that she had. For a while the cards ran her way, and she won back her sawbuck and several of mine besides. "Do you believe me now, Jane?" she asked.
"Nope. That's just luck. Bet you can't keep doing it."
True to her theory, she switched every time, but the pretty diamond-red Infiniti proved to be elusive. Not surprising: much of the time, it was parked peacefully in my lap under the table, where nobody would disturb it, while she chose between three identical jokers. I may be a card player, but gambling isn't one of my vices. Slowly the money piled up on my side of the table.

Most of my marks believe in luck. They knock wood, rub rabbit's feet, talk to the cards and think the deck is 'hot' or 'cold'. I've played with so many of them that I could string them along in my sleep. This was going to be different: Barbara's language was logic and mathematics. I watched her face carefully.

At first she played with a confident smile. I could practically hear her thoughts. I'm losing a few games. I am an educated woman, a statistician. I believe in probability theory. I believe that the cards have no memory. And I have faith that in the long run the two-thirds probability will work in my favor. Forever and ever. Amen.

Slowly the smile faded. She brushed her hair out of her eyes, and began to nibble distractedly at a thumbnail. Her lips moved. Was she counting her wins and losses? I hoped so. I was feeding her about one win in three - not regularly, but at random. Would she notice? She frowned and bit her lip. Eighteen wins in fifty hands, it should be about twice that. Was that what she was thinking? She moistened her finger in the condensation on her wineglass, traced a few lines on the tabletop-the same tree diagram that she had drawn for me. I've had a few drinks, I'm jet-lagged: could I have made a mistake? Have I been getting it wrong, all these years? No, that's impossible. What am I doing wrong?
"I don't know, Barbara," I said. "It didn't seem to me that switching would help. Maybe it really doesn't?"

She said nothing. I laid the cards out. She indicated the same one as before, the one on her right, with the same listless gesture of her hand. I turned one of the others over. "Do you still want to switch?"
"Yes," she said, her voice as flat as a guilty plea. Her shoulders sagged, and her eyes were focused somewhere far beyond the walls of the booth: sheer stunned bottom-dropped-out-of-the-world disbelief, like when you've just finished putting your daughter to bed and your husband tells you out of a blue sky that he wants a divorce. Why have you forsaken me? She turned up the joker, and passed over a fifty. I made change, and we began again. The eight just stayed in my lap. There was no point letting her win any more: she was beyond noticing.

She was down a little more than five hundred bucks when my instincts told me it was time to quit. "Okay, Barbara. Had enough?" I asked.

She looked at me grimly, without moving or speaking. For the first time since we'd started I could read nothing in her face.
"One more hand. Double or nothing," she finally said through clenched teeth.
I was so surprised that I almost asked her if she was sure. Just about anybody can be a mark with the right setup, but Barbara was turning out to be a sucker of the sort that we only dream about. "Okay," I said. "One more hand, for five hundred and twenty dollars."
"You'll have to wait a moment," she said. She took her purse and went over to the bank machine by the slots. A couple minutes later she was back with a roll of bills in her fist. She peeled off ten fifties, one at a time, added a twenty, and slapped the money deliberately onto the table. "There." Her hand was trembling as she put the rest of the money back in her purse, stood the purse on the table beside her. I guessed this was her first experience of high stakes gambling. Probably her last, too.

I shuffled the cards and laid them out: one, two, three. "Ready, Barbara? Last hand of the night. For our jackpot prize: which door is the car behind?"

She brought her hand up from under the table and pointed. "That one."
But she was pointing past it, pointing at me. Pointing with something shiny. Oh, sweet Jesus! It was the barrel of one of those tiny handbag pistols. Her hand was shaking enough that it wasn't clear which of my breasts would be ruined if she fired, but that was the general direction she was aiming in.

They say those pistols are useless beyond about ten feet-well, she had about seven feet of change coming to her. Without turning my head, I tried to visualize the sightlines. Unless Tessa walked right over here, she wouldn't see anything. No one else was in sight either, and the barrel was so small, like a fat silver pen, that if somebody did walk past and happened to see it they might not realize what it was. By the time they heard it, it would be too late for me.
"My husband's from Texas, did you know? They carry guns a lot down there. When he made me bring this to Vegas I thought he was crazy," she said in a voice as unsteady as her hand. "Keep your hands where I can see them, Jane. That's my card, the one in the middle. Please don't touch it-don't touch it, I said! It's mine, and just this once I'm not switching. Turn the other two over for me, Jane, will you? Slowly, please."

