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This time last year, ProPublica initiated a conversation over the use of risk assessment algorithms when they concluded that a widely used “score proved remarkably unreliable in forecasting violent crime” in Florida.<sup>1</sup> Their examination of the racial disparities in scoring has been cited countless times, often as a proxy for the power of automation and algorithms in daily life. Indeed, as the authors concluded, these scores are “part of a part of a larger examination of the powerful, largely hidden effect of algorithms in American life.”

Model selection is a critical component of any study, so it is no wonder that criticism of risk assessment algorithms has focused on this aspect. And yet, error bars might reflect precision, but they tell us little about a model’s applicability. For those interested in how these models impact real decision-making processes, the accuracy of the risk assessment models shouldn’t be the only concern. In other words, the driving questions in the risk assessment debate shouldn’t just center on a model’s statistical significance, but on the social significance as well.

Angèle Christin, a professor at Stanford who studies these topics, made the issue abundantly clear when she noted,

During my observations, I realized that risk scores were often ignored. The scores were printed out and added to the heavy paper files about defendants, but prosecutors, attorneys, and judges never discussed them. The scores were not part of the plea bargaining and negotiation process. In fact, most of judges and prosecutors told me that they did not trust the risk scores at all. Why should they follow the recommendations of a model built by a for-profit company that they knew nothing about, using data they didn’t control? They didn’t see the point. For better or worse, they trusted their own expertise and experience instead.<sup>2</sup>

Christin’s on the ground experience urges scholars to consider how these algorithms have come to be implemented in practice. Institutions are durable, and people are often resistant to change, so it is wrong to assume that algorithms could be implemented without any costs. Indeed, astute critics of statistics have found this problem to be an endemic concern, afflicting medicine, clinical work, epidemiology, and pharmacological research, just to name a few.<sup>3</sup>

The issue of social significance cannot be hand waved. Risk assessment systems might further entrench prejudices, or they might abate them, or their effects might be ambiguous. Critics should appreciate this nuance more than anyone else. One of the most important lessons to be drawn from

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<sup>1</sup> Angwin, J., Larson, J., Mattu, S., & Kirchner, L. (2016, May 23). Machine Bias. Retrieved October 04, 2017, from <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>.

<sup>2</sup> Christin, A., (2016, Oct 26). Models in Practice. Retrieved October 04, 2017, from <https://points.datasociety.net/models-in-practice-19e68b18c340>.

<sup>3</sup> Ziliak, S. T., & McCloskey, D. N. (2014). The cult of statistical significance: how the standard error costs us jobs, justice, and lives. Ann Arbor: The University of Michigan Press.

understanding confounding variables is that the introduction of a new variable can change the direction of every other parameter. Where once a negative sign signaled a specific kind of relationship, the addition of a new variable can make it a positive one or could nullify its significance altogether. In practice, the additional information provided by risk assessment tools might not do much to change the direction of judicial systems.

Consider the case of Eric Loomis, which has garnered considerable attention in the press. In *Wisconsin v. Loomis*, defendant Eric Loomis was found guilty for his role in a drive-by shooting. However, during intake, questions that were asked of Loomis went into Compas, a risk-assessment tool. The output from this algorithm seems to have contributed to his sentence length, even though his legal team wasn't allowed to assess the algorithm itself. Last summer, the Wisconsin state supreme court ruled against Loomis, claiming that knowledge of the algorithm's output was a sufficient level of transparency. On appeal, the case has made its way to the Supreme Court.

As Jason Tashea framed it in Wired,

With these facts, or lack thereof, how does a judge weigh the validity of a risk-assessment tool if she cannot understand its decision-making process? How could an appeals court know if the tool decided that socioeconomic factors, a constitutionally dubious input, determined a defendant's risk to society? Following the reasoning in *Loomis*, the court would have no choice but to abdicate a part of its responsibility to a hidden decision-making process.<sup>4</sup>

If Christin is right, courts don't abdicate this power. They might dismiss the findings of the report outright or the report might buttress an existing predilection. To be fair, the Loomis case is important because the defendant isn't being allowed to understand how the tool makes an assessment. Rightly there are some serious concerns of due process. Still, most have seized on the algorithm's accuracy, a question entirely different from the tool's power to sway the sentencing decision process. An important kicker to this story seems to be lost: "Mr. Loomis would have gotten the same sentence based solely on the usual factors."<sup>5</sup>

Far too often, the discussion about risk assessment has been tied to questions of accuracy. But the attention needs to coalesce around its real-world importance, its social significance, as well. Instead of asking, does it merely reflect the world, scholars should probe whether the models drive decisions made in the world.

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<sup>4</sup> Tashea, J., (2017, April 17). Courts Are Using AI To Sentence Criminals. That Must Stop. Retrieved October 04, 2017, from <https://www.wired.com/2017/04/courts-using-ai-sentence-criminals-must-stop-now/>.

<sup>5</sup> Liptak, A., (2017, May 01). Sent to Prison by a Software Program's Secret Algorithms. Retrieved October 04, 2017, from <https://www.nytimes.com/2017/05/01/us/politics/sent-to-prison-by-a-software-programs-secret-algorithms.html>.