

A modeler's manifesto: Synthesizing modeling best practices with social science frameworks to support critical approaches to data science

M.V. Eitzel

Appendix: Self-situating

To practice the methods I am recommending for better modeling, I explain in this appendix the parts of my background, standpoint, and values that are most salient to why I undertook STS training and synthesized it into a Manifesto that I am sharing via publication, and why certain practices appealed to me. In this way, a reader can evaluate their own background and values in order to decide whether the same set of practices appeals to them. Note that not all researchers may want or need to share these kinds of details about themselves. I am suggesting that researchers consider to what degree their standpoint impacts their work, and then to consider what they are comfortable sharing. For me, in constructing the Manifesto, I felt these details were salient and I shared what I was comfortable sharing. A marginalized person should not feel that they need to disclose their race, ethnicity, sexuality, or other attributes in order for their work to “count.” This should be a personal decision for each researcher in each project.

In particular, I recommend that one should describe one's standpoint on topics that relate directly to the research project. In particular, asking yourself why you had the questions you did, or why you used the methods you did, why you were attracted to certain cases or study systems, etc, are potentially illuminating in terms of highlighting what the relevant aspects of yourself might be for a given project. I also recommend asking for feedback from colleagues and collaborators on whether there are other aspects of your situation, background, and values that relate to how and why you conducted your research that you might want to include. This could result in some challenging conversations, especially for those of us who have not explicitly asked these questions before. But it is worth having the patience to work through any difficulties in order to have a clearer picture of how you have arrived at the process and results of your work.

In the case of this particular project, the method of discussion with colleagues as part of the Manifesto creation process was a natural approach for me because I am typically extroverted. I enjoy speaking with people from a variety of backgrounds and have been drawn to many different topics and disciplines from an early age. More specifically, however, I have identified some particular aspects of myself that motivated me to create the manifesto in the first place, and to prefer certain practices within the list I had generated.

Fighting injustice

I was raised with strong values placed in favor of justice and equity, both from my largely politically and socially liberal Californian family, and from the media we consumed (especially *Star Trek: the Next Generation*). As a well-resourced white child, I was also raised with an awareness of my own privilege: I was told about what I had that others didn't, and that I should be generous with what I have, given these advantages. (I now understand that generosity is a complicated construct in this context, but at the time I was not given tools for how to work more appropriately with my privilege.) I was

born in 1980 so much of the message I received in my first 20 years was the fairy tale that injustice happened elsewhere in the world but we had fixed most of our problems in the US in the 1960s and 1970s.

I now understand that to be wrong -- clearly injustice remains rampant in the US as well as other places in the world (particularly evident in the year 2020 as I write this). But because of my values around the importance of equity and justice, I have felt strongly motivated to rectify injustice when I'm made aware of it. This plays into the fact that I sought out Science and Technology Studies training, and as my inquiry into better modeling evolved over time, the question of justice was a natural one for me to adopt in my list. If models are being applied unjustly or to maintain inequities, then we need to act to change that.

One particular type of injustice resonates deeply with me: as a person of settler-colonial origin, I am conscious of the damage done to Indigenous people in California specifically and more broadly around the world. I am also conscious of the benefits I and my ancestors have enjoyed at the expense of Indigenous people. This awareness motivates my interest in collaborative modeling practices. I hope that in working authentically and appropriately as an ally to Indigenous peoples, I can give back some part of the unfair benefit I have had.

Applied, empirical knowing

My family also places a strong value on post-secondary education (most relatives have undergraduate and graduate degrees), and that influence along with my own fascination for understanding how things work has meant that I have studied a number of physical science disciplines. These have brought with them a positivist attitude to knowing in which understanding the world is grounded in observing it, theorizing about it, and making additional observations to check those theories.

Over time, however, I have come to understand the complexities of relativism -- the idea that who you are can change what you observe. But even with that understanding, I am firmly grounded in a desire for empiricism: the idea that if we want a certain effect in the world, we should study how our actions cause things to change, and revise our theories and strategies if we want to achieve that target. I acknowledge the complexity of relativism, but ultimately defer to whether we are achieving what we want by empirically checking the results. I am, however, open to a wide variety of ways of checking empirically, which meant that the plurality of triangulation as a way of checking knowledge was particularly attractive to me.

I also have a very problem-solving oriented approach, especially in the last decade of my work. I have always preferred application over theory (in mathematics, programming, and social theory), and particularly with the desire to rectify injustice, this preference has guided me to mechanistic models that help us to understand how systems work (rather than predictive models that tell us how a system might behave in the future but not why). This interest in working on contemporary problems (which I have observed worsening over my lifetime) lends itself to interdisciplinary work, but I have also had wide-ranging interests all my life. So this accounts for my attraction to interdisciplinary training, approaches, and solutions. Note that the "problem-solving" orientation is also potentially typical of a privileged position in which there is an assumption of efficacy.

Positive orientation towards technology

I identified as ‘nerdy’ from an early age, and loved science fiction. I related well to others who identified the same way, and technology tended to be viewed as positive by my subculture. Our ability to use it made us stand out from those who relied on physical prowess or compliance with fashion trends for social capital. I was also growing up with the idea that we had discovered and were in the process of fixing the big environmental problems technologies had caused: we were closing the hole in the ozone layer, we were reforesting the Amazon, and so on. In addition, my geographic context is the San Francisco Bay Area with its huge centers of tech innovation -- many of my loved ones work at (or have worked at) a variety of tech giants and start-ups. So it should be no surprise that even now I feel that technology can be a part of the solution to the critical problems we are facing.

The difference, however, is that over time I have come to believe that good governance of the technology is even more important than the technology itself (a lesson also present in the science fiction I loved as a child and as an adult). As I was learning about algorithmic injustice, and as I have observed the way technological innovation is often pursued heedless of the impacts of the technology, I have become increasingly adamant about good technological governance and community oversight. This underlies the overall commitments of the Manifesto: how do we do better modeling? Not by rejecting modeling, but by changing how we do it.

A note about gender

I have struggled with whether and how to situate myself with respect to gender identity in this paper. In my academic writing, I generally prefer not to gender myself, and elsewhere in my life, I have resisted male/female stereotypes since I was young. I have debated with myself as to whether my gender identification (or non-identification) is important in how I conducted this inquiry into modeling. It is possible that my biological/hormonal/socialized gender, and my resistance to that in various situations, is related to my approach here. However, in the end I made the decision not to gender myself, because I would rather that readers not make assumptions about me or my ideas based on their own internalized vision associated with gendered labels. I would rather engage individually with others on this topic than in the abstract context of an academic paper. This is an example of disclosing the details I am comfortable disclosing, and maintaining boundaries where appropriate.