I realize that the examples I've given so far may not seem to speak to contemporary humanists' reasons for *caring* about perspectival knowledge. I've approached the topic so far in a cool epistemological way, but in reality this topic is charged with ethical and political passion. People usually insist on perspectivalism because they feel that someone's perspective is being *ignored.*

So in the rest of the talk I want to glance at some examples that move us toward politically significant perspectival differences. In the process of doing that I also want to show that perspectival methods are not just for comparing large groups of texts. They can also be good ways of bringing text analysis to bear on individual books or even individual passages.

So for instance, suppose we're interested in understanding the transformation of science fiction across the twentieth century. One thing we can do is compare models across chronological boundaries, in the same way we've been comparing models across generic boundaries. So previously, you'll recall, these were mysteries and this was science fiction.

Now this is science fiction 1910-39, and this is science fiction 1940-69. We could measure the overall distance between these periods as a way to estimate pace of change—and if you do that, by the way, this break point at 1940 is the moment of greatest change in the twentieth century. But we could also turn this into a question about individual books. How does each book's probability of being science fiction *change* when we shift vantage points from a prewar model to a postwar model?

Here are some results from that experiment. These are all postwar books. The start point for each arrow is a book's probability of being science fiction as seen by a model trained on prewar examples; the end point is the probability as seen by a contemporary (postwar) model. The difference of color means nothing except that it helps you see which books I've labeled. One way to understand how the genre changed across the period is to look at books that move a lot. I don't know how many fans of US science fiction are in the audience, but for instance *Stranger in a Strange Land* was a notorious book that stretched the boundaries of science fiction because it's less about technology than religion, sexuality, and psychology. That

may help us understand what was new about the so-called New Wave of science fiction in the 60s. Another detail that might be relevant: when we look at the "most surprising" books from this period, books by women, or edited by women, tend to rise to the top of the list. This begins to get at the kind of social issue most humanists have in mind when they emphasize importance of perspective.

But of course, I'm just guessing what aspects of these books might have been hard for a prewar model to recognize as SF. If we want to confirm these speculations, one thing we can do is break the book into pages or paragraphs, and look for specific passages where prewar and postwar models disagree. I did that with Ursula LeGuin's *Left Hand of Darkness,* and here's the paragraph that was most surprising to prewar models of science fiction. It happens to be a paragraph about the book's central premise: the fact that "Gethenians" can be either sex over the course of their lives. I've italicized words that tended to make this a surprising paragraph—in other words, words where there's a big difference in the coefficients of prewar and postwar models.

Obviously, it's a paragraph about sex. But that's just one of the ways this passage signals a change in the science fiction genre. More broadly, this language is shaped by psychological and social reasoning (*burden, privilege, free, choice, shared, psychological effects*). And if we do the same kind of model-assisted reading of other books (say *Stranger in a Strange Land)* we find similar patterns. This gives us a clue about how science fiction changed in the immediate postwar period—a move, if you will, away from physics and toward psychology.

One more example, and I'll be done. So far nothing I've been doing is at all sophisticated in terms of natural language processing. I've been training predictive models on bags of words. But there are many other things we can do. For instance, I've collaborated with David Bamman, whose Java package BookNLP does coreference resolution to find words associated with characters in fiction. Here, for instance, we learn that Maggie Tulliver …

It's not perfect, but when we swing it across 88,000 works of fiction we get this pattern.

The northeast and southwest corners of figure 2 contain words where there's a lot of agreement about gender. No matter who wrote the book, feminine characters tend to have mothers and hair, and say "oh." Masculine characters tend to have beards and pockets, and say "sir." Things get more interesting when we look at the other diagonal. In the northwest corner, we find words that men tend to use to describe men, and women to describe women. It turns out that when Maggie Tulliver "wondered" about spiders, she was doing something authors tend to associate with characters of their own gender. Remembering, thinking, hearing, and seeing fall in the same category. All of these verbs are rather clearly signs of subjectivity. It's less obvious why authors claim certain body parts (the feet, throat, head, and stomach) for their own gender identity.

In the southeast corner, we find a group of words that men use in characterizing women, and women use in

characterizing men. Heteronormative patterns are visible here (marry, kiss, love). But more generally, passive roles are prominent. I have used the prefix "was-" to indicate cases where a character is the object of a verb rather than its subject. So, for instance, "In the darkness of that night she *saw* Stephen's face turned towards her in passionate, reproachful misery" counts as an instance of "saw" for Maggie, but "was-seen" for Stephen Guest (3: 231). Other words in this region describe how a character was seen, even when the character is the subject of the sentence: cases where a character *seemed* or *appeared,* had an *expression* on his face, or used a certain *tone*. It is clear, in short, that writers who are men tend to describe women externally—and vice-versa.