Was she bluffing? Or was she stressed enough to do something stupid? I knew I couldn't afford to find out. Since the Ratfink took off, I'm the only parent Maddie has left. Slowly, carefully, with no sudden movements, I reached out and turned over the card on the left. Then the card on the right. Both jokers, of course.
"Well, that's a nice surprise! If those two are the jokers, I guess mine must be the car, mustn't it? So please pass me my money - nice and slowly, Jane, as you can see I'm a bit nervous so don't make me jump! Thank you." She took my heap, added it to her stake, and put the money into her purse. Her hands were still shaking.

She took a deep breath. "Now, in a minute or two, when my nerves are calm again, I'm going to put this away and leave quietly. And you're going to sit here and finish your drink. I'm sure you realize that starting a fight would get you banned from every hotel bar in town, and that's worth a lot more to you than what you didn't win tonight. Isn't it?"
"You just held me up!" My mouth was hanging open. I closed it.
"Did I? The gun hasn't been fired. It's my gun, so it's expected to have my fingerprints on it. I'm licensed at home for concealed carry, and Nevada recognizes my permit. And you don't want to draw attention to yourself. Think about all of those things very carefully." The gun was still pointed at me, screened from public view by her purse.

Keep her talking. I shook my head. "Never play cards with a woman called 'Doc.' Do they teach this stuff in the statistics department?"
"Sort of. We call it game theory."
"You'll forgive me for asking, Doc, but do you always use heat when you're losing? Or just when you get suspicious?"
"Jane, Jane. You had me rattled for a while there-"
"Don't blame yourself. You were meant to be."
"But when I realized what was up, I used Bayes' theorem to estimate the odds. Maybe at the beginning I was ninety-nine percent sure that you were honest."

I grimaced. "Probably not a good estimate around this town."
"Okay, I was naïve. But I should have been winning two hands out of three, and I was winning about one. So, to skip the arithmetic, for every three hands like that, the odds ratio on your cheating doubled. After sixty hands it was something like ten thousand to one: I knew you were cheating."
"Bayes' theorem. Game theory. I'd love to know stuff like that."
She opened her eyes a little wider: surprise, maybe even a bit of respect. "Jane, if you're smart enough to make a living doing what you're doing, I'm sure you could get a degree in stats. It's not the best job market right now-but you could think of combining it with information technology or something. Data mining's hot these days. Seriously, you should switch careers." The gun didn't move, but her shoulders relaxed a little.
"I'm a single mom. I need to work."
"My university encourages mature students. We have good subsidized childcare facilities."

I was silent for a moment, running through my options. "Barbara?"
"Yes?"
"I hate to ask you this, but while we're on the topic, could you leave me with fifty bucks for Maddie's babysitter? I didn't come out with a lot of money, the cash machine and me aren't friends right now, and - you know how it is? Reliable sitters are hard to find, and if I stiff Serafina tonight..."

She pulled a face. "Yeah, I do know how it is. Graduate school was like that for me sometimes." With her left hand she counted five bills onto the table. She hesitated, and added a business card with the name of a well-known New England university on it. "Good luck, Jane." Then she looked at the tiny pistol, almost puzzled, like she had never seen it before, and slipped it back into her purse. She went to the bar, paid her tab, and walked off silently into the crazy kaleidoscope that is Vegas at night.

The sound system was playing an elevator-music cover of "Do You Know Where You're Going To?" For a while I just sat there with my chin cradled in my hands, feeling my stomach unknot, watching the last of my ice cubes melt, wondering where it had all gone wrong. Was Barbara right? Should I switch?

I picked up the five sawbucks and thumbed through them carefully. They were all genuine, I hadn't got any of my counterfeit ones back, so I was still ahead, though not by much. I picked up the business card and tore it, meditatively, into tiny shreds.

