NO, REALLY — I'M ON YOUR SIDE.

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I took on a gig as a consultant recently, from which I am still learning things.

The engagement involved meeting with the advertising agency serving a lottery. The purpose of the first meeting was (I thought) to review with them how we were going to measure their progress toward goals that had already been agreed upon. The "how" involved mathematical modeling.

I had no idea of the fun in store as I rode the elevator up to their stylish office suite.

I was shown to a meeting room with a grand view out over the city, where six people were already loosely assembled. "And here's Dr. Wade" was the introduction.

A tall, elegant woman glided toward me, gave me her hand, and spoke her name: "Veronique." By the way others oriented to her, I gathered that she was the leader. The others gave their names in quick succession. A young woman called Jade bounced over to join us.

"We are expecting the Lottery people any moment," said Veronique. "They were held up in traffic. So tell us, Dr. Wade- what is your background?"

Now, I have found that it is a good for me to briefly explain, early on, that my Ph.D. is in biology, and that most of my work has been in working out ways to measure things. That way, people can think of me as a measurement specialist. In this loose assembly, though, and since the Lottery people might be a while arriving, I took a more expansive approach.

"Oh, I've been doing modeling since I was in graduate school. I've found it to be a really useful skill- a great way to get things out in the open."

The younger people in the room seemed to pause and give us their full attention. Their leader seemed to find more meaning in my remark than I remembered putting there.

Jade smiled brightly as she said, "You probably know, then, that some of us have done modeling too."

This made me feel quite awkward, because in fact I did not know of their work. Those of us who labor in arcane fields know that we will never be famous, but we do appreciate being recognized by the handful of people who share our interests. I hate to disappoint a peer in this way.

"I confess I don't know your work as well as I would like to," I said. "Which should I look at first?"

Often we have some publication we can point to that makes us feel good about our craft, and it is perfectly acceptable and nothing like bragging to point it out. Veronique hesitated.

Jade picked up the thread. "Veronique was dreamy in the 1985 Victoria's Secret catalogues," she said. "I'm sure I can find a few frames from that."

Veronique returned the admiration graciously. "Jade has a style that is sportier," she said. "I really admire what they have done with Title Nine. But you must have quite a niche if you have been modeling since graduate school?"

I was about to utterly fail this test of poise when I was saved by the arrival of the Lottery contingent.

Introductions were made all around, and I avoided for the moment being exposed as a poseur rather than a model.

Up to this point, I realized, my hosts thought that my remark about modeling had been just small talk meant to show an appreciation of their own past accomplishments. I wanted to keep that completely undeserved positive halo. I hoped that if I just avoided using the words "model" and "modeling," my opening remark would be forgotten, as small talk often is. Still, I needed to explain my role in the work we were going to be doing. I drew my Lottery contact aside and said: "When it comes to my part, let's just say I will help with measurements — I'll take it from there."

This turned out well, as I will tell. We all avoided embarrassment, and I explained what I meant to do for them, without resorting to technical jargon. To my surprise, we soon explored the emotional part of the deal — often of prime importance to the advertising agency, and not usually the first place I go.

Actually it turned out to be quite a while before I got to do that. My Lottery contact, Andrew, opened the meeting by framing the need to measure the effectiveness of the Lottery's marketing efforts. State agencies in general, not just the Lottery, were being required to show how they used data to drive their major decisions, control costs, and get the most service out of the dollars they spend. Performance measures were being defined left and right. The bigger the expenditure, the more urgently the need to have a measure of its perfor-

mance was felt.

"All this," said Andrew, "is just background to today's meeting. Next to what we pay out as prizes, the Lottery's advertising budget is one of the biggest items on our financial statement. We need to show that we can measure what we are getting for this effort. I realize this is going to be tough, but we have no choice about doing it."

Jade was moved to respond: "It sounds as though these people have no understanding of marketing. I suppose the state can measure how wide and smooth the roads are, and call that a performance measure for their spending on concrete and tar. But do they think they can measure how people feel about the Lottery? What are they going to do, run a survey?"

