

Seeing the Other Side of the Algorithm

In our long form project, we want to not only analyze our thesis, but we should also try to think deeply about the “other side”. In this handout, we’ll practice taking the other perspective by identifying the arguments in favor of using mathematical models, even when those models have unintended negative consequences.

The Administrator’s Dilemma

In Chapter 1, O’Neil explains the logic behind Washington D.C.’s decision to use the **IMPACT** system to evaluate teachers.

Here’s an excerpt:

"There’s a logic to the school district’s approach. Administrators, after all, could be friends with terrible teachers. They could admire their style or their apparent dedication. Bad teachers can seem good. So Washington... would minimize this human bias and pay more attention to scores based on hard results: achievement scores in math and reading. The numbers would speak clearly... They would be more fair."

Discussion Questions:

- Why might an objective algorithm be more "fair" than a human principal who has worked with a teacher for ten years?
- According to the text, what was the "laudable goal" the mayor and chancellor were trying to achieve for the students of D.C.?
- If you were the Mayor, how would you respond to a parent who says, "My child’s teacher is nice, but my child still can’t read at grade level"?

The Data Scientist's Perspective

O'Neil notes that models are often used because they are "engineered to evaluate large numbers of people" and "specialize in bulk" .

Here's an excerpt:

"A computer program could speed through thousands of résumés or loan applications in a second or two and sort them into neat lists, with the most promising candidates on top. This not only saved time but also was marketed as fair and objective. After all, it didn't involve prejudiced humans digging through reams of paper, just machines processing cold numbers."

Analyze the Argument:

- How does "scale" benefit a large company that receives 10,000 job applications a week?
- A human recruiter might be tired, hungry, or cranky while reading the 500th resume. Does a machine have those same "human" weaknesses?
- From a business perspective, if a model is 95% accurate and saves millions of dollars, is the 5% error rate an acceptable cost?