There was a general sort of movement in the room as people shifted in their seats and exchanged knowing looks.

"Well you know," said Andrew, "we have been running a survey. And we have been asking people how they feel."

"Right! It's like, On a scale of 1 to 5, from Hate It, to Love It, how do you feel about the Lottery? How sensitive can that be? And how real is it, anyway? We try to influence people so they feel a little warmer and play a little more. But is that going to move someone from a 4 to a 5? I'll bet we could move people to spend enough to cover the cost of our contract, without ever making a dent in that fivepoint scale."

"It is true that those measurements- there are a few of them – are pretty stable. We have not noticed them shifting one way or another as sales go up or down."

Jade was warming to her argument. "Really! You would think that what people spend would be a pretty good measurement of how they feel. I mean, if the jackpots weren't changing all the time. I mean, wouldn't you think that if I felt a little better about the Lottery than usual, I might play a little more often, or spend a little more? Maybe they ought to base a measurement on that!"

Andrew glanced at Veronique. Veronique said, "Thank you, Jade! That does pretty well set the stage for what we are doing today. Perhaps we should have Dr. Wade explain what he does."

On cue, I said, "What I do is all about using the past history of sales to predict the future."

Jade, still warm and perhaps more willing to engage with me given our shared background, spoke up:

"But isn't that flawed from the beginning? Don't we want the future to be something different from the past?"

Here I felt that I needed to cool things down, so I spoke slowly. "Maybe we should agree on some terms before I talk about what I do. You and the Lottery no doubt have goals. I generally won't be talking about goals. I may talk about predictions or expectations. My predictions don't have big aspirations in them. They just reflect things staying the same, neither better nor worse. I want to predict the future, and I want to predict it precisely, and I want to be wrong."

"You want to be wrong?"

"My wrong prediction is evidence for your positive accomplishment. We're on the same team here. I predict how it would look with no change. You make a change, and disprove my prediction. We win."

"And what if we can't disprove your prediction?"

"Then I tend to think that nothing big has changed."

Here is where I would usually hope to have a thorough and leisurely discussion of the concepts of precision, statistical power, and so forth, but Jade went right to what has turned out to be the crux of the matter.

"It doesn't feel like we're on the same side if I'm trying to disprove your prediction, and you're trying to say we haven't done anything."

Now there is no denying the emotional truth of this statement. Often enough, I have been in the position of saying that the nice results we are currently seeing are just about what we would expect under *status quo ante.* This is hard for people to hear, and it's hard to say (even if you avoid the Latin and just say, "the way things were earlier"). It would be more felicitous to put on a positive spin at every opportunity. I try not to spin.

"I hope," I said, "that you're going to cheer for me to be good in my craft, and to make precise predictions. You know why? Because it's easier to disprove a precise prediction, than a vague prediction. "

"And by precise, you mean what exactly?"

"Usually I mean that I can put some tight boundaries around the status quo. The tighter 'no change' is defined, the easier it is to see something as 'change.' That way if something different is going on, we can recognize it."

"So we want you to be precise, so we can contradict you?" Jade seemed to be getting it.

"Yes! And you're going to be happy to prove my prediction wrong. And if it feels to you like I'm the opposing team –that's OK. That's why I'm the outside consultant here."

I softened this with a big smile.

Actually, it seems to be the most natural thing in the world for people to feel toward me, in this role, as they feel toward a parent who is stingy with praise. I tell myself it's the role. It arises this way because of the nature of what we know and how we test things, not because I have a negative attitude. Still, because this is a role that I have taken on, I pass up some opportunities for warmer feelings. Actors who portray villains must have a similar experience.

So here we were: barely twenty minutes into the meeting, and already feeling a little dramatic tension about what I proposed to do. My unearned positive halo as an appreciator (or more!) of fashion modeling was dimming. I was grateful when Veronique moved the conversation into territory that felt safer to me by asking:

"And how do you go about making these precise predictions?"

I will try to recount, in my next little article, how I answered Veronique's question without using the M- (model) word.

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